CITIGROUP GLOBAL MARKETS HOLDINGS INC.

HALF-YEARLY FINANCIAL REPORT

FOR THE SIX MONTHS ENDED JUNE 30, 2023

August 30, 2023

Responsibility Statement

The below named authorized officers of Citigroup Global Markets Holdings Inc., a New York corporation (the "Company"), confirm that to the best of their knowledge: (i) the accompanying financial statements (a) were prepared in accordance with Generally Accepted Accounting Principles in the United States of America and (b) give a true and fair view of the assets, liabilities, financial position and income or loss of the Company and the undertakings included in the consolidation taken as a whole; and (ii) the accompanying Management Report includes (a) a fair review of the development and performance of the business and position of the Company and the undertakings included in the consolidation taken as a whole and (b) a description of the principal risks and uncertainties that they face.

CITIGROUP GLOBAL MARKETS HOLDINGS INC.

By: /s/ John Heppolette
John Heppolette
Chairman and
Chief Executive Officer

By: /s/ Daniel S. Palomaki
Daniel S. Palomaki
Chief Financial Officer

CITIGROUP GLOBAL MARKETS HOLDINGS INC.

MANAGEMENT REPORT

CITIGROUP GLOBAL MARKETS HOLDINGS INC.

Citigroup Global Markets Holdings Inc. (**CGMHI**), operating through its subsidiaries, engages in full-service investment banking and securities brokerage business. Throughout these disclosures, "CGMHI" and the "Company" refer to Citigroup Global Markets Holdings Inc. and its consolidated subsidiaries. CGMHI is managed in the *Institutional Clients Group (ICG)* operating segment.

CGMHI's parent, Citigroup Inc. (**Citigroup**, or **Citi**), is a global diversified financial services holding company whose businesses provide consumers, corporations, governments and institutions with a broad, yet focused, range of financial products and services, including consumer banking and credit, corporate and investment banking, securities brokerage, trade and securities services and wealth management. Citi has approximately 200 million customer accounts and does business in nearly 160 countries and jurisdictions.

Citigroup is managed pursuant to three operating segments: *Institutional Clients Group*, *Personal Banking and Wealth Management* and *Legacy Franchises*. Activities not assigned to the operating segments are included in *Corporate/Other*.

The principal offices of CGMHI are located at 388 Greenwich Street, New York, NY, 10013. CGMHI was incorporated in New York on 23 February 1977 and is the successor to Salomon Smith Barney Holdings Inc. On 7 April 2003, CGMHI filed a Restated Certificate of Incorporation, changing its name from Salomon Smith Barney Holdings Inc. to Citigroup Global Markets Holdings Inc.

Institutional Clients Group

Institutional Clients Group (ICG) includes Services, Markets and Banking. *ICG* provides corporate, institutional and public sector clients around the world with a full range of wholesale banking products and services, including fixed income and equity sales and trading, foreign exchange, prime brokerage, derivative services, equity and fixed income research, corporate lending, investment banking and advisory services, cash management, trade finance and securities services. *ICG* transacts with clients in both cash instruments and derivatives, including fixed income, foreign currency, equity and commodity products.

ICG's revenue is generated primarily from fees and spreads associated with these activities. *ICG* earns fee income for assisting clients with transactional services and clearing and providing brokerage and investment banking services and other such activities. Such fees are recognized at the point in time when Citigroup's performance under the terms of a contractual arrangement is completed, which is typically at the trade/execution date or closing of a transaction. Revenue generated from these activities is recorded in *Commissions and fees* and *Investment banking*. Revenue is also generated from assets under custody and administration, which is recognized as/when the associated promised service is satisfied, which normally occurs at the point in time the service is requested by the customer and provided by Citi. Revenue generated from these activities is primarily recorded in *Fiduciary fees*.

In addition, as a market maker, *ICG* facilitates transactions, including holding product inventory to meet client demand, and earns the differential between the price at which it buys and sells the products. These price differentials and the unrealized gains and losses on the inventory are recorded in *Principal transactions*. Interest income earned on assets held, less interest paid on long- and short-term debt and secured funding transactions, is recorded as *Net interest income*.

The amount and types of Markets revenues are impacted by a variety of interrelated factors, including market liquidity; changes in market variables such as interest rates, foreign exchange rates, equity prices, commodity prices and credit spreads, as well as their implied volatilities; investor confidence and other macroeconomic conditions. Assuming all other market conditions do not change, increases in client activity levels or bid/offer spreads generally result in increases in revenues. However, changes in market conditions can significantly impact client activity levels, bid/offer spreads and the fair value of product inventory. For example, a decrease in market liquidity may increase bid/offer spreads, decrease client activity levels and widen credit spreads on product inventory positions. *ICG*'s management of the Markets businesses involves daily monitoring and evaluation of the above factors at the trading desk as well as the country level.

In the Markets businesses, client revenues are those revenues directly attributable to client transactions at the time of inception, including commissions, interest or fees earned. Client revenues do not include the results of client facilitation activities (e.g., holding product inventory in anticipation of client demand) or the results of certain economic hedging activities.

ICG's international presence is supported by trading floors in approximately 80 countries and a proprietary network in 95 countries and jurisdictions. At June 30, 2023, *ICG* had $1.8 trillion in assets and $818 billion in deposits. Securities services managed $23.7 trillion in assets under custody and administration at June 30, 2023, of which Citi provided both custody and administrative services to certain clients related to $2.2 trillion of such assets. Managed assets under trust were $4.1 trillion at June 30, 2023.

INFORMATION RELATING TO DERIVATIVE INSTRUMENTS AND RISK MANAGEMENT DERIVATIVES ACTIVITIES

In the ordinary course of business, the Company enters into various types of derivative transactions, which include:

- *Futures and forward contracts*, which are commitments to buy or sell at a future date a financial instrument, commodity or currency at a contracted price that may be settled in cash or through delivery of an item readily convertible to cash.
- *Swap contracts*, which are commitments to settle in cash at a future date or dates that may range from a few days to a number of years, based on differentials between specified indices or financial instruments, as applied to a notional principal amount.
- *Option contracts*, which give the purchaser, for a premium, the right, but not the obligation, to buy or sell within a specified time a financial instrument, commodity or currency at a contracted price that may also be settled in cash, based on differentials between specified indices or prices.

Swaps, forwards and some option contracts are over-the-counter (OTC) derivatives that are bilaterally negotiated with counterparties and settled with those counterparties, except for swap contracts that are novated and "cleared" through central counterparties (CCPs). Futures contracts and other option contracts are standardized contracts that are traded on an exchange with a CCP as the counterparty from the inception of the transaction. The Company enters into derivative contracts relating to interest rate, foreign currency, commodity and other market/credit risks for the following reasons:

- *Trading Purposes*: The Company trades derivatives as an active market maker. The Company offers its customers derivatives in connection with their risk management actions to transfer, modify or reduce their interest rate, foreign exchange and other market/credit risks or for their own trading purposes. The Company also manages its derivative risk positions through offsetting trade activities, controls focused on price verification and daily reporting of positions to senior managers.
- *Hedging*: The Company uses derivatives in connection with its own risk management activities to hedge certain risks. Hedging may be accomplished by applying hedge accounting in accordance with ASC 815, *Derivatives and Hedging*. For example, CGMHI issues fixed-rate long-term debt and then enters into a receive-fixed, pay-variable-rate interest rate swap with the same tenor and notional amount to synthetically convert the interest payments to a net variable-rate basis. This strategy is the most common form of an interest rate hedge, as it minimizes net interest cost in certain yield curve environments. Derivatives are also used to manage market risks inherent in specific groups of on-balance sheet assets and liabilities, including commodities and borrowings.

Derivatives may expose the Company to market, credit or liquidity risks in excess of the amounts recorded on the Consolidated Statement of Financial Condition. Market risk on a derivative product is the exposure created by potential fluctuations in interest rates, market prices, foreign exchange rates and other factors and is a function of the type of product, the volume of transactions, the tenor and terms of the agreement and the underlying volatility. Credit risk is the exposure to loss in the event of nonperformance by the other party to satisfy a derivative liability where the value of any collateral held by CGMHI is not adequate to cover such losses. The recognition in earnings of unrealized gains on derivative transactions is subject to management's assessment of the probability of counterparty default. Liquidity risk is the potential exposure that arises when the size of a derivative position may affect the ability to monetize the position in a reasonable period of time and at a reasonable cost in periods of high volatility and financial stress.

Derivative transactions are customarily documented under industry standard master netting agreements, which provide that following an event of default, the non-defaulting party may promptly terminate all transactions between the parties and determine the net amount due to be paid to, or by, the defaulting party. Events of default include (i) failure to make a payment on a derivative transaction that remains uncured following applicable notice and grace periods, (ii) breach of agreement that remains uncured after applicable notice and grace periods, (iii) breach of a representation, (iv) cross default, either to third-party debt or to other derivative transactions entered into between the parties, or, in some cases, their affiliates, (v) the occurrence of a merger or consolidation that results in the creditworthiness of a party becoming materially weaker and (vi) the cessation or repudiation of any applicable guarantee or other credit support document. Obligations under master netting agreements are often secured by collateral posted under an industry standard credit support annex to the master netting agreement. An event of default may also occur under a credit support annex if a party fails to make a collateral delivery that remains uncured following applicable notice and grace periods.

The netting and collateral rights incorporated in the master netting agreements are considered to be legally enforceable if a supportive legal opinion has been obtained from counsel of recognized standing that provides (i) the requisite level of certainty regarding enforceability and (ii) that the exercise of rights by the non-defaulting party to terminate and close-out transactions on a net basis under these agreements will not be stayed or avoided under applicable law upon an event of default, including bankruptcy, insolvency or similar proceeding.

A legal opinion may not be sought for certain jurisdictions where local law is silent or unclear as to the enforceability of such rights or where adverse case law or conflicting regulation may cast doubt on the enforceability of such rights. In some jurisdictions and for some counterparty types, the insolvency law may not provide the requisite level of certainty. For example, this may be the case for certain sovereigns, municipalities, central banks and U.S. pension plans.

Exposure to credit risk on derivatives is affected by market volatility, which may impair the ability of counterparties to satisfy their obligations to the Company. Credit limits are established and closely monitored for customers engaged in derivatives transactions. CGMHI considers the level of legal certainty regarding enforceability of its offsetting rights under master netting agreements and credit support annexes to be an important factor in its risk management process. Specifically, CGMHI generally transacts much lower volumes of derivatives under master netting agreements where CGMHI does not have the requisite level of legal certainty regarding enforceability, because such derivatives consume greater amounts of single counterparty credit limits than those executed under enforceable master netting agreements.

Cash collateral and security collateral in the form of G10 government debt securities are often posted by a party to a master netting agreement to secure the net open exposure of the other party; the receiving party is free to commingle/rehypothecate such collateral in the ordinary course of its business. Nonstandard collateral such as corporate bonds, municipal bonds, U.S. agency securities and/or MBS may also be pledged as collateral for derivative transactions. Security collateral posted to open and maintain a master netting agreement with a counterparty, in the form of cash and/or securities, may from time to time be segregated in an account at a third-party custodian pursuant to a tri-party account control agreement.

RISK FACTORS

(Extracted from Citigroup's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the U.S. Securities and Exchange Commission on the 24th day of February, 2023.)

The following discussion presents what management currently believes could be the material risks and uncertainties that could impact Citi's businesses, results of operations and financial condition. Other risks and uncertainties, including those not currently known to Citi or its management, could also negatively impact Citi's businesses, results of operations and financial condition. Thus, the following should not be considered a complete discussion of all of the risks and uncertainties that Citi may face.

MARKET-RELATED RISKS

Macroeconomic, Geopolitical and Other Challenges and Uncertainties Could Continue to Have a Negative Impact on Citi.

Citi has experienced, and could experience in the future, negative impacts to its businesses, results of operations and financial condition as a result of various macroeconomic, geopolitical and other challenges, uncertainties and volatility. These include, among other things, significantly elevated levels of inflation, higher interest rates, global supply shocks and lower economic growth rates, as well as an increasing risk of recession in Europe, the U.S. and other countries.

For example, in 2022, the U.S., the U.K., the EU and other economies experienced significantly higher levels of widespread inflation. As a result, the Federal Reserve Board (FRB) and other central banks have substantially raised interest rates, reduced the size of their balance sheets and taken other actions in an aggressive effort to curb inflation. These actions are expected to slow economic growth, increase the risk of recession and increase the unemployment rate in the U.S. and other countries, all of which would likely adversely affect Citi's consumer and institutional clients, businesses and results of operations. Elevated levels of inflation are also expected to continue to result in higher labor and other costs, thus putting further pressure on Citi's expenses.

Interest rates on loans Citi makes are typically based off or set at a spread over a benchmark interest rate and would likely decline or rise as benchmark rates decline or rise, respectively. While Citi expects its overall net interest income would generally increase due to higher interest rates, higher rates could adversely affect its funding costs, levels of deposits in its consumer and institutional businesses and certain business or product revenues. Citi's net interest income could be adversely affected due to a flattening (a lower spread between shorter-term versus longer-term interest rates) or longer lasting or more severe inversion (shorter-term interest rates exceeding longer-term interest rates) of the interest rate yield curve, as Citi, similar to other banks, typically pays interest on deposits based on shorter-term interest rates and earns money on loans based on longer-term interest rates. Additionally, Citi's balance sheet includes interest-rate sensitive fixed-rate assets such as U.S. Treasuries, U.S. agency securities and residential mortgages, among others, whose valuation would be adversely impacted in a rising-rate environment and/or whose hedging costs may increase.

Russia's war in Ukraine has caused supply shocks in energy, food and other commodities markets, worsened inflation, increased cybersecurity risks, increased the risk of recession in Europe and heightened geopolitical tensions. Actions by Russia, and any further measures taken by the U.S. or its allies, could continue to have negative impacts on regional and global energy and other commodities and financial markets and macroeconomic conditions, adversely impacting jurisdictions where Citi operates and Citi's customers, clients and employees. Citi's ability to continue to reduce its operations and exposure in Russia, including completion of the wind-down of its consumer and local commercial banking operations and nearly all of its institutional banking services in the country, may be negatively impacted by macroeconomic challenges and uncertainties, local market conditions, and sanctions and other governmental regulations or actions.

Moreover, Citi's remaining operations in Russia subject Citi to various other risks, among which are foreign currency volatility, including appreciations or devaluations; restrictions arising from retaliatory Russian laws and regulations on the conduct of its business, including, without limitation, its provision to its customers of certain securities services; sanctions or asset freezes; and other deconsolidation events. Examples of triggers that may result in deconsolidation of Citi's subsidiary bank in Russia, AO Citibank, include voluntary or forced sale of ownership or loss of control due to actions of relevant governmental authorities, including expropriation (i.e., the entity becomes subject to the complete control of a government, court, administrator, trustee or regulator); revocation of banking license; and loss of ability to elect a board of directors or appoint members of senior management. In the event of a loss of control of AO Citibank, Citi would be required to write off its net investment in the entity, recognize a CTA loss through earnings and recognize a loss on intercompany liabilities owed by AO Citibank to other Citi entities outside of Russia. In the sole event of a substantial liquidation, as opposed to a loss of control, Citi would be required to recognize the CTA loss through earnings and would evaluate its remaining net investment as circumstances evolve. Additionally, Citi may incur reputational harm if its actions are perceived to be misaligned with Citi's announced reductions of its operations and exposure in Russia. For additional information about these risks, see the operational processes and systems, cybersecurity and emerging markets risk factors below.

COVID-19 is expected to continue to adversely affect global health and could negatively impact macroeconomic conditions in 2023. The extent of the impact remains uncertain and will largely depend on future developments in China, the U.S. and other countries, such as the severity and duration of the public health consequences, including the course of variants; the public response; and government actions. COVID-19 could again disrupt supply chains, worsen inflation and reduce economic activity. These factors could adversely impact Citi's businesses and results of operations and financial condition.

Additional areas of uncertainty include, among others, economic and geopolitical challenges related to China, including related policy actions, distress in Chinese real estate finance and other credit markets, tensions or conflicts between China and Taiwan and/or between China and the U.S.; significant disruptions and volatility in financial markets, including foreign currency volatility and devaluations and continued strength in the U.S. dollar; other geopolitical tensions and conflicts; protracted or widespread trade tensions; financial market, other economic and political disruption driven by populist movements and governments; natural disasters; other pandemics; and election outcomes, including the effects of divided government in the U.S., such as with respect to raising of the federal debt limit. For example, Citi's market-making businesses can suffer losses resulting from the widening of credit spreads due to unanticipated changes in financial markets. Moreover, adverse developments or downturns in one or more of the world's larger economies would likely have a significant impact on the global economy or the economies of other countries because of global financial and economic linkages.

STRATEGIC RISKS

Citi's Ability to Return Capital to Common Shareholders Substantially Depends on Regulatory Capital Requirements, Including the Results of the CCAR Process and Dodd-Frank Act Regulatory Stress Tests.

Citi's ability to return capital to its common shareholders consistent with its capital planning efforts and targets, whether through its common stock dividend or through a share repurchase program, substantially depends, among other things, on regulatory capital requirements, including the annual recalibration of the Stress Capital Buffer (SCB), which is based upon the results of the CCAR process required by the FRB, and recalibration of the GSIB surcharge.

Citi's ability to return capital also depends on its results of operations and financial condition, including the capital impact related to its remaining divestitures, such as, among other things, any temporary capital impact from CTA losses (net of hedges) between transaction signings and closings and achievement of the expected capital benefits from the divestitures (for additional information, see the continued investments risk factor below); Citi's effectiveness in planning, managing and calculating its level of risk-weighted assets under both the Advanced Approaches and the Standardized Approach, Supplementary Leverage ratio (SLR) and GSIB surcharge; its implementation and maintenance of an effective capital planning process and management framework; forecasts of macroeconomic conditions; and deferred tax asset (DTA) utilization (see the ability to utilize DTA risk factor below).

Changes in regulatory capital rules, requirements or interpretations could continue to have a material impact on Citi's regulatory capital. For example, on October 1, 2022, Citi's required regulatory CET1 Capital ratio increased to 11.5% from 10.5% due to an increase in the SCB requirement (see below for information on calculation of the SCB). In addition, on January 1, 2023, Citi's required regulatory CET1 Capital ratio further increased to 12% from 11.5% under the Standardized Approach, as the current GSIB surcharge increased to 3.5% from 3.0%. Due to these increases as well as macroeconomic uncertainty, Citi paused common share repurchases beginning as of the third quarter of 2022. In addition, the U.S. banking agencies are considering a number of changes to the U.S. regulatory capital framework in the future, including, but not limited to, revisions to the U.S. Basel III rules, and potential changes to the GSIB surcharge, SLR and discretionary Countercyclical Capital Buffer. All of these potential changes could negatively impact Citi's regulatory capital position or increase Citi's regulatory capital requirements.

All firms subject to CCAR requirements, including Citi, will continue to be subject to a rigorous regulatory evaluation of capital planning practices, including, but not limited to, governance, risk management, data quality and internal controls. Citi's ability to return capital may be adversely impacted if such an evaluation of Citi results in negative findings. The FRB has stated that it expects capital adequacy practices to continue to evolve and to likely be determined by its yearly cross-firm review of capital plan submissions. Similarly, the FRB has indicated that, as part of its stated goal to continually evolve its annual stress testing requirements, several parameters of the annual stress testing process may continue to be altered, including the severity of the stress test scenario, the FRB modeling of Citi's balance sheet, pre-provision net revenue and stress losses, and the addition of components deemed important by the FRB. For information on limitations on Citi's ability to return capital to common shareholders, as well as the CCAR process, supervisory stress test requirements and GSIB surcharge, see the risk management risk factor below.

Beginning January 1, 2022, Citi was required to phase into regulatory capital, at 25% per year, the changes in retained earnings, DTAs and ACL determined upon the January 1, 2020 CECL adoption date, as well as subsequent changes in the ACL through December 31, 2021. The FRB has stated that it plans to maintain its current framework for calculating allowances on loans in the supervisory stress test through the 2023 supervisory stress test cycle, while continuing to evaluate appropriate future enhancements to this framework. The impacts on Citi's capital adequacy of the FRB's incorporation of CECL into its supervisory stress tests on an ongoing basis, and of other potential regulatory changes in the FRB's stress testing methodologies, remain unclear.

In addition, the annual stress testing requirements are integrated into ongoing regulatory capital requirements. Citi's SCB equals the maximum decline in its CET1 Capital ratio under the supervisory severely adverse scenario over a nine-quarter CCAR measurement period, plus four quarters of planned common stock dividends, subject to a minimum requirement of 2.5%. The SCB is calculated by the FRB using its proprietary data and modeling of each firm's results. Accordingly, Citi's SCB may change annually, based on the supervisory stress test results, thus potentially resulting in additional volatility in the calculation of Citi's required regulatory CET1 Capital ratio under the Standardized Approach. Similar to the other regulatory capital buffers, a breach of the SCB may result in graduated limitations on capital distributions.

Although various uncertainties exist regarding the extent of, and the ultimate impact to Citi from, these changes to the FRB's regulatory capital, stress testing and CCAR regimes, these changes could increase the level of capital Citi is required or elects to hold, including as part of Citi's management buffer, thus potentially impacting the extent to which Citi is able to return capital to shareholders.

Citi Must Continually Review, Analyze and Successfully Adapt to Ongoing Regulatory and Legislative Uncertainties and Changes in the U.S. and Globally.

Citi, its management and its businesses continue to face ongoing regulatory and legislative uncertainties and changes, both in the U.S. and globally. While the areas of ongoing regulatory and legislative uncertainties and changes facing Citi are too numerous to list completely, examples include, but are not limited to (i) potential fiscal, monetary, tax, sanctions and other changes promulgated by the U.S. federal government and other governments, including as a result of priority shifts depending on individuals, political parties and other groups in governmental positions; (ii) potential changes to various aspects of the regulatory capital framework and requirements applicable to Citi, including the Basel III rules (see the capital return risk factor above); and (iii) rapidly evolving legislative and regulatory requirements and other government initiatives in the U.S. and globally related to climate change and other ESG areas that vary, and may conflict, across jurisdictions, including any new disclosure requirements (see the climate change risk factor below). References to "regulatory" refer to both formal regulation and the views and expectations of Citi's regulators in their supervisory roles.

For example, in February 2023, the Consumer Financial Protection Bureau proposed significant changes to the maximum amounts on credit card late fees, which, if adopted as proposed, would reduce credit card fee revenues in

Branded cards and Retail services in *PBWM*. In addition, U.S. and international regulatory and legislative initiatives have not always been undertaken or implemented on a coordinated basis, and areas of divergence have developed and continue to develop with respect to their scope, interpretation, timing, structure or approach, leading to inconsistent or even conflicting requirements, including within a single jurisdiction. For example, in 2019, the European Commission adopted, as part of Capital Requirements Directive V (CRD V), a new requirement for major banking groups headquartered outside the EU (which would include Citi) to establish an intermediate EU holding company where the foreign bank has two or more institutions (broadly meaning banks, broker-dealers and similar financial firms) established in the EU. While in some respects the requirement mirrors an existing U.S. requirement for non-U.S. banking organizations to form U.S. intermediate holding companies, the implementation of the EU holding company requirement could lead to additional complexity with respect to Citi's resolution planning, capital and liquidity allocation and efficiency in various jurisdictions.

Further, ongoing regulatory and legislative uncertainties and changes make Citi's and its management's long-term business, balance sheet and strategic budget planning difficult, subject to change and potentially more costly and may impact its results of operations. U.S. and other regulators globally have implemented and continue to discuss various changes to certain regulatory requirements, which would require ongoing assessment by management as to the impact to Citi, its businesses and business planning. For example, while the Basel III regulatory reforms and revised market risk framework have been finalized at the international level, there remain significant uncertainties with respect to the integration of these revisions into the U.S. regulatory capital framework. Business planning is required to be based on possible or proposed rules or outcomes, which can change dramatically upon finalization, or upon implementation or interpretive guidance from numerous regulatory bodies worldwide, and such guidance can change. Regulatory and legislative changes have also significantly increased Citi's compliance risks and costs (see the implementation and interpretation of regulatory changes risk factor below) and can adversely affect Citi's businesses, results of operations and financial condition.

Citi's Continued Investment and Other Initiatives as Part of Its Transformation and Strategic Refresh May Not Be as Successful as It Projects or Expects.

As part of its transformation and other strategic initiatives, Citi continues to make significant investments to improve its risk and control environment, modernize its data and technology infrastructure and further enhance safety and soundness (for additional information on these investments, see the legal and regulatory proceedings risk factor below). Citi also continues to make business-led investments, as part of the execution of its strategic refresh. For example, Citi has been making investments across the Company, including, for example, hiring front office colleagues and enhancing product capabilities and platforms to improve client digital experiences and add scalability and implementing new capabilities and partnerships. Citi has also been pursuing productivity improvements through various technology and digital initiatives, organizational simplification and location strategies.

Citi's multiyear transformation initiatives involve significant execution complexity, and there is inherent risk that these will not be as productive or effective as Citi expects, or at all. Conversely, failure to properly invest in and upgrade Citi's technology and processes could result in Citi's inability to meet regulatory expectations, be sufficiently competitive, serve clients effectively and avoid operational errors (for additional information, see the operational processes and systems and legal and regulatory proceedings risk factors below). Moreover, Citi's ability to achieve expected returns on its investments and productivity improvements depends, in part, on factors that it cannot control, including, among others, macroeconomic challenges and uncertainties; customer, client and competitor actions; and ongoing regulatory requirements or changes.

Citi's strategic refresh also includes the divestiture of its remaining consumer banking businesses in *Legacy Franchises*, including Mexico Consumer/SBMM, in order to simplify the Company and enhance its allocation of resources. These divestitures involve significant uncertainty and execution complexity, and may result in additional CTA or other losses, charges or other negative financial or strategic impacts, which could be material (for information about risks related to Citi's operations in Russia, see the macroeconomic challenges and uncertainties risk factor above). For additional information about CTA losses, see the capital return risk factor above and the incorrect assumptions or estimates risk factor below.

Citi's investment and other initiatives may continue to evolve as its business strategies, the market environment and regulatory expectations change, which could make the initiatives more costly and more challenging to implement, and limit their effectiveness.

Climate Change Presents Various Financial and Non-Financial Risks to Citi and its Customers and Clients.

Climate change presents both immediate and long-term risks to Citi and its customers and clients, with the risks expected to increase over time. Climate risks can arise from both physical risks (those risks related to the physical effects of climate change) and transition risks (risks related to regulatory, market, technological, stakeholder and legal changes from a transition to a low-carbon economy). Physical and transition risks can manifest themselves differently across Citi's risk categories in the short, medium and long terms. Physical risks from climate change include acute risks, such as hurricanes and floods, as well as consequences of chronic changes in climate, such as rising sea levels, prolonged droughts and systemic changes to geographies and any resulting population migration. Such physical risks could have adverse financial, operational and other impacts on Citi, both directly on its business and operations, and indirectly as a result of impacts to Citi's clients, customers, vendors and other counterparties. These impacts can include destruction, damage or impairment of properties and other assets, disruptions to business operations and supply chains and reduced availability or increase in the cost of insurance. Physical risks can also impact Citi's credit risk exposures, for example, in its mortgage and commercial real estate lending businesses.

Transition risks may arise from changes in regulations or market preferences toward low-carbon industries or sectors, which in turn could have negative impacts on asset values, results of operations or the reputations of Citi and its customers and clients. For example, Citi's corporate credit exposures include oil and gas, power and other industries that may experience reduced demand for carbon-intensive products due to the transition to a low-carbon economy. Failure to adequately consider transition risk in developing and executing on its business strategy could lead to a loss of market share, lower revenues and higher credit costs.

Additionally, if Citi's response to climate change is perceived to be ineffective or insufficient or Citi is unable to achieve its objectives or commitments relating to climate change, its businesses, reputation, attractiveness to certain investors and efforts to recruit and retain employees may suffer. For example, the need to decarbonize in a gradual and orderly way, while promoting energy security, may lead to continued exposure to carbon-intensive activity that in turn may raise such reputational risks.

Even as some regulators seek to mandate additional disclosure of climate-related information, Citi's ability to comply with such requirements and conduct more robust climate-related risk analyses may be hampered by lack of information and reliable data. Data on climate-related risks is limited in availability, often based on estimated or unverified figures, collected and reported on a lag, and variable in quality. Modeling capabilities to analyze climate-related risks and interconnections are improving, but remain incomplete. Moreover, U.S. and non-U.S. banking regulators and others are increasingly focusing on the issue of climate risk at financial institutions, both directly and with respect to their clients. For example, in December 2022, the FRB requested comment on draft principles that would provide a high-level framework for the safe and sound management of exposures to climate-related financial risks for FRB-supervised financial institutions with more than $100 billion in assets.

Legislative and regulatory changes and uncertainties regarding climate-related risk management and disclosures are likely to result in higher regulatory, compliance, credit, reputational and other risks and costs for Citi (for additional information, see the ongoing regulatory and legislative uncertainties and changes risk factor above). In addition, Citi could face increased regulatory, reputational and legal scrutiny as a result of its climate risk, sustainability and other ESG-related commitments and disclosures. Citi also faces potentially conflicting anti-ESG initiatives from certain U.S. state governments that may impact its ability to conduct certain business within those jurisdictions, as well as from Congress.

Citi's Ability to Utilize Its DTAs, and Thus Reduce the Negative Impact of the DTAs on Citi's Regulatory Capital, Will Be Driven by Its Ability to Generate U.S. Taxable Income.

At December 31, 2022, Citi's net DTAs were $27.7 billion, net of a valuation allowance of $2.4 billion, of which $10.9 billion was deducted from Citi's CET1 Capital under the U.S. Basel III rules, primarily relating to net operating losses, foreign tax credit and general business credit carry-forwards. Of the net DTAs at December 31, 2022, $1.9 billion related to foreign tax credit (FTC) carry-forwards, net of a valuation allowance. The carry-forward utilization period for FTCs is 10 years and represents the most time-sensitive component of Citi's DTAs. The FTC carry-forwards at December 31, 2022 expire over the period of 2025–2029. Citi must utilize any FTCs generated in the then-current-year tax return prior to utilizing any carry-forward FTCs.

The accounting treatment for realization of DTAs, including FTCs, is complex and requires significant judgment and estimates regarding future taxable earnings in the jurisdictions in which the DTAs arise and available tax planning strategies. Forecasts of future taxable earnings will depend upon various factors, including, among others, macroeconomic conditions. In addition, any future increase in U.S. corporate tax rates could result in an increase in Citi's DTA, which may subject more of Citi's existing DTA to exclusion from regulatory capital while improving Citi's ability to utilize its FTC carry-forwards.

Citi's overall ability to realize its DTAs will primarily be dependent upon its ability to generate U.S. taxable income in the relevant tax carry-forward periods. Although utilization of FTCs in any year is generally limited to 21% of foreign source taxable income in that year, overall domestic losses (ODL) that Citi has incurred in the past allow it to reclassify domestic source income as foreign source. Failure to realize any portion of the net DTAs would have a corresponding negative impact on Citi's net income and financial returns. Citi has not been and does not expect to be subject to the Base Erosion Anti-Abuse Tax (BEAT), which, if applicable to Citi in any given year, would have a significantly adverse effect on both Citi's net income and regulatory capital.

Citi's Interpretation or Application of the Complex Tax Laws to Which It Is Subject Could Differ from Those of Governmental Authorities, Which Could Result in Litigation or Examinations and the Payment of Additional Taxes, Penalties or Interest.

Citi is subject to various income-based tax laws of the U.S. and its states and municipalities, as well as the numerous non-U.S. jurisdictions in which it operates. These tax laws are inherently complex, and Citi must make judgments and interpretations about the application of these laws to its entities, operations and businesses.

For example, the Organization for Economic Cooperation and Development (OECD) Pillar 2 initiative contemplates a 15% global minimum tax with respect to earnings in each separate country. EU member states are required to adopt the OECD Pillar 2 rules in 2023, and other non-U.S. countries are expected to follow suit. Under these rules, Citi will be required to pay a "top-up" tax to the extent that Citi's effective tax rate in any given country is below 15%. The U.S. is not expected to pass Pillar 2 legislation in the near term, but the top-up tax can be collected by other countries. While many aspects of the application of the rules remain uncertain, Citi does not expect a material effect to its earnings.

In addition, Citi is subject to litigation or examinations with U.S. and non-U.S. tax authorities regarding non-income-based tax matters. While Citi has appropriately reserved for such matters where there is a probable loss, and has disclosed, as reasonably possible, matters that are more-likely-than-not, the outcome from the matters may be different than Citi's expectations. Citi's interpretations or application of the tax laws, including with respect to withholding, stamp, service and other non-income taxes, could differ from that of the relevant governmental taxing authority, which could result in the requirement to pay additional taxes, penalties or interest, which could be material.

A Deterioration in or Failure to Maintain Citi's Co-Branding or Private Label Credit Card Relationships Could Have a Negative Impact on Citi.

Citi has co-branding and private label relationships through its Branded cards and Retail services credit card businesses with various retailers and merchants, whereby in the ordinary course of business Citi issues credit cards to customers of the retailers or merchants. The five largest relationships across both businesses in U.S. Personal Banking constituted an aggregate of approximately 10% of Citi's revenues in 2022. Citi's co-branding and private label agreements often provide for shared economics between the parties and generally have a fixed term.

Competition among card issuers, including Citi, for these relationships is significant, and Citi may not be able to maintain such relationships on existing terms or at all. Citi's co-branding and private label relationships could also be negatively impacted by, among other things, the general economic environment, including the impacts of significantly elevated levels of inflation, higher interest rates, global supply shocks and lower economic growth rates, as well as an increasing risk of recession; changes in consumer sentiment, spending patterns and credit card usage behaviors; a decline in sales and revenues, partner store closures, any reduction in air and business travel, or other operational difficulties of the retailer or merchant; early termination due to a contractual breach or exercise of other early termination right; or other factors, including bankruptcies, liquidations, restructurings, consolidations or other similar events, whether due to the challenging macroeconomic environment or otherwise.

These events, particularly early termination and bankruptcies or liquidations, could negatively impact the results of operations or financial condition of Branded cards, Retail services or Citi as a whole, including as a result of loss of revenues, increased expenses, higher cost of credit, impairment of purchased credit card relationships and contract-related intangibles or other losses.

Citi's Inability in Its Resolution Plan Submissions to Address Any Shortcomings or Deficiencies or Guidance Provided Could Subject Citi to More Stringent Capital, Leverage or Liquidity Requirements, or Restrictions on Its Growth, Activities or Operations, and Could Eventually Require Citi to Divest Assets or Operations.

Title I of the Dodd-Frank Act requires Citi to prepare and submit a plan to the FRB and the FDIC for the orderly resolution of Citigroup (the bank holding company) and its significant legal entities under the U.S. Bankruptcy Code in the event of future material financial distress or failure. On November 22, 2022, the FRB and FDIC issued feedback on the resolution plans filed on July 1, 2021 by the eight U.S. GSIBs, including Citi. The FRB and FDIC identified one shortcoming, but no deficiencies, in Citi's 2021 resolution plan. The shortcoming related to data integrity and data quality management issues, specifically, weaknesses in Citi's processes and practices for producing certain data that could materially impact its resolution capabilities. If a shortcoming is not satisfactorily explained or addressed before, or in, the submission of the next resolution plan, the shortcoming may be found to be a deficiency in the next resolution plan.

Under Title I, if the FRB and the FDIC jointly determine that Citi's resolution plan is not "credible" (which, although not defined, is generally believed to mean the regulators do not believe the plan is feasible or would otherwise allow Citi to be resolved in a way that protects systemically important functions without severe systemic disruption), or would not facilitate an orderly resolution of Citi under the U.S. Bankruptcy Code, and Citi fails to resubmit a resolution plan that remedies any identified deficiencies, Citi could be subjected to more stringent capital, leverage or liquidity requirements, or restrictions on its growth, activities or operations. If within two years from the imposition of any such requirements or restrictions Citi has still not remediated any identified deficiencies, then Citi could eventually be required to divest certain assets or operations. Any such restrictions or actions would negatively impact Citi's reputation, market and investor perception, operations and strategy.

Citi's Performance and Its Ability to Effectively Execute Its Transformation and Other Strategic Initiatives Could Be Negatively Impacted if It Is Not Able to Compete for, Retain and Motivate Highly Qualified Colleagues.

Recent employment conditions and inflationary pressures have made the competition to hire and retain qualified employees significantly more challenging and costly. Citi's performance and the performance of its individual businesses largely depend on the talents and efforts of its diverse and highly qualified colleagues. Specifically, Citi's continued ability to compete in each of its lines of business, to manage its businesses effectively and to execute its transformation and other strategic initiatives, including, for example, hiring front office colleagues to grow businesses or hiring colleagues to support transformation of its risk, controls, data and finance infrastructure and compliance, depends on its ability to attract new colleagues and to retain and motivate its existing colleagues. If Citi is unable to continue to attract, retain and motivate the most highly qualified colleagues, Citi's performance, including its competitive position, the execution of its transformation and other strategic initiatives and its results of operations could be negatively impacted.

Citi's ability to attract, retain and motivate colleagues depends on numerous factors, some of which are outside of its control. For example, the competition for talent recently has been particularly intense, and attrition rates have risen due to factors such as low unemployment, a strong job market with a large number of open positions, and changes in worker's expectations, concerns and preferences, in part due to the pandemic, including an increased demand for remote work options and other job flexibility. Also, the banking industry generally is subject to more comprehensive regulation of employee compensation than other industries, including deferral and clawback requirements for incentive compensation, which can make it unusually challenging for Citi to compete in labor markets against businesses, including for example technology companies, that are not subject to such regulation. Other factors that could impact its ability to attract, retain and motivate colleagues include, among other things, Citi's presence in a particular market or region, the professional and development opportunities and employee benefits it offers, its reputation and its diversity.

Citi Faces Increased Competitive Challenges, Including from Financial Services and Other Companies and Emerging Technologies.

Citi operates in an increasingly evolving and competitive business environment, which includes both financial and non-financial services firms, such as traditional banks, online banks, financial technology companies and others. These companies compete on the basis of, among other factors, size, reach, quality and type of products and services offered, price, technology and reputation. Certain competitors may be subject to different and, in some cases, less stringent legal and regulatory requirements, whether due to size, jurisdiction, entity type or other factors, placing Citi at a competitive disadvantage.

For example, Citi competes with other financial services companies in the U.S. and globally that continue to develop and introduce new products and services. In recent years, non-traditional financial services firms, such as financial technology companies, have begun to offer services traditionally provided by financial institutions, such as Citi, and have sought bank charters to provide these services. These firms attempt to use technology and mobile platforms to enhance the ability of companies and individuals to borrow, save and invest money. Emerging technologies have the potential to intensify competition and accelerate disruption in the financial services industry. For example, despite recent turmoil in the digital asset market, there is sustained interest from clients and investors in digital assets. Financial services firms and other market participants have begun to offer services related to those assets. However, Citi may not be able to provide the same or similar services for legal or regulatory reasons and due to increased compliance and other risks. In addition, changes in the payments space (e.g., instant and 24x7 payments) are accelerating, and, as a result, certain of Citi's products and services could become less competitive.

Increased competition and emerging technologies have required and could require Citi to change or adapt its products and services to attract and retain customers or clients or to compete more effectively with competitors, including new market entrants. Simultaneously, as Citi develops new products and services leveraging emerging technologies, new risks may emerge that, if not designed and governed adequately, may result in control gaps and in Citi operating outside of its risk appetite. For example, instant and 24x7 payments products could be accompanied by challenges to forecasting and managing liquidity, as well as increased operational and compliance risks.

Moreover, Citi relies on third parties to support certain of its product and service offerings, which may put Citi at a disadvantage to competitors who may directly offer a broader array of products and services. Also, Citi's businesses, results of operations and reputation may suffer if any third party is unable to provide adequate support for such product and service offerings, whether due to operational incidents or otherwise (for additional information, see the operational processes and systems, cybersecurity and emerging markets risk factors below).

To the extent that Citi is not able to compete effectively with financial technology companies and other firms, Citi could be placed at a competitive disadvantage, which could result in loss of customers and market share, and its businesses, results of operations and financial condition could suffer. For additional information on Citi's competitors, see the co-brand and private label cards and qualified colleagues risk factors above.

OPERATIONAL RISKS

A Failure or Disruption of Citi's Operational Processes or Systems Could Negatively Impact Its Reputation, Customers, Clients, Businesses or Results of Operations and Financial Condition.

Citi's global operations rely heavily on its technology, including the accurate, timely and secure processing, management, storage and transmission of confidential transactions, data and other information as well as the monitoring of a substantial amount of data and complex transactions in real time. Citi obtains and stores an extensive amount of personal and client-specific information for its consumer and institutional customers and clients, and must accurately record and reflect their extensive account transactions. Citi's operations must also comply with complex and evolving laws and regulations in the countries in which it operates. With the evolving proliferation of new technologies and the increasing use of the internet, mobile devices and cloud technologies to conduct financial transactions and customers' and clients' increasing use of online banking and trading systems and other platforms, large global financial institutions such as Citi have been, and will continue to be, subject to an ever-increasing risk of operational loss, failure or disruption, including as a result of cyber or information security incidents (for additional information, see the cybersecurity risk factor below).

Although Citi has continued to upgrade its technology, including systems to automate processes and enhance efficiencies, operational incidents are unpredictable and can arise from numerous sources, not all of which are fully within Citi's control. These include, among others, human error, such as manual transaction processing errors, which can be exacerbated by staffing challenges and processing backlogs; fraud or malice on the part of employees or third parties; operational or execution failures or deficiencies by third parties; insufficient (or limited) straight-through processing between legacy systems and any failure to design and effectively operate controls that mitigate operational risks associated with those legacy systems leading to potential risk of errors and operating losses; accidental system or technological failure; electrical or telecommunication outages; failures of or cyber incidents involving computer servers or infrastructure; or other similar losses or damage to Citi's property or assets (see also the climate change risk factor above).

For example, Citi has experienced and could experience further losses associated with manual transaction processing errors, including erroneous payments to lenders or manual errors by Citi traders that cause system and market disruptions and losses for Citi and its clients. Irrespective of the sophistication of the technology utilized by Citi, there will always be some room for human error. In view of the large transactions in which Citi engages, such errors could result in significant losses. While Citi has change management processes in place to appropriately upgrade its operational processes and systems to ensure that any changes introduced do not adversely impact security and operational continuity, such change management can fail or be ineffective. Operational incidents can also arise as a result of failures by third parties with which Citi does business, such as failures by internet, mobile technology and cloud service providers or other vendors to adequately follow procedures or processes, safeguard their systems or prevent system disruptions or cyberattacks.

Incidents that impact information security and/or technology operations may cause disruptions and/or malfunctions within Citi's businesses (e.g., the temporary loss of availability of Citi's online banking system or mobile banking platform), as well as the operations of its clients, customers or other third parties. In addition, operational incidents could involve the failure or ineffectiveness of internal processes or controls. Given Citi's global footprint and the high volume of transactions processed by Citi, certain failures, errors or actions may be repeated or compounded before they are discovered and rectified, which would further increase the consequences and costs. Operational incidents could result in financial losses as well as misappropriation, corruption or loss of confidential and other information or assets, which could significantly negatively impact Citi's reputation, customers, clients, businesses or results of operations and financial condition. Cyber-related and other operational incidents can also result in legal and regulatory actions or proceedings, fines and other costs (see the legal and regulatory proceedings risk factor below).

Citi's and Third Parties' Computer Systems and Networks Will Continue to Be Susceptible to an Increasing Risk of Continually Evolving, Sophisticated Cybersecurity Incidents That Could Result in the Theft, Loss, Misuse or Disclosure of Confidential Client or Customer Information, Damage to Citi's Reputation, Additional Costs to Citi, Regulatory Penalties, Legal Exposure and Financial Losses.

Citi's computer systems, software and networks are subject to ongoing cyber incidents, such as unauthorized access, loss or destruction of data (including confidential client information), account takeovers, disruptions of service, phishing, malware, ransomware, computer viruses or other malicious code, cyberattacks and other similar events. These threats can arise from external parties, including cyber criminals, cyber terrorists, hacktivists (individuals or groups using cyberattacks to promote a political or social agenda) and nation-state actors, as well as insiders who knowingly or unknowingly engage in or enable malicious cyber activities.

The increasing use of mobile and other digital banking platforms and services, cloud technologies and connectivity solutions to facilitate remote working for Citi's employees all increase Citi's exposure to cybersecurity risks. Citi's wind-down of its businesses in Russia could also increase its susceptibility to cyberattacks.

Third parties with which Citi does business, as well as retailers and other third parties with which Citi's customers do business, may also be sources of cybersecurity risks, particularly where activities of customers are beyond Citi's security and control systems. For example, Citi outsources certain functions, such as processing customer credit card transactions, uploading content on customer-facing websites and developing software for new products and services. These relationships allow for the storage and processing of customer information by third-party hosting of, or access to, Citi websites, which could lead to compromise or the potential to introduce vulnerable or malicious code, resulting in security breaches impacting Citi customers. Furthermore, because financial institutions are becoming increasingly interconnected with central agents, exchanges and clearing houses, including as a result of derivatives reforms over the last few years, Citi has increased exposure to cyberattacks through third parties. While many of Citi's agreements with third parties include indemnification provisions, Citi may not be able to recover sufficiently, or at all, under these provisions to adequately offset any losses Citi may incur from third-party cyber incidents.

Citi and some of its third-party partners have been subject to attempted and sometimes successful cyberattacks from external sources over the last several years, including (i) denial of service attacks, which attempt to interrupt service to clients and customers; (ii) hacking and malicious software installations intended to gain unauthorized access to information systems or to disrupt those systems; (iii) data breaches due to unauthorized access to customer account data; and (iv) malicious software attacks on client systems, in attempts to gain unauthorized access to Citi systems or client data under the guise of normal client transactions. While Citi's monitoring and protection services were able to detect and respond to the incidents targeting its systems before they became significant, they still resulted in limited losses in some instances as well as increases in expenditures to monitor against the threat of similar future cyber incidents. There can be no assurance that such cyber incidents will not occur again, and they could occur more frequently, via novel tactics and on a more significant scale.

Further, although Citi devotes significant resources to implement, maintain, monitor and regularly upgrade its systems and networks with measures such as intrusion detection and prevention and firewalls to safeguard critical business applications, there is no guarantee that these measures or any other measures can provide absolute security. Because the techniques used to initiate cyberattacks change frequently or, in some cases, are not recognized until launched or even later, Citi may be unable to implement effective preventive measures or otherwise proactively address these methods. In addition, given the evolving nature of cyber threat actors and the frequency and sophistication of the cyber activities they carry out, the determination of the severity and potential impact of a cyber incident may not become apparent for a substantial period of time following discovery of the incident. Also, while Citi engages in certain actions to reduce the exposure resulting from outsourcing, such as performing security control assessments of third-party vendors and limiting third-party access to the least privileged level necessary to perform job functions, these actions cannot prevent all third-party-related cyberattacks or data breaches.

Cyber incidents can result in the disclosure of personal, confidential or proprietary customer, client or employee information, damage to Citi's reputation with its clients and the market, customer dissatisfaction and additional costs to Citi, including expenses such as repairing systems, replacing customer payment cards, credit monitoring or adding new personnel or protection technologies. Cyber incidents can also result in regulatory penalties, loss of revenues, exposure to litigation and other financial losses, including loss of funds, to both Citi and its clients and customers and disruption to Citi's operational systems (for additional information on the potential impact of operational disruptions, see the operational processes and systems risk factor above). Moreover, the increasing risk of cyber incidents has resulted in increased legislative and regulatory scrutiny of firms' cybersecurity protection services and calls for additional laws and regulations to further enhance protection of consumers' personal data.

While Citi maintains insurance coverage that may, subject to policy terms and conditions including significant self-insured deductibles, cover certain aspects of cyber risks, such insurance coverage may be insufficient to cover all losses and may not take into account reputational harm, the costs of which are impossible to quantify.

For additional information about Citi's management of cybersecurity risk, see "Managing Global Risk—Operational Risk—Cybersecurity Risk" below.

Changes or Errors in Accounting Assumptions, Judgments or Estimates, or the Application of Certain Accounting Principles, Could Result in Significant Losses or Other Adverse Impacts.

U.S. GAAP requires Citi to use certain assumptions, judgments and estimates in preparing its financial statements, including, among other items, the estimate of the ACL; reserves related to litigation, regulatory and tax matters; valuation of DTAs; the fair values of certain assets and liabilities; and the assessment of goodwill and other assets for impairment. These assumptions, judgments and estimates are inherently limited because they involve techniques, including the use of historical data in many circumstances, that cannot anticipate every economic and financial outcome in the markets in which Citi operates, nor can they anticipate the specifics and timing of such outcomes. For example, many models used by Citi include assumptions about correlation or lack thereof among prices of various asset classes or other market indicators that may not hold in times of market stress, limited liquidity or other unforeseen circumstances. If Citi's assumptions, judgments or estimates underlying its financial statements are incorrect or differ from actual or subsequent events, Citi could experience unexpected losses or other adverse impacts, some of which could be significant. Citi could also experience declines in its stock price, be subject to legal and regulatory proceedings and incur fines and other losses.

For example, the CECL methodology requires that Citi provide reserves for a current estimate of lifetime expected credit losses for its loan portfolios and other financial assets, as applicable, at the time those assets are originated or acquired. This estimate is adjusted each period for changes in expected lifetime credit losses. Citi's ACL estimate depends upon its CECL models and assumptions; forecasted macroeconomic conditions, including, among other things, the U.S. unemployment rate and U.S. inflation-adjusted gross domestic product (real GDP); and the credit indicators, composition and other characteristics of Citi's loan portfolios and other applicable financial assets. These model assumptions and forecasted macroeconomic conditions will change over time, resulting in variability in Citi's ACL, and, thus, impact its results of operations and financial condition, as well as regulatory capital due to the CECL phase-in (for additional information on the CECL phase-in, see the capital return risk factor above).

Moreover, Citi has incurred losses related to its foreign operations that are reported in the CTA components of *Accumulated other comprehensive income (loss) (AOCI)*. In accordance with U.S. GAAP, a sale, substantial liquidation or other deconsolidation event of any foreign operations, such as those related to Citi's remaining divestitures or legacy businesses, would result in reclassification of any foreign CTA component of *AOCI* related to that foreign operation, including related hedges and taxes, into Citi's earnings. For example, in the second quarter of 2022, Citi incurred a CTA loss (net of hedges) in *AOCI* released to earnings of approximately $400 million ($345 million after-tax) related to the substantial liquidation of a legacy U.K. consumer operation.

Changes to Financial Accounting and Reporting Standards or Interpretations Could Have a Material Impact on How Citi Records and Reports Its Financial Condition and Results of Operations.

Periodically, the Financial Accounting Standards Board (FASB) issues financial accounting and reporting standards that govern key aspects of Citi's financial statements or interpretations thereof when those standards become effective, including those areas where Citi is required to make assumptions or estimates. Changes to financial accounting or reporting standards or interpretations, whether promulgated or required by the FASB, the SEC, banking regulators or others, could present operational challenges and could also require Citi to change certain of the assumptions or estimates it previously used in preparing its financial statements, which could negatively impact how it records and reports its financial condition and results of operations generally and/or with respect to particular businesses.

If Citi's Risk Management Processes, Strategies or Models Are Deficient or Ineffective, Citi May Incur Significant Losses and Its Regulatory Capital and Capital Ratios Could Be Negatively Impacted.

Citi utilizes a broad and diversified set of risk management and mitigation processes and strategies, including the use of models in enacting processes and strategies as well as in analyzing and monitoring the various risks Citi assumes in conducting its activities. For example, Citi uses models as part of its comprehensive stress testing initiatives across the Company. Citi also relies on data to aggregate, assess and manage various risk exposures. Management of these risks is made more challenging within a global financial institution such as Citi, particularly given the complex, diverse and rapidly changing financial markets and conditions in which Citi operates as well as that losses can occur unintentionally from untimely, inaccurate or incomplete processes and data. As discussed below, in October 2020, Citigroup and Citibank entered into consent orders with the FRB and OCC that require Citigroup and Citibank to make improvements in various aspects of enterprise-wide risk management, compliance, data quality management and governance and internal controls (see the legal and regulatory proceedings risk factor below).

Citi's risk management processes, strategies and models are inherently limited because they involve techniques, including the use of historical data in many circumstances, assumptions and judgments that cannot anticipate every economic and financial outcome in the markets in which Citi operates, nor can they anticipate the specifics and timing of such outcomes. For example, many models used by Citi include assumptions about correlation or lack thereof among prices of various asset classes or other market indicators that may not necessarily hold in times of market stress, limited liquidity or other unforeseen circumstances. Citi could incur significant losses, and its regulatory capital and capital ratios could be negatively impacted, if Citi's risk management processes, including its ability to manage and aggregate data in a timely and accurate manner, strategies or models are deficient or ineffective. Such deficiencies or ineffectiveness could also result in inaccurate financial, regulatory or risk reporting.

Moreover, Citi's Basel III regulatory capital models, including its credit, market and operational risk models, currently remain subject to ongoing regulatory review and approval, which may result in refinements, modifications or enhancements (required or otherwise) to these models. Citi is required to notify and obtain preapproval from both the OCC and FRB prior to implementing certain risk-weighted asset treatments, as well as certain model changes, resulting in a more challenging environment within which Citi must operate in managing its risk-weighted assets. Modifications or requirements resulting from these ongoing reviews, as well as any future changes or guidance provided by the U.S. banking agencies regarding the regulatory capital framework applicable to Citi, have resulted in, and could continue to result in, significant changes to Citi's risk-weighted assets. These changes can negatively impact Citi's capital ratios and its ability to achieve its regulatory capital requirements.

CREDIT RISKS

Credit Risk and Concentrations of Risk Can Increase the Potential for Citi to Incur Significant Losses.

Citi has credit exposures to consumer, corporate and public sector borrowers and other counterparties in the U.S. and various countries and jurisdictions globally, including end-of-period consumer loans of $368 billion and end-of-period corporate loans of $289 billion at December 31, 2022.

A default by a borrower or other counterparty, or a decline in the credit quality or value of any underlying collateral, exposes Citi to credit risk. Despite Citi's target client strategy, various macroeconomic, geopolitical and other factors, among other things, can increase Citi's credit risk and credit costs, particularly for certain sectors, industries or countries (for additional information, see the co-branding and private label credit card and macroeconomic challenges and uncertainties risk factors above and the emerging markets risk factor below). For example, a weakening of economic conditions can adversely affect borrowers' ability to repay their obligations, as well as result in Citi being unable to liquidate the collateral it holds or forced to liquidate the collateral at prices that do not cover the full amount owed to Citi. Citi is also a member of various central clearing counterparties and could incur financial losses as a result of defaults by other clearing members due to the requirements of clearing members to share losses. Additionally, due to the interconnectedness among financial institutions, concerns about the creditworthiness of or defaults by a financial institution could spread to other financial market participants and result in market-wide losses.

While Citi provides reserves for expected losses for its credit exposures, as applicable, such reserves are subject to judgments and estimates that could be incorrect or differ from actual future events. Under the CECL accounting standard, the ACL reflects expected losses, which has resulted in and could lead to additional volatility in the allowance and the provision for credit losses as forecasts of economic conditions change. For additional information, see the incorrect assumptions or estimates and changes to financial accounting and reporting standards risk factors above.

Concentrations of risk to clients or counterparties engaged in the same or related industries or doing business in a particular geography, especially credit and market risks, can also increase Citi's risk of significant losses. For example, Citi routinely executes a high volume of securities, trading, derivative and foreign exchange transactions with non-U.S. sovereigns and with counterparties in the financial services industry, including banks, insurance companies, investment banks, governments, central banks and other financial institutions. Moreover, Citi has indemnification obligations in connection with various transactions that expose it to concentrations of risk, including credit risk from hedging or reinsurance arrangements related to those obligations. A rapid deterioration of a large borrower or other counterparty or within a sector or country in which Citi has large exposures or indemnifications or unexpected market dislocations could lead to concerns about the creditworthiness of other borrowers or counterparties in related or dependent industries, and such conditions could cause Citi to incur significant losses.

LIQUIDITY RISKS

Citi's Businesses, Results of Operations and Financial Condition Could Be Negatively Impacted if It Does Not Effectively Manage Its Liquidity.

As a large, global financial institution, adequate liquidity and sources of funding are essential to Citi's businesses. Citi's liquidity and sources of funding can be significantly and negatively impacted by factors it cannot control, such as general disruptions in the financial markets, governmental fiscal and monetary policies, regulatory changes or negative investor perceptions of Citi's creditworthiness, unexpected increases in cash or collateral requirements and the consequent inability to monetize available liquidity resources. Citi competes with other banks and financial institutions for both institutional and consumer deposits, which represent Citi's most stable and lowest cost source of long-term funding. The competition for deposits has continued to increase in recent years, including as a result of online banks and digital banking and fixed income alternatives for customer funds. Furthermore, it is expected that the market for deposits will become more competitive in the current higher interest rate environment.

Citi's costs to obtain and access wholesale funding are directly related to changes in interest and currency exchange rates and its credit spreads. For example, during 2022, interest rates in the U.S. increased significantly, thus, affecting Citi's cost of funding. Changes in Citi's credit spreads are driven by both external market factors and factors specific to Citi, such as negative views by investors of the financial services industry or Citi's financial prospects, and can be highly volatile.

Citi's ability to obtain funding may be impaired and its cost of funding could also increase if other market participants are seeking to access the markets at the same time or to a greater extent than expected, or if market appetite for corporate debt securities declines, as is likely to occur in a liquidity stress event or other market crisis. Citi's ability to sell assets may also be impaired if other market participants are seeking to sell similar assets at the same time or a liquid market does not exist for such assets. A sudden drop in market liquidity could also cause a temporary or protracted dislocation of underwriting and capital markets activity. In addition, clearing organizations, central banks, clients and financial institutions with which Citi interacts may exercise the right to require additional collateral during challenging market conditions, which could further impair Citi's liquidity. If Citi fails to effectively manage its liquidity, its businesses, results of operations and financial condition could be negatively impacted.

In addition, as a holding company, Citigroup Inc. relies on interest, dividends, distributions and other payments from its subsidiaries to fund dividends as well as to satisfy its debt and other obligations. Several of Citi's U.S. and non-U.S. subsidiaries are or may be subject to capital adequacy or other liquidity, regulatory or contractual restrictions on their ability to provide such payments, including any local regulatory stress test requirements and inter-affiliate arrangements entered into in connection with Citigroup Inc.'s resolution plan. Citigroup Inc.'s broker-dealer and bank subsidiaries are subject to restrictions on their ability to lend or transact with affiliates, as well as restrictions on their ability to use funds deposited with them in brokerage or bank accounts to fund their businesses. Limitations on the payments that Citigroup Inc. receives from its subsidiaries could also impact its liquidity. A bank holding company is required by law to act as a source of financial and managerial strength for its subsidiary banks. As a result, the FRB may require Citigroup Inc. to commit resources to its subsidiary banks even if doing so is not otherwise in the interests of Citigroup Inc. or its shareholders or creditors, reducing the amount of funds available to meet its obligations.

Credit Rating Agencies Continuously Review the Credit Ratings of Citi and Certain of Its Subsidiaries, and a Ratings Downgrade Could Adversely Impact Citi's Funding and Liquidity.

The credit rating agencies, such as Fitch Ratings, Moody's Investors Services and S&P Global Ratings, continuously evaluate Citi and certain of its subsidiaries. Their ratings of Citi and its rated subsidiaries' long-term debt and short-term obligations are based on several factors, including the financial strength of Citi and such subsidiaries, as well as factors that are not entirely within the control of Citi and its subsidiaries, such as the agencies' proprietary rating methodologies and assumptions, and conditions affecting the financial services industry and markets generally.

Citi and its subsidiaries may not be able to maintain their current respective ratings and outlooks. Rating downgrades could negatively impact Citi and its rated subsidiaries' ability to access the capital markets and other sources of funds as well as the costs of those funds. A ratings downgrade could also have a negative impact on Citi and its rated subsidiaries' ability to obtain funding and liquidity due to reduced funding capacity and the impact from derivative triggers, which could require Citi and its rated subsidiaries to meet cash obligations and collateral requirements. In addition, a ratings downgrade could have a negative impact on other funding sources such as secured financing and other margined transactions for which there may be no explicit triggers, and on contractual provisions and other credit requirements of Citi's counterparties and clients that may contain minimum ratings thresholds in order for Citi to hold third-party funds.

Furthermore, a credit ratings downgrade could have impacts that may not be currently known to Citi or are not possible to quantify. Some of Citi's counterparties and clients could have ratings limitations on their permissible counterparties, of which Citi may or may not be aware. Certain of Citi's corporate customers and trading counterparties, among other clients, could re-evaluate their business relationships with Citi and limit the trading of certain contracts or market instruments with Citi in response to ratings downgrades. Changes in customer and counterparty behavior could impact not only Citi's funding and liquidity but also the results of operations of certain Citi businesses.

COMPLIANCE RISKS

Ongoing Interpretation and Implementation of Regulatory and Legislative Requirements and Changes and Heightened Regulatory Scrutiny and Expectations in the U.S. and Globally Have Increased Citi's Compliance, Regulatory and Other Risks and Costs.

Citi is continually required to interpret and implement extensive and frequently changing regulatory and legislative requirements in the U.S. and other jurisdictions in which it does business, which may overlap or conflict across jurisdictions, resulting in substantial compliance, regulatory and other risks and costs. In addition, there are heightened regulatory scrutiny and expectations in the U.S. and globally for large financial institutions, as well as their employees and agents, with respect to governance, infrastructure, data, climate and risk management practices and controls. These requirements and expectations also include, among other things, those related to customer and client protection, market practices, anti-money laundering and increasingly complex sanctions and disclosure regimes. A failure to comply with these requirements and expectations, even if inadvertent, or resolve any identified deficiencies, could result in increased regulatory oversight and restrictions, enforcement proceedings, penalties and fines (for additional information on such regulatory consequences, see the legal and regulatory proceedings risk factor below).

Over the past several years, Citi has been required to implement a significant number of regulatory and legislative changes, including new regulatory or legislative requirements or regimes, across its businesses and functions, and these changes continue. The changes themselves may be complex and subject to interpretation, and will require continued investments in Citi's global operations and technology solutions. In some cases, Citi's implementation of a regulatory or legislative requirement is occurring simultaneously with changing or conflicting regulatory guidance, legal challenges or legislative action to modify or repeal existing rules or enact new rules. Examples of regulatory or legislative changes that have resulted in increased compliance risks and costs include (i) various laws relating to the limitation of cross-border data movement and/or collection and use of customer information, including data localization and protection and privacy laws, which also can conflict with or increase compliance complexity with respect to other laws, including anti-money laundering laws; and (ii) the U.S. banking agencies' regulatory capital rules and requirements, which have continued to evolve (for additional information, see the capital return risk factor above). In addition, certain U.S. regulatory agencies and non-U.S. authorities have prioritized issues of social, economic and racial justice, and are in the process of considering ways in which these issues can be mitigated, including through rulemaking, supervision and other means, even while Congress is signaling, and certain U.S. state governments are pursuing potentially conflicting anti-ESG priorities.

Citi Is Subject to Extensive Legal and Regulatory Proceedings, Examinations, Investigations, Consent Orders and Related Compliance Efforts and Other Inquiries That Could Result in Significant Monetary Penalties, Supervisory or Enforcement Orders, Business Restrictions, Limitations on Dividends, Changes to Directors and/or Officers and Collateral Consequences Arising from Such Outcomes.

At any given time, Citi is a party to a significant number of legal and regulatory proceedings and is subject to numerous governmental and regulatory examinations. Additionally, Citi remains subject to governmental and regulatory investigations, consent orders and related compliance efforts, and other inquiries. Citi could also be subject to enforcement proceedings not only because of violations of laws and regulations, but also due to failures, as determined by its regulators, to have adequate policies and procedures, or to remedy deficiencies on a timely basis.

As previously disclosed, the October 2020 FRB and OCC consent orders require Citigroup and Citibank to implement targeted action plans and submit quarterly progress reports detailing the results and status of improvements relating principally to various aspects of enterprise-wide risk management, compliance, data quality management and governance and internal controls. These improvements will result in continued significant investments by Citi during 2023 and beyond, as an essential part of Citi's broader transformation efforts to enhance its risk, controls, data and finance infrastructure and compliance.

Although there are no restrictions on Citi's ability to serve its clients, the OCC consent order requires Citibank to obtain prior approval of any significant new acquisition, including any portfolio or business acquisition, excluding ordinary course transactions. Moreover, the OCC consent order provides that the OCC has the right to assess future civil money penalties or take other supervisory and/or enforcement actions. Such actions by the OCC could include imposing business restrictions, including possible limitations on the declaration or payment of dividends and changes in directors and/or senior executive officers. More generally, the OCC and/or the FRB could take additional enforcement or other actions if the regulatory agency believes that Citi has not met regulatory expectations regarding compliance with the consent orders.

The global judicial, regulatory and political environment has generally been challenging for large financial institutions, and financial institutions have been subject to continued regulatory scrutiny. The complexity of the federal and state regulatory and enforcement regimes in the U.S., coupled with the global scope of Citi's operations, also means that a single event or issue may give rise to a large number of overlapping investigations and regulatory proceedings, either by multiple federal and state agencies and authorities in the U.S. or by multiple regulators and other governmental entities in foreign jurisdictions, as well as multiple civil litigation claims in multiple jurisdictions. Violations of law by other financial institutions may also result in regulatory scrutiny of Citi. Responding to regulatory inquiries and proceedings can be time consuming and costly.

U.S. and non-U.S. regulators have been increasingly focused on the culture of financial services firms, including Citi, as well as "conduct risk," a term used to describe the risks associated with behavior by employees and agents, including third parties, that could harm clients, customers, employees or the integrity of the markets, such as improperly creating, selling, marketing or managing products and services or improper incentive compensation programs with respect thereto, failures to safeguard a party's personal information, or failures to identify and manage conflicts of interest.

In addition to the greater focus on conduct risk, the general heightened scrutiny and expectations from regulators could lead to investigations and other inquiries, as well as remediation requirements, more regulatory or other enforcement proceedings, civil litigation and higher compliance and other risks and costs. Further, while Citi takes numerous steps to prevent and detect conduct by employees and agents that could potentially harm clients, customers, employees or the integrity of the markets, such behavior may not always be deterred or prevented. In addition to regulatory restrictions or structural changes that could result from perceived deficiencies in Citi's culture, such focus could also lead to additional regulatory proceedings. Moreover, the severity of the remedies sought in legal and regulatory proceedings to which Citi is subject has remained elevated. U.S. and certain non-U.S. governmental entities have increasingly brought criminal actions against, or have sought criminal convictions from, financial institutions and individual employees, and criminal prosecutors in the U.S. have increasingly sought and obtained criminal guilty pleas or deferred prosecution agreements against financial entities and individuals and other criminal sanctions for those institutions and individuals. These types of actions by U.S. and international governmental entities may, in the future, have significant collateral consequences for a financial institution, including loss of customers and business, and the inability to offer certain products or services and/or operate certain businesses. Citi may be required to accept or be subject to similar types of criminal remedies, consent orders, sanctions, substantial fines and penalties, remediation and other financial costs or other requirements in the future, including for matters or practices not yet known to Citi, any of which could materially and negatively affect Citi's businesses, business practices, financial condition or results of operations, require material changes in Citi's operations or cause Citi reputational harm.

Additionally, many large claims—both private civil and regulatory—asserted against Citi are highly complex, slow to develop and may involve novel or untested legal theories. The outcome of such proceedings is difficult to predict or estimate until late in the proceedings. Although Citi establishes accruals for its legal and regulatory matters according to accounting requirements, Citi's estimates of, and changes to, these accruals involve significant judgment and may be subject to significant uncertainty, and the amount of loss ultimately incurred in relation to those matters may be substantially higher than the amounts accrued (see the incorrect assumptions or estimates risk factor above). In addition, certain settlements are subject to court approval and may not be approved.

OTHER RISKS

Citi's Emerging Markets Presence Subjects It to Various Risks as well as Increased Compliance and Regulatory Risks and Costs.

During 2022, emerging markets revenues accounted for approximately 37% of Citi's total revenues (Citi generally defines emerging markets as countries in Latin America, Asia (other than Japan, Australia and New Zealand), and central and Eastern Europe, the Middle East and Africa in EMEA). Citi's presence in the emerging markets subjects it to various risks, such as limitations or unavailability of hedges on foreign investments; foreign currency volatility, including devaluations and continued strength in the U.S. dollar; sustained increases in interest rates; sovereign debt volatility; election outcomes, regulatory changes and political events; foreign exchange controls, including inability to access indirect foreign exchange mechanisms; macroeconomic and geopolitical challenges and uncertainties and volatility, including with respect to Russia and China (see the macroeconomic and geopolitical risk factor above); limitations on foreign investment; sociopolitical instability (including from hyperinflation); fraud; nationalization or loss of licenses; restrictions arising from retaliatory Russian laws and regulations on the conduct of its business; sanctions or asset freezes; potential criminal charges; closure of branches or subsidiaries; and confiscation of assets, and these risks can be exacerbated in the event of a deterioration in relationships between the U.S. and an emerging market country.

For example, Citi operates in several countries that have, or have had in the past, strict capital controls, currency controls and/or sanctions, such as Argentina and Russia, that limit its ability to convert local currency into U.S. dollars and/or transfer funds outside of those countries. For instance, due to currency controls in Argentina, Citi faces a risk of devaluation on its unhedged Argentine peso-denominated assets, which continue to increase. Moreover, if the economic situation in a country in which Citi operates were to deteriorate below a certain level, U.S. regulators through the Interagency Country Exposure Review Committee (ICERC) may impose mandatory loan loss or other reserve requirements on Citi, which would increase its credit costs and decrease its earnings.

In addition, political turmoil and instability and geopolitical tensions and conflicts (such as the Russia–Ukraine war) have occurred in various regions and emerging market countries across the globe which have required, and may continue to require, management time and attention and other resources, such as monitoring the impact of sanctions on certain emerging market economies as well as impacting Citi's businesses, results of operations and financial conditions in affected countries.

MANAGING GLOBAL RISK

Overview

For Citi, effective risk management is of primary importance to its overall operations. Accordingly, Citi has established an Enterprise Risk Management (ERM) Framework to ensure that all of Citi's risks are managed appropriately and consistently across the Company and at an aggregate, enterprise-wide level. Citi's culture drives a strong risk and control environment, and is at the heart of the ERM Framework, underpinning the way Citi conducts business. The activities that Citi engages in, and the risks those activities generate, must be consistent with Citi's Mission and Value Proposition and the key Leadership Principles that support it, as well as Citi's risk appetite. As discussed above, Citi also continues its efforts to comply with the FRB and OCC consent orders, relating principally to various aspects of risk management, compliance, data quality management and governance, and internal controls (see "Risk Factors—Compliance Risks" above).

Under Citi's Mission and Value Proposition, which was developed by its senior leadership and distributed throughout the Company, Citi strives to serve its clients as a trusted partner by responsibly providing financial services that enable growth and economic progress while earning and maintaining the public's trust by constantly adhering to the highest ethical standards. As such, Citi asks all colleagues to ensure that their decisions pass three tests: they are in Citi's clients' best interests, create economic value and are always systemically responsible.

Citi has designed Leadership Principles that represent the qualities, behaviors and expectations all employees must exhibit to deliver on Citi's mission of enabling growth and economic progress. The Leadership Principles inform Citi's ERM Framework and will contribute to creating a culture that drives client, control and operational excellence. Citi colleagues share a common responsibility to uphold these leadership principles and hold themselves to the highest standards of ethics and professional behavior in dealing with Citi's clients, business colleagues, shareholders, communities and each other.

Citi's ERM Framework details the principles used to support effective enterprise-wide risk management across the end-to-end risk management lifecycle. The ERM Framework covers the risk management roles and responsibilities of the Citigroup Board of Directors (the Board), Citi's Executive Management Team and employees across the lines of defense. The underlying pillars of the framework encompass:

- *Culture*— the core principles and behaviors that underpin a strong culture of risk awareness, in line with Citi's Mission and Value Proposition, and Leadership Principles;
- *Governance*— the committee structure and reporting arrangements that support the appropriate oversight of risk management activities at the Board and Executive Management Team levels;
- *Risk Management*— the end-to-end risk management cycle including the identification, measurement, monitoring, controlling and reporting of all risks including top, material, growing, idiosyncratic and emerging risks, and aggregated to an enterprise-wide level; and
- *Enterprise Programs*— the key risk management programs performed across the risk management lifecycle for all risk categories; these programs also outline the specific roles played by each of the lines of defense in these processes.

Each of these pillars is underpinned by supporting capabilities, which are the infrastructure, people, technology and data, and modelling and analytical capabilities that are in place to enable the execution of the ERM Framework.

Citi's approach to risk management requires that its risk-taking be consistent with its risk appetite. The risk appetite is the aggregate level and types of risk Citi is willing to take or tolerate in order to meet its strategic objectives and business plan. Citi's risk appetite framework is the overall firm-wide approach, including policies, processes, controls and systems through which the risk appetite is established, communicated and monitored. In addition, underlying risk limits and thresholds are designed to control concentrations and operationalize risk appetite.

Citi's risks are generally categorized and summarized as follows:

- *Credit risk* is the risk of loss resulting from the decline in credit quality (or downgrade risk) or failure of a borrower, counterparty, third party or issuer to honor its financial or contractual obligations.

- *Liquidity risk* is the risk that Citi will not be able to efficiently meet both expected and unexpected current and future cash flow and collateral needs without adversely affecting either daily operations or financial conditions of Citi.
- *Market risk (Trading and Non-Trading)*: Market risk of trading portfolios is the risk of loss arising from changes in the value of Citi's assets and liabilities resulting from changes in market variables, such as interest rates, exchange rates, equity and commodity prices or credit spreads. Market risk of non-trading portfolios is the risk to current or projected financial condition and resilience arising from movements in interest rates resulting from repricing risk, basis risk, yield curve risk and options risk.
- *Operational risk* is the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events. It includes legal risk, which is the risk of loss (including litigation costs, settlements and regulatory fines) resulting from Citi's failure to comply with laws, regulations, prudent ethical standards or contractual obligations in any aspect of Citi's business, but excludes strategic and reputation risks (see below).
- *Compliance risk* is the risk to current or projected financial condition and resilience arising from violations of laws, rules or regulations, or from non-conformance with prescribed practices, internal policies and procedures or ethical standards.
- *Reputation risk* is the risk to current or projected financial conditions and resilience from negative opinion held by stakeholders.
- *Strategic risk* is the risk of a sustained impact (not episodic impact) to Citi's core strategic objectives as measured by impacts on anticipated earnings, market capitalization or capital, arising from the external factors affecting the Company's operating environment; as well as the risks associated with defining the strategy and executing the strategy, which are identified, measured and managed as part of the Strategic Risk Framework at the Enterprise Level.

Citi uses a lines of defense model as a key component of its ERM Framework to manage its risks. As discussed below, the lines of defense model brings together risk-taking, risk oversight and risk assurance under one umbrella and provides an avenue for risk accountability of first line of defense, a construct for effective challenge by the second line of defense (Independent Risk Management and Independent Compliance Risk Management), and empowers independent risk assurance by the third line of defense (Internal Audit). In addition, the lines of defense model includes organizational units tasked with supporting a strong control environment ("enterprise support functions"). The first, second and third lines of defense, along with enterprise support functions, have distinct roles and responsibilities and are empowered to perform relevant risk management processes and responsibilities in order to manage Citi's risks in a consistent and effective manner.

CREDIT RISK

Overview

Credit risk is the risk of loss resulting from the decline in credit quality of a client, customer or counterparty (or downgrade risk) or the failure of a borrower, counterparty, third party or issuer to honor its financial or contractual obligations. Credit risk is one of the most significant risks Citi faces as an institution. For additional information, see "Risk Factors—Credit Risk" above. Credit risk arises in many of Citigroup's business activities, including:

- consumer, commercial and corporate lending;
- capital markets derivative transactions;
- structured finance; and
- securities financing transactions (repurchase and reverse repurchase agreements, and securities loaned and borrowed).

Credit risk also arises from clearing and settlement activities, when Citi transfers an asset in advance of receiving its counter-value or advances funds to settle a transaction on behalf of a client. Concentration risk, within credit risk, is the risk associated with having credit exposure concentrated within a specific client, industry, region or other category.

Citi has an established framework in place for managing credit risk across all businesses that includes a defined risk appetite, credit limits and credit policies. Citi's credit risk management framework also includes policies and procedures to manage problem exposures.

To manage concentration risk, Citi has in place a framework consisting of industry limits, single-name concentrations for each business and across Citigroup and a specialized product limit framework.

Credit exposures are generally reported in notional terms for accrual loans, reflecting the value at which the loans as well as other off-balance sheet commitments are carried on the Consolidated Balance Sheet. Credit exposure arising from capital markets activities is generally expressed as the current mark-to-market, net of margin, reflecting the net value owed to Citi by a given counterparty.

The credit risk associated with Citi's credit exposures is a function of the idiosyncratic creditworthiness of the obligor, as well as the terms and conditions of the specific obligation. Citi assesses the credit risk associated with its credit exposures on a regular basis through its allowance for credit losses (ACL) process, as well as through regular stress testing at the company, business, geography and product levels. These stress-testing processes typically estimate potential incremental credit costs that would occur as a result of either downgrades in the credit quality or defaults of the obligors or counterparties.

LIQUIDITY RISK

Overview

Adequate and diverse sources of funding and liquidity are essential to Citi's businesses. Funding and liquidity risks arise from several factors, many of which are mostly or entirely outside Citi's control, such as disruptions in the financial markets, changes in key funding sources, credit spreads, changes in Citi's credit ratings and macroeconomic, geopolitical and other conditions. For additional information, see "Risk Factors—Liquidity Risks" above.

Citi's funding and liquidity management objectives are aimed at (i) funding its existing asset base, (ii) growing its core businesses, (iii) maintaining sufficient liquidity, structured appropriately, so that Citi can operate under a variety of adverse circumstances, including potential Company-specific and/or market liquidity events in varying durations and severity, and (iv) satisfying regulatory requirements, including, but not limited to, those related to resolution planning. Citigroup's primary liquidity objectives are established by entity, and in aggregate, across two major categories:

- Citibank (including Citibank Europe plc, Citibank Singapore Ltd. and Citibank (Hong Kong) Ltd.); and
- Citi's non-bank and other entities, including the parent holding company (Citigroup Inc.), Citi's primary intermediate holding company (Citicorp LLC), Citi's broker-dealer subsidiaries (including Citigroup Global Markets Inc., Citigroup Global Markets Limited and Citigroup Global Markets Japan Inc.) and other bank and non-bank subsidiaries that are consolidated into Citigroup (including Citibanamex).

At an aggregate Citigroup level, Citi's goal is to maintain sufficient funding in amount and tenor to fully fund customer assets and to provide an appropriate amount of cash and high-quality liquid assets (as discussed below), even in times of stress, in order to meet its payment obligations as they come due. The liquidity risk management framework provides that in addition to the aggregate requirements, certain entities be self-sufficient or net providers of liquidity, including in conditions established under their designated stress tests.

Citi's primary funding sources include (i) corporate and consumer deposits via Citi's bank subsidiaries, including Citibank, N.A. (Citibank), (ii) long-term debt (primarily senior and subordinated debt) mainly issued by Citigroup Inc., as the parent, and Citibank, and (iii) stockholders' equity. These sources may be supplemented by short-term borrowings, primarily in the form of secured funding transactions.

Citi's funding and liquidity framework, working in concert with overall asset/liability management, ensures that there is sufficient liquidity and tenor in the overall liability structure (including funding products) of the Company relative to the liquidity requirements of Citi's assets. This reduces the risk that liabilities will become due before assets mature or are monetized. The Company holds excess liquidity, primarily in the form of high-quality liquid assets (HQLA).

Citi's liquidity is managed centrally by Corporate Treasury, in conjunction with regional and in-country treasurers with oversight provided by Independent Risk Management and various Asset & Liability Committees (ALCOs) at the individual entity, region, country and business levels. Pursuant to this approach, Citi's HQLA are managed with emphasis on asset/liability management and entity-level liquidity adequacy throughout Citi.

Citi's CRO and CFO co-chair Citigroup's ALCO, which includes Citi's Treasurer and other senior executives. The ALCO sets the strategy of the liquidity portfolio and monitors portfolio performance. Significant changes to portfolio asset allocations are approved by the ALCO. Citi also has other ALCOs, which are established at various organizational levels to ensure appropriate oversight for individual entities, countries, franchise businesses and regions, serving as the primary governance committees for managing Citi's balance sheet and liquidity.

As a supplement to ALCO, Citi's Funding and Liquidity Risk Committee (FLRC) is focused on funding and liquidity risk matters. The FLRC reviews and discusses the funding and liquidity risk profile of, as well as risk management practices for, Citigroup and Citibank and reports its findings and recommendations to each relevant ALCO as appropriate.

MARKET RISK

Overview

Market risk is the potential for losses arising from changes in the value of Citi's assets and liabilities resulting from changes in market variables such as interest rates, foreign exchange rates, equity prices, commodity prices and credit spreads, as well as their implied volatilities. Market risk arises from both Citi's trading and non-trading portfolios. For additional information on market risk and market risk management at Citi, see "Risk Factors" above.

Each business is required to establish, with approval from Citi's market risk management, a market risk limit framework for identified risk factors that clearly defines approved risk profiles and is within the parameters of Citi's overall risk appetite. These limits are monitored by the Risk organization, including various regional, legal entity and business Risk Management committees, Citi's country and business Asset & Liability Committees and the Citigroup Risk Management and Asset & Liability Committees. In all cases, the businesses are ultimately responsible for the market risks taken and for remaining within their defined limits.

Market Risk of Trading Portfolios

Trading portfolios include positions resulting from market-making activities, the CVA relating to derivative counterparties and all associated hedges and fair value option loans.

The market risk of CGMHI's trading portfolios is monitored using a combination of quantitative and qualitative measures, including, but not limited to, factor sensitivities, value at risk (VAR) and stress testing. Each trading portfolio across CGMHI's businesses has its own market risk limit framework encompassing these measures and other controls, including trading mandates, new product approval, permitted product lists and pre-trade approval for larger, more complex and less liquid transactions.

Factor Sensitivities

Factor sensitivities are expressed as the change in the value of a position for a defined change in a market risk factor, such as a change in the value of a U.S. Treasury Bond for a one-basis-point change in interest rates. Citi's Global Market Risk function, within the Independent Risk Management organization, works to ensure that factor sensitivities are calculated, monitored and limited for all material risks taken in the trading portfolios.

Value at Risk (VAR)

VAR estimates, at a 99% confidence level, the potential decline in the value of a position or a portfolio under normal market conditions assuming a one-day holding period. VAR statistics, which are based on historical data, can be materially different across firms due to differences in portfolio composition, VAR methodologies and model parameters. As a result, Citi believes VAR statistics can be used more effectively as indicators of trends in risk-taking within a firm, rather than as a basis for inferring differences in risk-taking across firms.

Citi uses a single, independently approved Monte Carlo simulation VAR model, which has been designed to capture material risk sensitivities (such as first- and second-order sensitivities of positions to changes in market prices) of various asset classes/risk types (such as interest rate, credit spread, foreign exchange, equity and commodity risks). Citi's VAR includes positions that are measured at fair value.

Citi believes its VAR model is conservatively calibrated to incorporate fat-tail scaling and the greater of short-term (approximately the most recent month) and long-term (18 months for commodities and three years for others) market volatility. As of June 30, 2023, Citi estimates that the conservative features of the VAR calibration contribute an approximate 48% add-on to what would be a VAR estimated under the assumption of stable and perfectly, normally distributed markets. As of March 31, 2023, the add-on was 65%.

Period-end and Average Trading VAR and Trading and Credit Portfolio VAR

In millions of dollars	June 30, 2023	Six Months 2023 Average	June 30, 2022	Six Months 2022 Average
Interest rate	$ 75	$ 95	$ 88	$ 71
Equity	12	21	36	34
Commodity	25	26	31	35
Foreign exchange	7	8	5	7
Covariance adjustment (1)	(47)	(55)	(57)	(64)
Total trading VAR—all market risk factors, including general and specific risk (excluding credit portfolios) (2)	72	95	103	83
Specific risk-only component (3)	(7)	3	13	11
Total trading VAR—general market risk factors only (excluding credit portfolios)	79	92	90	72
Incremental impact of the credit portfolio (4)	1	2	9	5
Total trading and credit portfolio VAR	**$ 73**	**$ 97**	**$ 112**	**$ 88**

(1) Covariance adjustment (also known as diversification benefit) equals the difference between the total VAR and the sum of the VARs tied to each risk type. The benefit reflects the fact that the risks within individual and across risk types are not perfectly correlated and, consequently, the total VAR on a given day will be lower than the sum of the VARs relating to each risk type. The determination of the primary drivers of changes to the covariance adjustment is made by an examination of the impact of both model parameter and position changes.

(2) The total trading VAR includes mark-to-market and certain fair value option trading positions in CGMHI, with the exception of fair value option loans and all CVA exposures.

(3) The specific risk-only component represents the level of equity and fixed income issuer-specific risk embedded in VAR.

(4) The credit portfolio is composed of mark-to-market positions associated with the CVA relating to derivative counterparties and all associated CVA hedges. FVA and DVA are not included. The credit portfolio also includes fair value option loans and hedges to the leveraged finance pipeline within capital markets origination in CGMHI.

The table below provides the range of market factor VARs associated with CGMHI's total trading VAR, inclusive of specific risk:

	Six Months 2023		Six Months 2022	
In millions of dollars	Low	High	Low	High
Interest rate	$ 71	$ 130	$ 53	$ 95
Equity	12	37	16	65
Commodity	19	37	23	52
Foreign exchange	5	18	4	17
Total trading	$ 67	$ 134	$ 64	$ 110
Total trading and credit portfolio	68	137	67	117

Note: No covariance adjustment can be inferred from the above table as the high and low for each market factor will be from different close-of-business dates.

VAR Model Review and Validation
Generally, Citi's VAR review and model validation process entails reviewing the model framework, major assumptions and implementation of the mathematical algorithm. In addition, product-specific back-testing on portfolios is periodically completed as part of the ongoing model performance monitoring process and reviewed with Citi's U.S. banking regulators.

Material VAR model and assumption changes must be independently validated within Citi's Independent Risk Management organization. All model changes, including those for the VAR model, are validated by the model validation group within Citi's Model Risk Management. In the event of significant model changes, parallel model runs are undertaken prior to implementation. In addition, significant model and assumption changes are subject to the periodic reviews and approval by Citi's U.S. banking regulators.

Stress Testing
Citi performs market risk stress testing on a regular basis to estimate the impact of extreme market movements. It is performed on individual positions and trading portfolios, as well as in aggregate, inclusive of multiple trading portfolios. Citi's market risk management, after consultations with the businesses, develops both systemic and specific stress scenarios, reviews the output of periodic stress testing exercises and uses the information to assess the ongoing appropriateness of exposure levels and limits. Citi uses two complementary approaches to market risk stress testing across all major risk factors (i.e., equity, foreign exchange, commodity, interest rate and credit spreads): top-down systemic stresses and bottom-up business-specific stresses. Systemic stresses are designed to quantify the potential impact of extreme market movements on an institution-wide basis, and are constructed using both historical periods of market stress and projections of adverse economic scenarios. Business-specific stresses are designed to probe the risks of particular portfolios and market segments, especially those risks that are not fully captured in VAR and systemic stresses.

The systemic stress scenarios and business-specific stress scenarios at Citi are used in several reports reviewed by senior management and also to calculate internal risk capital for trading market risk. In general, changes in market values are defined over a one-year horizon. For the most liquid positions and market factors, changes in market values are defined over a shorter two-month horizon. The limited set of positions and market factors whose market value changes are defined over a two-month horizon are those that in management's judgment have historically remained very liquid during financial crises, even as the trading liquidity of most other positions and market factors materially declined.

OPERATIONAL RISK

Overview
Operational risk is the risk of loss resulting from inadequate or failed internal processes or systems, including human error or misjudgment, or from external events. This includes legal risk, which is the risk of loss (including litigation costs, settlements and regulatory fines) resulting from the failure of Citi to comply with laws, regulations, prudent ethical standards and contractual obligations in any aspect of its businesses, but excludes strategic and reputation risks. Citi also recognizes the impact of operational risk on the reputation risk associated with Citi's business activities.

Operational risk is inherent in Citi's global business activities, as well as related support functions, and can result in losses. Citi maintains a comprehensive Company-wide risk taxonomy to classify operational risks that it faces using standardized definitions across Citi's Operational Risk Management Framework (see discussion below). This taxonomy also supports regulatory requirements and expectations inclusive of those related to U.S. Basel III, Comprehensive Capital Analysis and Review (CCAR), Heightened Standards for Large Financial Institutions and Dodd-Frank Act Stress Testing (DFAST).

Citi manages operational risk consistent with the overall framework described in "Managing Global Risk—Overview" above. Citi's goal is to keep operational risk at appropriate levels relative to the characteristics of its businesses, the markets in which it operates, its capital and liquidity and the competitive, economic and regulatory environment. This includes effectively managing operational risk and maintaining or reducing operational risk exposures within Citi's operational risk appetite.

Citi's Independent Operational Risk Management group has established a global Operational Risk Management Framework with policies and practices for identification, measurement, monitoring, managing and reporting operational risks and the overall operating effectiveness of the internal control environment. As part of this framework, Citi has defined its operational risk appetite and established a manager's control assessment (MCA) process for self-identification of significant operational risks, assessment of the performance of key controls and mitigation of residual risk above acceptable levels.

Each Citi operating segment must implement operational risk processes consistent with the requirements of this framework. This includes:

- understanding the operational risks they are exposed to;
- designing controls to mitigate identified risks;
- establishing key indicators;
- monitoring and reporting whether the operational risk exposures are in or out of their operational risk appetite;
- having processes in place to bring operational risk exposures within acceptable levels;
- periodically estimating and aggregating the operational risks they are exposed to; and
- ensuring that sufficient resources are available to actively improve the operational risk environment and mitigate emerging risks.

Citi considers operational risks that result from the introduction of new or changes to existing products, or result from significant changes in its organizational structures, systems, processes and personnel.

Citi has a governance structure for the oversight of operational risk exposures through Business Risk and Controls Committees (BRCCs), which include a Citigroup Global BRCC as well as business, functions, regional and country BRCCs. BRCCs provide escalation channels for senior management to review operational risk exposures including breaches of operational risk appetite, key indicators, operational risk events and control issues. Membership includes senior business and functions leadership as well as members of the second line of defense.

In addition, Independent Risk Management, including the Operational Risk Management group, works proactively with Citi's businesses and functions to drive a strong and embedded operational risk management culture and framework across Citi. The Operational Risk Management group actively challenges business and functions implementation of the Operational Risk Management Framework requirements and the quality of operational risk management practices and outcomes.

Information about businesses' key operational risks, historical operational risk losses and the control environment is reported by each major business segment and functional area. Citi's operational risk profile and related information is summarized and reported to senior management, as well as to the Audit and Risk Committees of Citi's Board of Directors by the Head of Operational Risk Management.

Operational risk is measured through Operational Risk Capital and Operational Risk Regulatory Capital for the Advanced Approaches under Basel III. Projected operational risk losses under stress scenarios are estimated as a required part of the FRB's CCAR process.

For additional information on Citi's operational risks, see "Risk Factors—Operational Risk" above.

Cybersecurity Risk

Overview

Cybersecurity risk is the business risk associated with the threat posed by a cyberattack, cyber breach or the failure to protect Citi's most vital business information assets or operations, resulting in a financial or reputational loss (for additional information, see the operational processes and systems and cybersecurity risk factors in "Risk Factors—Operational Risks" above). With an evolving threat landscape, ever-increasing sophistication of threat actor tactics, techniques and procedures, and use of new technologies to conduct financial transactions, Citi and its clients, customers and third parties are and will continue to be at risk from cyberattacks and information security incidents. Citi recognizes the significance of these risks and, therefore, leverages a threat-focused strategy to protect against, detect and respond to, and recover from cyberattacks. Further, Citi actively participates in financial industry, government and cross-sector knowledge-sharing groups to enhance individual and collective cybersecurity preparedness and resilience.

Risk Management

Citi's technology and cybersecurity risk management program is built on three lines of defense. Citi's first line of defense under the Office of the Chief Information Security Officer provides frontline business, operational and technical controls and capabilities to protect against cybersecurity risks, and to respond to cyber incidents and data breaches. Citi manages these threats through state-of-the-art Fusion Centers, which serve as central commands for monitoring and coordinating responses to cyber threats. The enterprise information security team is responsible for infrastructure defense and security controls, performing vulnerability assessments and third-party information security assessments, employee awareness and training programs and security incident management. In each case the team works in coordination with a network of information security officers who are embedded within the businesses and functions globally.

Citi's Operational Risk Management-Technology and Cyber (ORM-T/C) and Independent Compliance Risk Management-Technology and Information Security (ICRM-T) groups serve as the second line of defense, and actively evaluate, anticipate and challenge Citi's risk mitigation practices and capabilities. Citi seeks to proactively identify and remediate technology and cybersecurity risks before they materialize as incidents that negatively affect business operations. Accordingly, the ORM-T/C team independently challenges and monitors capabilities in accordance with Citi's defined Technology and Cyber Risk Appetite statements. To address evolving cybersecurity risks and corresponding regulations, ORM-T/C and ICRM-T teams collectively also monitor cyber legal and regulatory requirements, identify and define emerging risks, execute strategic cyber threat assessments, perform new products and initiative reviews, perform data management risk oversight and conduct cyber risk assurance reviews (inclusive of third-party assessments). In addition, ORM-T/C employs tools and oversees and challenges metrics that are both tailored to cybersecurity and technology and aligned with Citi's overall operational risk management framework to effectively track, identify and manage risk.

Internal audit serves as the third line of defense and independently provides assurance on how effectively the organization as a whole manages cybersecurity risk. Citi also has multiple senior committees such as the Information Security Risk Committee (ISRC), which governs enterprise-level risk tolerance inclusive of cybersecurity risk.

COMPLIANCE RISK

Compliance risk is the risk to current or projected financial condition and resilience arising from violations of laws, rules, or regulations, or from non-conformance with prescribed practices, internal policies and procedures or ethical standards. Compliance risk exposes Citi to fines, civil money penalties, payment of damages and the voiding of contracts. Compliance risk can result in diminished reputation, harm to Citi's customers, limited business opportunities and lessened expansion potential. It encompasses the risk of noncompliance with all laws and regulations, as well as prudent ethical standards and some contractual obligations. It could also include exposure to litigation (known as legal risk) from all aspects of traditional and non-traditional banking.

Citi seeks to operate with integrity, maintain strong ethical standards and adhere to applicable policies and regulatory and legal requirements. Citi must maintain and execute a proactive Compliance Risk Management (CRM) Framework (as set forth in the CRM Policy) that is designed to manage compliance risk effectively across Citi, with a view to fundamentally strengthen the compliance risk management culture across the lines of defense taking into account Citi's risk governance framework and regulatory requirements. Independent Compliance Risk Management's (ICRM) primary objectives are to:

- Drive and embed a culture of compliance and control throughout Citi;
- Maintain and oversee an integrated CRM Framework that facilitates enterprise-wide compliance with local, national or cross-border laws, rules or regulations, Citi's internal policies, standards and procedures and relevant standards of conduct;
- Assess compliance risks and issues across product lines, functions and geographies, supported by globally consistent systems and compliance risk management processes; and
- Provide compliance risk data aggregation and reporting capabilities.

Citi carries out its objectives and fulfills its responsibilities through the CRM Framework, which is composed of the following integrated key activities, to holistically manage compliance risk:

- Management of Citi's compliance with laws, rules and regulations by identifying and analyzing changes, assessing the impact, and implementing appropriate policies, processes and controls;
- Developing and providing compliance training to ensure colleagues are aware of and understand the key laws, rules and regulations;
- Monitoring the Compliance Risk Appetite, which is articulated through qualitative compliance risk statements describing Citi's appetite for certain types of risk and quantitative measures to monitor the Company's compliance risk exposure;
- Executing Compliance Risk Assessments, the results of which inform Compliance Risk Monitoring and testing of compliance risks and controls in assessing conformance with laws, rules, regulations and internal policies; and
- Issue identification, escalation and remediation to drive accountability, including measurement and reporting of compliance risk metrics against established thresholds in support of the CRM Policy and Compliance Risk Appetite.

To anticipate, control and mitigate compliance risk, Citi has established the CRM Policy to achieve standardization and centralization of methodologies and processes, and to enable more consistent and comprehensive execution of compliance risk management.

Citi has a commitment, as well as an obligation, to identify, assess and mitigate compliance risks associated with its businesses and functions. ICRM is responsible for oversight of Citi's CRM Policy, while all businesses and global control functions are responsible for managing their compliance risks and operating within the Compliance Risk Appetite.

As discussed above, Citi is working to address the FRB and OCC consent orders, which include improvements to Citi's CRM Framework and its enterprise-wide application.

REPUTATION RISK

Citi's reputation is a vital asset in building trust and Citi is diligent in enhancing and protecting its reputation with its key stakeholders. To support this, Citi has developed a reputation risk framework. Under this framework, Citigroup and Citibank, N.A. have implemented a risk appetite statement and related key indicators to monitor corporate activities and operations relative to Citi's risk appetite. The framework also requires that business segments and regions escalate potential material reputation risks that require review or mitigation through a Reputation Risk Committee or equivalent.

The Reputation Risk Committees, which are composed of Citi's senior executives, govern the process by which material reputation risks are identified, measured, monitored, controlled and reported. The Reputation Risk Committees determine the appropriate actions to be taken in line with risk appetite and regulatory expectations, while promoting a culture of risk awareness and high standards of integrity and ethical behavior across the Company, consistent with Citi's Mission and Value Proposition. The Citigroup Reputation Risk Committee may escalate reputation risks to the Nomination, Governance and Public Affairs Committee or other appropriate committee of the Citigroup Board of Directors.

Every Citi employee is responsible for safeguarding Citi's reputation, guided by Citi's Code of Conduct. Colleagues are expected to exercise sound judgment and common sense in decisions and actions. They are also expected to promptly escalate all issues that present material reputation risk in line with policy.

STRATEGIC RISK

As discussed above, strategic risk is the risk of a sustained impact (not episodic impact) to Citi's core strategic objectives as measured by impacts on anticipated earnings, market capitalization, or capital, arising from external factors affecting the Company's operating environment, as well as the risks associated with defining the strategy and executing the strategy, which are identified, measured and managed as part of the Strategic Risk Framework at the Enterprise Level.

In this context, external factors affecting Citi's operating environment are the economic environment, geopolitical/political landscape, industry/competitive landscape, societal trends, customer/client behavior, regulatory/legislative environment and trends related to investors/shareholders.

Citi's Executive Management Team is responsible for the development and execution of Citi's strategy. This strategy is translated into forward-looking plans (collectively Citi's Strategic Plan) that are then cascaded across the organization. Citi's Strategic Plan is presented to the Board on an annual basis, and is aligned with risk appetite thresholds and includes a risk assessment as required by internal frameworks. It is also aligned with limit requirements for capital allocation. Governance and oversight of strategic risk is facilitated by internal committees on a group-wide basis as well as strategic committees at the operating segment and regional levels.

Citi works to ensure that strategic risks are adequately considered and addressed across its various risk management activities, and that strategic risks are assessed in the context of Citi's risk appetite. Citi conducts a top-down, bottom-up risk identification process to identify risks, including strategic risks. Business segments undertake a quarterly risk identification process to systematically identify and document all material risks faced by Citi. Independent Risk Management oversees the risk identification process through regular reviews and coordinates identification and monitoring of top risks. In addition, Citi performs a quarterly Risk Assessment of the Plan (RAOP) and continuously monitors risks associated with its execution of strategy. Independent Risk Management also manages strategic risk by monitoring risk appetite thresholds in conjunction with various strategic risk committees, which are part of the governance structure that Citi has in place to manage its strategic risks.

For additional information on Citi's strategic risks, see "Risk Factors—Strategic Risks" above.

OTHER RISKS

LIBOR Transition Risk

The USD LIBOR bank panel ended on June 30, 2023. The overnight and 12-month USD LIBOR settings have now permanently ceased, and the Financial Conduct Authority is requiring ICE Benchmark Administration to continue publishing one-, three- and six-month USD LIBOR settings using a synthetic methodology, which is based on the relevant CME Term SOFR Reference Rate plus the respective ISDA fixed spread adjustment. These synthetic settings are permanently unrepresentative of the underlying markets they previously sought to measure and are expected to cease on September 30, 2024.

As of June 30, 2023, Citi has transitioned nearly all of its USD LIBOR-referencing contracts to SOFR plus a credit spread adjustment. Remediation was accomplished through a range of methods. With respect to derivatives, most bilateral contracts were remediated through adherence to the ISDA IBOR Fallbacks Protocols or bilateral amendments, and cleared contracts were remediated through conversions completed by central counterparty clearing houses. Most loan contracts were remediated through amendments that provided for either an immediate transition to SOFR or a transition on the first interest payment date immediately following June 30, 2023. With respect to securities, contracts governed by U.S. law transitioned to SOFR by operation of law pursuant to the Adjustable Interest Rate (LIBOR) Act or pursuant to Citi's exercise of discretion as the determining person with the authority to select a replacement rate. Securities contracts not governed by U.S. law were primarily remediated through consent solicitations or Citi's exercise of discretion as the determining person with the authority to select a replacement rate.

As of June 30, 2023, there were a de minimis number of unremediated USD LIBOR-referencing contracts. Most of these contracts relate to non-U.S.-law-governed securities and loans that will temporarily utilize synthetic LIBOR. Citi will continue to focus on remediating its remaining unremediated contracts.

UNREGISTERED SALES OF EQUITY SECURITIES, REPURCHASES OF EQUITY SECURITIES AND DIVIDENDS

Unregistered Sales of Equity Securities

None.

Equity Security Repurchases

All large banks, including Citi, are subject to limitations on capital distributions in the event of a breach of any regulatory capital buffers, including the Stress Capital Buffer, with the degree of such restrictions based on the extent to which the buffers are breached. For additional information, see “Risk Factors—Strategic Risks” above.

The following table summarizes Citi’s common share repurchases for the second quarter of 2023:

In millions, except per share amounts	**Total shares purchased**	**Average price paid per share**
April 2023		
Open market repurchases (1)	—	$ —
Employee transactions (2)	—	—
May 2023		
Open market repurchases (1)	1.1	44.05
Employee transactions (2)	—	—
June 2023		
Open market repurchases (1)	20.1	47.24
Employee transactions (2)	—	—
Total for 2Q23	21.2	$ 47.07

(1) Repurchases not made pursuant to any publicly announced plan or program.

(2) During the second quarter, pursuant to Citigroup’s Board of Directors’ authorization, Citi withheld an insignificant number of shares of common stock, added to treasury stock, related to activity on employee stock programs to satisfy the employee tax requirements.

As previously announced, Citi will continue to assess common share repurchases on a quarter-by-quarter basis given uncertainty regarding regulatory capital requirements.

Dividends

Citi paid common dividends of $0.51 per share for the second quarter of 2023, and on July 20, 2023, declared common dividends of $0.53 per share for the third quarter of 2023. Citi intends to maintain a quarterly common dividend of at least $0.53 per share, subject to financial and macroeconomic conditions as well as its Board of Directors’ approval.

As discussed above, Citi’s ability to pay common stock dividends is subject to limitations on capital distributions in the event of a breach of any regulatory capital buffers, including the Stress Capital Buffer, with the degree of such restrictions based on the extent to which the buffers are breached. For additional information, see “Risk Factors—Strategic Risks” above.

Any dividend on Citi’s outstanding common stock would also need to be in compliance with Citi’s obligations on its outstanding preferred stock.

On July 20, 2023, Citi declared preferred dividends of approximately $333 million for the third quarter of 2023.

CITIGROUP GLOBAL MARKETS HOLDINGS INC.
AND SUBSIDIARIES

CONSOLIDATED FINANCIAL STATEMENTS
AS OF JUNE 30, 2023 AND DECEMBER 31, 2022
AND FOR THE SIX MONTHS ENDED
JUNE 30, 2023 AND 2022
(UNAUDITED)

CITIGROUP GLOBAL MARKETS HOLDINGS INC. AND SUBSIDIARIES

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

CITIGROUP GLOBAL MARKETS HOLDINGS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(Unaudited)

	Six Months Ended June 30,	
In millions of dollars	2023	2022
Revenues:		
Investment banking	$ 1,421	$ 1,845
Principal transactions	1,858	2,466
Commissions and fees	783	870
Fiduciary fees	124	172
Other	(4)	60
Total non-interest revenues	4,182	5,413
Interest revenue	17,458	2,787
Interest expense	15,642	1,932
Net interest income	1,816	855
Total revenues, net of interest expense	5,998	6,268
Non-interest expenses:		
Compensation and benefits	2,973	2,835
Technology, communications and equipment	853	797
Brokerage, clearing and exchange fees	697	741
Professional services	164	231
Occupancy	150	126
Other operating and administrative expenses	1,134	1,027
Total operating expenses	5,971	5,757
Income before income taxes	27	511
Provision (benefit) for income taxes	(60)	(223)
Net income	$ 87	$ 734

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

CITIGROUP GLOBAL MARKETS HOLDINGS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited)

	Six Months Ended June 30,	
In millions of dollars	2023	2022
Net income	$ 87	$ 734
Add: Other comprehensive income (loss)		
Net change in debt valuation adjustment (DVA), pretax [1]	(628)	2,090
Benefit plans liability adjustment, pretax	(24)	(41)
Foreign currency translation adjustment, pretax	54	(410)
Income tax on items reflected in Other comprehensive income	173	(543)
Total other comprehensive income (loss)	(425)	1,096
Total comprehensive income (loss)	$ (338)	$ 1,830

(1) See Note 8.

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

CITIGROUP GLOBAL MARKETS HOLDINGS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF FINANCIAL CONDITION

In millions of dollars		June 30, 2023 (Unaudited)		December 31, 2022
Assets				
Cash and cash equivalents		$ 13,070		$ 14,381
Cash segregated under federal and other regulations		8,436		12,741
Securities borrowed and purchased under agreements to resell (including $193,444 and $222,134 as of June 30, 2023 and December 31, 2022, respectively, at fair value)		276,820		306,273
Trading account assets (including $182,115 and $128,364 pledged to creditors at June 30, 2023 and December 31, 2022, respectively):				
U.S. Treasury and federal agency securities	68,250		49,209	
Mortgage-backed securities	60,004		38,407	
Equity securities	50,444		41,968	
Foreign government securities	41,545		26,864	
Derivatives	25,142		29,826	
Corporate	19,258		16,554	
Asset-backed securities	2,099		2,265	
State and municipal securities	1,943		2,110	
Other trading assets	2,827		2,753	
Total trading account assets		271,512		209,956
Brokerage receivables:				
Customers	16,120		15,151	
Brokers, dealers and clearing organizations	35,192		31,406	
Total brokerage receivables		51,312		46,557
Loans to affiliates		94,195		93,670
Goodwill		2,190		2,191
Other assets (including $7,108 and $5,829 as of June 30, 2023 and December 31, 2022, respectively, at fair value)		23,349		21,402
Total assets		$740,884		$707,171

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

CITIGROUP GLOBAL MARKETS HOLDINGS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF FINANCIAL CONDITION
(Continued)

In millions of dollars, except shares		June 30, 2023 (Unaudited)		December 31, 2022
Liabilities				
Short-term borrowings (including $5,027 and $5,336 as of June 30, 2023 and December 31, 2022, respectively, at fair value)		$ 26,731		$ 43,850
Securities loaned and sold under agreements to repurchase (including $58,278 and $66,389 as of June 30, 2023 and December 31, 2022, respectively, at fair value)		292,491		245,916
Trading account liabilities		114,874		115,929
Brokerage payables (including $5,912 and $4,439 as of June 30, 2023 and December 31, 2022, respectively, at fair value)				
Customers	57,297		65,729	
Brokers, dealers and clearing organizations	13,678		11,245	
Total brokerage payables		70,975		76,974
Other liabilities		10,471		13,702
Long-term debt (including $94,641 and $87,865 as of June 30, 2023 and December 31, 2022, respectively, at fair value)		186,966		172,068
Total liabilities		702,508		668,439
Stockholder's equity				
Common stock (par value $.01 per share, 1,000 shares authorized; 1,000 shares issued and outstanding)		—		—
Additional paid-in capital		29,105		29,104
Retained earnings		10,046		9,978
Accumulated other comprehensive income (loss) (AOCI)		(775)		(350)
Total stockholder's equity		38,376		38,732
Total liabilities and equity		$740,884		$707,171

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

CITIGROUP GLOBAL MARKETS HOLDINGS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDER'S EQUITY
(Unaudited)

	Six Months Ended June 30,	
In millions of dollars	2023	2022
Common stock and additional paid-in capital		
Balance, beginning of year	$ 29,104	$ 28,712
Capital contributions from Citigroup	—	250
Employee benefit plans	1	1
Balance, end of year	29,105	28,963
Retained earnings		
Balance, beginning of year	9,978	10,418
Adjustment to opening balance, net of taxes	(4)	—
Adjusted balance, beginning of period	9,974	10,418
Net income	87	734
Dividends	(15)	(266)
Balance, end of year	10,046	10,886
Accumulated other comprehensive income (loss)		
Balance, beginning of year	(350)	(1,305)
Total other comprehensive income (loss)	(425)	1,096
Balance, end of year	(775)	(209)
Total stockholder's equity	$ 38,376	$ 39,640

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

CITIGROUP GLOBAL MARKETS HOLDINGS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

In millions of dollars	Six Months Ended June 30, 2023	2022
Cash flows from operating activities:		
CGMHI's net income	$ 87	$ 734
Adjustments to reconcile net income to net cash used in operating activities:		
Depreciation and amortization	33	32
Net change in:		
Trading account assets	(61,556)	(3,292)
Trading account liabilities	(1,055)	(6,229)
Brokerage receivables net of brokerage payables	(10,755)	13,547
Other assets	1,558	(10,843)
Other liabilities	(3,231)	818
Net cash used in operating activities	(74,919)	(5,233)
Cash flows from investing activities:		
Securities borrowed and purchased under agreements to resell	29,453	(27,463)
Loans to affiliates	(525)	(16,450)
Other, net	(51)	29
Net cash provided by (used in) investing activities	28,877	(43,884)
Cash flows from financing activities:		
Dividends paid	(15)	(266)
Securities loaned and sold under agreements to repurchase	46,575	9,282
Capital contributions from Citigroup	—	250
Employee benefit plans	1	1
Issuance of long-term debt	31,838	77,946
Payments of long-term debt	(25,754)	(45,753)
Short-term borrowings, net	(12,219)	5,974
Net cash provided by financing activities	40,426	47,434
Change in cash and cash segregated under federal and other regulations	(5,616)	(1,683)
Cash and cash segregated under federal and other regulations at beginning of period	27,122	26,665
Cash and cash segregated under federal and other regulations at end of period	$ 21,506	$ 24,982
Cash and cash equivalents	$ 13,070	$ 12,667
Cash segregated under federal and other regulations	8,436	12,315
Cash and cash segregated under federal and other regulations at end of year	$ 21,506	$ 24,982
Cash paid during the year for interest	$ 14,941	$ 1,869
Change in tenor of long-term debt [1]	$ 4,900	$ (1,300)

(1) The composition of CGMHI's debt is adjusted dynamically based on the structural liquidity needs of the Company. During the six months ended June 30, 2023, the Company changed the tenor of $4.9 billion in debt with affiliates from short-term to long-term. During the six months ended June 30, 2022, the Company changed the tenor of $1.3 billion in debt with affiliates from long-term to short-term.

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

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The accompanying unaudited Consolidated Financial Statements as of June 30, 2023 and for the six-month periods ended June 30, 2023 and 2022 include the accounts of Citigroup Global Markets Holdings Inc. (CGMHI) and its consolidated subsidiaries. CGMHI is a direct wholly owned subsidiary of Citigroup Inc., a Delaware corporation and a financial holding company under the Bank Holding Company Act (Citigroup and its consolidated subsidiaries are referred to herein as "Citigroup" or "Citi").

In the opinion of management, all adjustments, consisting of normal recurring adjustments, necessary for a fair presentation have been reflected. The accompanying unaudited Consolidated Financial Statements should be read in conjunction with the Consolidated Financial Statements and related notes included within CGMHI's 2022 Audited Financial Statements.

Certain financial information that is normally included in annual financial statements prepared in accordance with U.S. generally accepted accounting principles (GAAP), but is not required for interim reporting purposes, has been condensed or omitted.

Management must make estimates and assumptions that affect the Consolidated Financial Statements and the related footnote disclosures. While management uses its best judgment, actual results could differ from those estimates.

As noted above, the Notes to these Consolidated Financial Statements are unaudited.

Throughout these Notes, "CGMHI" and "the Company" refer to Citigroup Global Markets Holdings Inc. and its consolidated subsidiaries.

Certain reclassifications and updates have been made to the prior periods' financial statements and notes to conform to the current period's presentation.

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

See Note 1 to the Consolidated Financial Statements in the Company's 2022 Audited Financial Statements for a summary of all of CGMHI's significant accounting policies.

FUTURE ACCOUNTING CHANGES

Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions

In June 2022, the FASB issued ASU No. 2022-3, *Fair Value Measurement (Topic 820): Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions*. The ASU was issued to address diversity in practice whereby certain entities included the impact of contractual restrictions when valuing equity securities, and it clarifies that a contractual restriction on the sale of an equity security should not be considered part of the unit of account of the equity security and, therefore, should not be considered in measuring fair value. The ASU also includes requirements for entities to disclose the fair value of equity securities subject to contractual sale restrictions, the nature and remaining duration of the restrictions and the circumstances that could cause a lapse in the restrictions.

The ASU is to be adopted on a prospective basis and will be effective for the Company on January 1, 2024, although early adoption is permitted. Adoption of the accounting standard is not expected to have an impact on the Company's operating results or financial position, as the Company does not include such restrictions when valuing equity securities.

2. PRINCIPAL TRANSACTIONS

Principal transactions revenue consists of realized and unrealized gains and losses from trading activities. Trading activities include revenues from fixed income, equities, credit and commodities products and foreign exchange transactions that are managed on a portfolio basis and characterized below based on the primary risk managed by each trading desk (as such, the trading desks can be periodically reorganized and thus the risk categories). Not included in the table below is the impact of net interest income related to trading activities, which is an integral part of trading activities' profitability. Principal transactions include CVA (credit valuation adjustments) and FVA (funding valuation adjustments) on over-the-counter derivatives. These adjustments are discussed further in Note 8.

In certain transactions, CGMHI incurs fees and presents these fees paid to third parties in operating expenses. The following table presents *Principal transactions* revenue:

	Six Months Ended June 30,	
In millions of dollars	2023	2022
Interest rate risks (1)	$ 734	$ 836
Credit products and risks (2)	607	329
Commodity and other risks (3)	511	866
Equity risks (4)	(2)	419
Foreign exchange risks (5)	8	16
Total principal transactions revenue	$ 1,858	$ 2,466

(1) Includes revenues from government securities and corporate debt, municipal securities, mortgage securities and other debt instruments. Also includes spot and forward trading of currencies and exchange-traded and over-the-counter (OTC) currency options, options on fixed income securities, interest rate swaps, currency swaps, swap options, caps and floors, financial futures, OTC options and forward contracts on fixed income securities.
(2) Includes revenues from structured credit products.
(3) Primarily includes revenues from crude oil, refined oil products, natural gas and other commodities trades.
(4) Includes revenues from common, preferred and convertible preferred stock, convertible corporate debt, equity-linked notes and exchange-traded and OTC equity options and warrants.
(5) Includes revenues from foreign exchange spot, forward, option and swap contracts, as well as foreign currency translation gains and losses.

3. SECURITIES BORROWED, LOANED AND SUBJECT TO REPURCHASE AGREEMENTS

For additional information on the Company's resale and repurchase agreements and securities borrowing and lending agreements, see Note 5 to the Consolidated Financial Statements in the Company's 2022 Audited Financial Statements.

Securities borrowed and purchased under agreements to resell, at their respective carrying values, consisted of the following:

In millions of dollars	June 30, 2023	December 31, 2022
Securities purchased under agreements to resell (including $172,405 and $194,362 as of June 30, 2023 and December 31, 2022, respectively, at fair value)	$ 209,925	$ 235,297
Deposits paid for securities borrowed (including $21,039 and $27,772 as of June 30, 2023 and December 31, 2022, respectively, at fair value)	66,895	70,976
Total (1)	$ 276,820	$ 306,273

Securities loaned and sold under agreements to repurchase, at their respective carrying values, consisted of the following:

In millions of dollars	June 30, 2023	December 31, 2022
Securities sold under agreements to repurchase (including $58,134 and $66,255 as of June 30, 2023 and December 31, 2022, respectively, at fair value)	$ 279,296	$ 227,073
Deposits received for securities loaned (including $144 and $134 as of June 30, 2023 and December 31, 2022, respectively, at fair value)	13,195	18,843
Total (1)	$ 292,491	$ 245,916

(1) The above tables do not include securities-for-securities lending transactions of $5.9 billion and $4.4 billion at June 30, 2023 and December 31, 2022, respectively, where the Company acts as lender and receives securities that can be sold or pledged as collateral. In these transactions, the Company recognizes the securities received at fair value within *Other assets* and the obligation to return those securities as a liability within *Brokerage payables*.

It is the Company's policy to take possession of the underlying collateral, monitor its market value relative to the amounts due under the agreements and, when necessary, require prompt transfer of additional collateral in order to maintain contractual margin protection. For resale and repurchase agreements, when necessary, the Company posts additional collateral in order to maintain contractual margin protection.

A substantial portion of the resale and repurchase agreements is recorded at fair value as the Company elected the fair value option, as described in Notes 8 and 9. The remaining portion is carried at the amount of cash initially advanced or received, plus accrued interest, as specified in the respective agreements.

A substantial portion of securities borrowing and lending agreements is recorded at the amount of cash advanced or received. The remaining portion is recorded at fair value as the Company elected the fair value option for certain securities borrowed and loaned portfolios, as described in Note 9. With respect to securities loaned, the Company receives cash collateral in an amount generally in excess of the market value of the securities loaned. The Company monitors the market value of securities borrowed and securities loaned on a daily basis and posts or obtains additional collateral in order to maintain contractual margin protection.

The following tables present the gross and net resale and repurchase agreements and securities borrowing and lending agreements and the related offsetting amounts permitted under ASC 210-20-45. The tables also include amounts related to financial instruments that are not permitted to be offset under ASC 210-20-45, but would be eligible for offsetting to the extent that an event of default has occurred and a legal opinion supporting enforceability of the offsetting rights has been obtained. Remaining exposures continue to be secured by financial collateral, but the Company may not have sought or been able to obtain a legal opinion evidencing enforceability of the offsetting right.

	As of June 30, 2023				
In millions of dollars	Gross amounts of recognized assets	Gross amounts offset on the Consolidated Balance Sheet (1)	Net amounts of assets included on the Consolidated Balance Sheet	Amounts not offset on the Consolidated Balance Sheet but eligible for offsetting upon counterparty default (2)	Net amounts (3)
Securities purchased under agreements to resell	$ 416,494	$ 206,569	$ 209,925	$ 201,399	$ 8,526
Deposits paid for securities borrowed	83,594	16,699	66,895	14,569	52,326
Total	$ 500,088	$ 223,268	$ 276,820	$ 215,968	$ 60,852

In millions of dollars	Gross amounts of recognized liabilities	Gross amounts offset on the Consolidated Balance Sheet (1)	Net amounts of liabilities included on the Consolidated Balance Sheet	Amounts not offset on the Consolidated Balance Sheet but eligible for offsetting upon counterparty default (2)	Net amounts (3)
Securities sold under agreements to repurchase	$ 485,865	$ 206,569	$ 279,296	$ 193,385	$ 85,911
Deposits received for securities loaned	29,894	16,699	13,195	3,286	9,909
Total	$ 515,759	$ 223,268	$ 292,491	$ 196,671	$ 95,820

	As of December 31, 2022				
In millions of dollars	Gross amounts of recognized assets	Gross amounts offset on the Consolidated Balance Sheet (1)	Net amounts of assets included on the Consolidated Balance Sheet	Amounts not offset on the Consolidated Balance Sheet but eligible for offsetting upon counterparty default (2)	Net amounts (3)
Securities purchased under agreements to resell	$ 342,201	$ 106,904	$ 235,297	$ 197,912	$ 37,385
Deposits paid for securities borrowed	85,628	14,652	70,976	16,836	54,140
Total	$ 427,829	$ 121,556	$ 306,273	$ 214,748	$ 91,525

In millions of dollars	Gross amounts of recognized liabilities	Gross amounts offset on the Consolidated Balance Sheet (1)	Net amounts of liabilities included on the Consolidated Balance Sheet	Amounts not offset on the Consolidated Balance Sheet but eligible for offsetting upon counterparty default (2)	Net amounts (3)
Securities sold under agreements to repurchase	$ 333,977	$ 106,904	$ 227,073	$ 128,673	$ 98,400
Deposits received for securities loaned	33,495	14,652	18,843	2,881	15,962
Total	$ 367,472	$ 121,556	$ 245,916	$ 131,554	$ 114,362

(1) Includes financial instruments subject to enforceable master netting agreements that are permitted to be offset under ASC 210-20-45.
(2) Includes financial instruments subject to enforceable master netting agreements that are not permitted to be offset under ASC 210-20-45, but would be eligible for offsetting to the extent that an event of default has occurred and a legal opinion supporting enforceability of the offsetting right has been obtained.
(3) Remaining exposures continue to be secured by financial collateral, but the Company may not have sought or been able to obtain a legal opinion evidencing enforceability of the offsetting right.

The following tables present the gross amounts of liabilities associated with repurchase agreements and securities lending agreements by remaining contractual maturity:

	As of June 30, 2023				
In millions of dollars	Open and overnight	Up to 30 Days	31-90 Days	Greater than 90 Days	Total
Securities sold under agreements to repurchase	$ 291,658	$ 112,378	$ 25,404	$ 56,425	$ 485,865
Deposits received for securities loaned	25,108	209	318	4,259	29,894
Total	$ 316,766	$ 112,587	$ 25,722	$ 60,684	$ 515,759

	As of December 31, 2022				
In millions of dollars	Open and overnight	Up to 30 Days	31-90 Days	Greater than 90 Days	Total
Securities sold under agreements to repurchase	$ 170,532	$ 88,255	$ 29,745	$ 45,445	$ 333,977
Deposits received for securities loaned	28,020	267	1,107	4,101	33,495
Total	$ 198,552	$ 88,522	$ 30,852	$ 49,546	$ 367,472

The following tables present the gross amounts of liabilities associated with repurchase agreements and securities lending agreements by class of underlying collateral:

	As of June 30, 2023		
In millions of dollars	Repurchase agreements	Securities lending agreements	Total
U.S. Treasury and federal agency securities	$ 230,667	$ —	$ 230,667
State and municipal securities	1,485	—	1,485
Foreign government securities	152,425	118	152,543
Corporate bonds	16,299	64	16,363
Equity securities	21,333	25,553	46,886
Mortgage-backed securities	55,176	—	55,176
Asset-backed securities	2,840	—	2,840
Other trading assets	5,640	4,159	9,799
Total	$ 485,865	$ 29,894	$ 515,759

	As of December 31, 2022		
In millions of dollars	Repurchase agreements	Securities lending agreements	Total
U.S. Treasury and federal agency securities	$ 153,297	$ 106	$ 153,403
State and municipal securities	1,911	—	1,911
Foreign government securities	109,309	13	109,322
Corporate bonds	13,927	45	13,972
Equity securities	9,615	33,318	42,933
Mortgage-backed securities	36,185	—	36,185
Asset-backed securities	1,755	—	1,755
Other trading assets	7,978	13	7,991
Total	$ 333,977	$ 33,495	$ 367,472

4. DEBT

For additional information regarding CGMHI's short-term borrowings and long-term debt, see Note 6 to the Consolidated Financial Statements in CGMHI's 2022 Audited Financial Statements.

Short-Term Borrowings

In millions of dollars	June 30, 2023	December 31, 2022
Borrowings from affiliates	$ 11,377	$ 23,468
Commercial paper	9,814	14,345
Other short-term borrowings	5,540	6,037
Total	$ 26,731	$ 43,850

Long-Term Debt

In millions of dollars	June 30, 2023	December 31, 2022
Senior notes	$ 162,341	$ 148,443
Subordinated notes	24,625	23,625
Total	$ 186,966	$ 172,068

Long-term debt with affiliates totaled $91.4 billion and $83.2 billion at June 30, 2023 and December 31, 2022, respectively.

5. CAPITAL REQUIREMENTS

Certain U.S. and non-U.S. broker-dealer subsidiaries of CGMHI are subject to various securities and commodities regulations and capital adequacy requirements promulgated by the regulatory and exchange authorities of the countries in which they operate. These regulatory restrictions may impose regulatory capital requirements and limit the amounts that these subsidiaries can pay in dividends or advance to the Company.

At June 30, 2023, Citigroup Global Markets Inc., a U.S. broker-dealer registered with the SEC that is an indirect wholly owned subsidiary of CGMHI, had net capital, computed in accordance with the SEC's net capital rule, of $15 billion, which exceeded the minimum requirement by $11 billion.

Moreover, Citigroup Global Markets Limited, a broker-dealer registered with the United Kingdom's Prudential Regulation Authority (PRA) that is also an indirect wholly owned subsidiary of CGMHI, had total regulatory capital of $27 billion at June 30, 2023, which exceeded the PRA's minimum regulatory capital requirements.

In addition, certain of CGMHI's other broker-dealer subsidiaries are subject to regulation in the countries in which they do business, including requirements to maintain specified levels of net capital or its equivalent. CGMHI's other principal broker-dealer subsidiaries were in compliance with their regulatory capital requirements at June 30, 2023.

6. SECURITIZATIONS AND VARIABLE INTEREST ENTITIES

For additional information regarding CGMHI's use of special purpose entities (SPEs) and variable interest entities (VIEs), see Note 8 to the Consolidated Financial Statements in CGMHI's 2022 Audited Financial Statements.

The Company's involvement with consolidated and unconsolidated VIEs with which the Company holds significant variable interests is presented below:

	As of June 30, 2023					
				Maximum exposure to loss in significant unconsolidated VIEs [1]		
In millions of dollars	Total involvement with SPE assets	Consolidated VIE / SPE assets	Significant unconsolidated VIE assets [2]	Debt investments [3]	Derivatives	Total
Mortgage securitizations [4]						
U.S. agency-sponsored	$ 86,808	$ —	$ 86,808	$ 1,429	$ —	$ 1,429
Non-agency-sponsored	34,699	—	34,699	612	—	612
Asset-based financing	2,593	2,593	—	—	—	—
Other	161	—	161	20	1	21
Total	$ 124,261	$ 2,593	$ 121,668	$ 2,061	$ 1	$ 2,062

	As of December 31, 2022					
				Maximum exposure to loss in significant unconsolidated VIEs [1]		
In millions of dollars	Total involvement with SPE assets	Consolidated VIE / SPE assets	Significant unconsolidated VIE assets [2]	Debt investments [3]	Derivatives	Total
Mortgage securitizations [4]						
U.S. agency-sponsored	$ 79,443	$ —	$ 79,443	$ 1,413	$ —	$ 1,413
Non-agency-sponsored	36,075	—	36,075	614	—	614
Asset-based financing	2,789	2,310	479	22	—	22
Other	2,040	—	2,040	47	13	60
Total	$ 120,347	$ 2,310	$ 118,037	$ 2,096	$ 13	$ 2,109

(1) The definition of maximum exposure to loss is included in the text that follows this table.

(2) A significant unconsolidated VIE is an entity in which the Company has any variable interest or continuing involvement considered to be significant, regardless of the likelihood of loss.

(3) Funded exposures that are included on the Company's June 30, 2023 and December 31, 2022 Consolidated Statement of Financial Condition in *Trading account assets*.

(4) CGMHI mortgage securitizations also include agency and non-agency (private-label) re-securitization activities. These SPEs are not consolidated. See "Re-securitizations" below for further discussion.

The previous tables do not include:

- certain VIEs structured by third parties in which the Company holds securities in inventory, as these investments are made on arm's-length terms;
- certain positions in mortgage- and asset-backed securities held by the Company, which are classified as *Trading account assets,* in which the Company has no other involvement with the related securitization entity deemed to be significant (see Note 8 for more information on these positions); and
- certain representations and warranties exposures in CGMHI residential mortgage securitizations, in which the original mortgage loan balances are no longer outstanding.

The asset balances for consolidated VIEs represent the carrying amounts of the assets consolidated by the Company. The asset balances for unconsolidated VIEs in which the Company has significant involvement represent the most current information available to the Company. In most cases, the asset balances represent an amortized cost basis without regard to impairments, unless fair value information is readily available to the Company.

The maximum loss exposure represents the balance sheet carrying amount of the Company's investment in the VIE. It reflects the initial amount of cash invested in the VIE, adjusted for any accrued interest and cash principal payments received. The carrying amount may also be adjusted for increases or declines in fair value or any impairment in value recognized in earnings. The maximum exposure of unfunded positions represents the notional amount of a derivative instrument considered to be a variable interest. In certain transactions, the Company has entered into derivative instruments or other arrangements that are not considered variable interests in the VIE (e.g., interest rate swaps, cross-currency swaps or where the Company is the purchaser of credit protection under a credit default swap or total return swap where the Company pays the total return on certain assets to the SPE). Receivables under such arrangements are not included in the maximum exposure amounts.

Mortgage Securitizations

CGMHI's mortgage securitizations represent government-sponsored agency and private label (non-agency-sponsored mortgages) re-securitization activities. These SPEs are not consolidated. See "Re-securitizations" below for further discussion. CGMHI's mortgage securitizations are primarily non-recourse, thereby effectively transferring the risk of future credit losses to the purchasers of the securities issued by the SPE.

The following table includes information about loan delinquencies and liquidation losses for assets held in non-consolidated, non-agency-sponsored securitization entities:

	Securitized assets		90 days past due		Liquidation losses	
					Six Months Ended June 30,	
In millions of dollars	Jun. 30, 2023	Dec. 31, 2022	Jun. 30, 2023	Dec. 31, 2022	2023	2022
Residential mortgages	$ 326	$ 1,479	$ —	$ 9	$ —	$ —

Re-securitizations

The Company engages in re-securitization transactions in which debt securities are transferred to a VIE in exchange for new beneficial interests. CGMHI did not transfer non-agency (private label) securities to re-securitization entities during the six months ended June 30, 2023 and 2022. These securities are backed by either residential or commercial mortgages and are often structured on behalf of clients.

As of June 30, 2023 and December 31, 2022, CGMHI held no retained interests in private label re-securitization transactions structured by CGMHI.

The Company also re-securitizes U.S. government-agency-guaranteed mortgage-backed (agency) securities. During the six months ended June 30, 2023 and 2022, CGMHI transferred agency securities with a fair value of approximately $8.6 billion and $14.9 billion, respectively, to re-securitization entities.

As of June 30, 2023, the fair value of CGMHI-retained interests in agency re-securitization transactions structured by CGMHI totaled approximately $1.4 billion (including $402 million related to re-securitization transactions executed in 2023), compared to $1.4 billion as of December 31, 2022 (including $801 million related to re-securitization transactions executed in 2022), which is recorded in *Trading account assets*. The original fair values of agency re-securitization transactions in which CGMHI holds a retained interest as of June 30, 2023 and December 31, 2022 were approximately $86.8 billion and $79.4 billion, respectively.

As of June 30, 2023 and December 31, 2022, the Company did not consolidate any private label or agency re-securitization entities.

Asset-Based Financing

The Company provides financing to VIEs that primarily hold non-marketable equity securities and derivative transactions. These instruments are reported in *Trading account assets* and are accounted for at fair value through earnings. The Company consolidates VIEs when it has the power to direct the activities that most significantly impact a VIE's economic performance. For CGMHI to realize the maximum loss in these VIEs, the issuer of the equity securities held by the VIE and the derivative counterparties would have to default with no recovery.

7. DERIVATIVES

In the ordinary course of business, the Company enters into various types of derivative transactions. All derivatives are recorded in *Trading account assets/Trading account liabilities* on the Consolidated Statement of Financial Condition. For additional information regarding the Company's use of and accounting for derivatives, see Note 9 to the Consolidated Financial Statements in CGMHI's 2022 Audited Financial Statements.

Information pertaining to the Company's derivatives activities, based on notional amounts, is presented in the following table. Derivative notional amounts are reference amounts from which contractual payments are derived and do not represent a complete measure of CGMHI's exposure to derivative transactions. CGMHI's derivative exposure arises primarily from market fluctuations (i.e., market risk), counterparty failure (i.e., credit risk) and/or periods of high volatility or financial stress (i.e., liquidity risk), as well as any market valuation adjustments that may be required on the transactions. Moreover, notional amounts do not reflect the netting of offsetting trades. For example, if CGMHI enters into a receive-fixed interest rate swap with $100 million notional, and offsets this risk with an identical but opposite pay-fixed position with a different counterparty, $200 million in derivative notionals is reported, although these offsetting positions may result in de minimis overall market risk.

In addition, aggregate derivative notional amounts can fluctuate from period to period in the normal course of business based on CGMHI's market share, levels of client activity and other factors.

Derivative Notionals

	Hedging instruments under ASC 815		Trading derivative instruments	
In millions of dollars	June 30, 2023	December 31, 2022	June 30, 2023	December 31, 2022
Interest rate contracts				
Swaps	$ 208	$ 221	$ 9,313,667	$ 6,277,113
Futures and forwards	—	—	1,325,686	1,534,090
Written options	—	—	465,737	374,727
Purchased options	—	—	436,578	352,454
Total interest rate contracts	208	221	11,541,668	8,538,384
Foreign exchange contracts				
Swaps	—	—	951,793	831,581
Futures, forwards and spot	—	—	271,212	205,335
Written options	—	—	74,310	83,869
Purchased options	—	—	75,916	85,845
Total foreign exchange contracts	—	—	1,373,231	1,206,630
Equity contracts				
Swaps	—	—	225,593	201,074
Futures and forwards	—	—	72,743	66,517
Written options	—	—	754,145	685,359
Purchased options	—	—	661,389	591,319
Total equity contracts	—	—	1,713,870	1,544,269
Commodity and other contracts				
Swaps	—	—	78,444	82,557
Futures and forwards	1,586	1,365	64,827	75,408
Written options	—	—	11,715	9,239
Purchased options	—	—	11,250	8,869
Total commodity and other contracts	1,586	1,365	166,236	176,073
Credit derivatives (1)				
Protection sold	—	—	898,371	923,371
Protection purchased	—	—	906,401	927,779
Total credit derivatives	—	—	1,804,772	1,851,150
Total derivative notionals	$ 1,794	$ 1,586	$ 16,599,777	$ 13,316,506

(1) Credit derivatives are arrangements designed to allow one party (protection purchaser) to transfer the credit risk of a "reference asset" to another party (protection seller). These arrangements allow a protection seller to assume the credit risk associated with the reference asset without directly purchasing that asset. The Company enters into credit derivative positions for purposes such as risk management, yield enhancement, reduction of credit concentrations and diversification of overall risk.

The following table presents the gross and net fair values of the Company's derivative transactions and the related offsetting amounts as of June 30, 2023 and December 31, 2022. Gross positive fair values are offset against gross negative fair values by counterparty, pursuant to enforceable master netting agreements. Under ASC 815-10-45, payables and receivables in respect of cash collateral received from or paid to a given counterparty pursuant to a credit support annex are included in the offsetting amount if a legal opinion supporting the enforceability of netting and collateral rights has been obtained. GAAP does not permit similar offsetting for security collateral.

In addition, the following table reflects rule changes adopted by clearing organizations that require or allow entities to treat certain derivative assets, liabilities and the related variation margin as settlement of the related derivative fair values for legal and accounting purposes, as opposed to presenting gross derivative assets and liabilities that are subject to collateral, whereby the counterparties would also record a related collateral payable or receivable. The table also presents amounts that are not permitted to be offset, such as security collateral or cash collateral posted at third-party custodians, but which would be eligible for offsetting to the extent that an event of default has occurred and a legal opinion supporting enforceability of the netting and collateral rights has been obtained.

Derivative Mark-to-Market (MTM) Receivables/Payables

	Derivatives classified in Trading account assets / liabilities (1) (2)			
	June 30, 2023		December 31, 2022	
In millions of dollars	Assets	Liabilities	Assets	Liabilities
Interest rate derivatives instruments designated as ASC 815 hedges	$ 7	$ —	$ 9	$ —
Derivatives instruments not designated as ASC 815 hedges				
Over-the-counter	152,256	150,797	148,156	144,592
Cleared	3,755	3,683	2,922	4,545
Exchange traded	93	106	13	14
Interest rate contracts	156,104	154,586	151,091	149,151
Over-the-counter	22,291	24,555	26,953	30,137
Foreign exchange contracts	22,291	24,555	26,953	30,137
Over-the-counter	22,873	26,324	20,174	24,576
Cleared	37	4	1	4
Exchange traded	23,941	23,606	22,068	21,383
Equity contracts	46,851	49,934	42,243	45,963
Over-the-counter	13,909	15,715	22,038	23,200
Exchange traded	87	126	119	179
Commodity and other contracts	13,996	15,841	22,157	23,379
Over-the-counter	12,716	12,823	12,848	12,430
Cleared	4,119	3,927	1,417	1,565
Credit derivatives	16,835	16,750	14,265	13,995
Total derivatives instruments not designated as ASC 815 hedges	256,077	261,666	256,709	262,625
Total derivatives	256,084	261,666	256,718	262,625
Less: Netting agreements (3)	(221,129)	(221,129)	(220,397)	(220,397)
Less: Netting cash collateral received/paid (4)	(9,813)	(18,702)	(6,495)	(17,413)
Net receivables / payables included on the Consolidated Statement of Financial Condition	$ 25,142	$ 21,835	$ 29,826	$ 24,815
Additional amounts subject to an enforceable master netting agreement, but not offset on the Consolidated Statement of Financial Condition				
Less: Cash collateral received/paid	(51)	(2)	(89)	(3)
Less: Non-cash collateral received/paid	(1,163)	(916)	(1,332)	(1,000)
Total net receivables/payables	$ 23,928	$ 20,917	$ 28,405	$ 23,812

(1) The derivatives fair values are also presented in Note 8.

(2) Over-the-counter (OTC) derivatives are derivatives executed and settled bilaterally with counterparties without the use of an organized exchange or central clearing house. Cleared derivatives include derivatives executed bilaterally with a counterparty in the OTC market, but then novated to a central clearing house, whereby the central clearing house becomes the counterparty to both of the original counterparties. Exchange-traded derivatives include derivatives executed directly on an organized exchange that provides pre-trade price transparency.

(3) Represents the netting of derivative receivable and payable balances with the same counterparty under enforceable netting agreements.

(4) Represents the netting of cash collateral paid and received by counterparties under enforceable credit support agreements. Substantially all netting of cash collateral received and paid is against OTC derivative assets and liabilities, respectively.

For the six months ended June 30, 2023 and 2022, amounts recognized in *Principal transactions* in the Consolidated Statement of Income include certain derivatives not designated in a qualifying hedging relationship. The Company presents this disclosure by business classification, showing derivative gains and losses related to its trading activities together with gains and losses related to non-derivative instruments within the same trading portfolios, as this represents how these portfolios are risk managed. See Note 2 for further information.

Fair Value Hedges

For additional information regarding CGMHI's fair value hedges, see Note 9 to the Consolidated Financial Statements in CGMHI's 2022 Audited Financial Statements.

The following table summarizes the gains (losses) on the Company's fair value hedges:

	Gains / (losses) on fair value hedges Six Months Ended June 30,			
	2023		2022	
In millions of dollars	Principal transactions	Interest expense	Principal transactions	Interest expense
Gain (loss) on the hedging derivatives included in assessment of the effectiveness of fair value hedges:				
Interest rate hedges	$ —	$ (2)	$ —	$ (6)
Commodity hedges	(25)	—	348	—
Total gain (loss) on the hedging derivatives included in assessment of the effectiveness of fair value hedges	(25)	(2)	348	(6)
Gain (loss) on the hedged item in designated and qualifying fair value hedges:				
Interest rate hedges	—	2	—	6
Commodity hedges	25	—	(348)	—
Total gain (loss) on the hedged item in designated and qualifying fair value hedges	25	2	(348)	6
Net loss on the hedging derivatives excluded from assessment of the effectiveness of fair value hedges:				
Interest rate hedges	—	—	—	—
Commodity hedges (1)	27	—	(3)	—
Total net loss on the hedging derivatives excluded from assessment of the effectiveness of fair value hedges	$ 27	$ —	$ (3)	$ —

(1) Amounts related to the forward points (i.e., the spot-forward difference) that are excluded from the assessment of hedge effectiveness reflected directly in earnings under the mark-to-market approach or recorded in *AOCI* under the amortization approach. The six months ended June 30, 2023 and 2022 includes gains (losses) of approximately $21 million and $(2) million under the mark-to-market approach, and approximately $6 million and $(1) million under the amortization approach, respectively.

Cumulative Basis Adjustment

Upon electing to apply ASC 815 fair value hedge accounting, the carrying value of the hedged item is adjusted to reflect the cumulative changes in the hedged risk. This cumulative basis adjustment becomes part of the carrying amount of the hedged item until the hedged item is derecognized from the balance sheet. The following table presents the carrying amount of CGMHI's hedged assets and liabilities under qualifying fair value hedges at June 30, 2023 and December 31, 2022, along with the cumulative basis adjustments included in the carrying value of those hedged assets and liabilities that would reverse through earnings in future periods.

In millions of dollars			
Balance sheet line item in which hedged item is recorded	Carrying amount of hedged asset/ liability	Cumulative fair value hedging adjustment increasing the carrying amount	
		Active	De-designated
As of June 30, 2023			
Trading account assets	$ 384	$ 77	$ —
Long-term debt	215	7	—
As of December 31, 2022			
Trading account assets	$ 361	$ 44	$ —
Long-term debt	236	9	—

Credit Derivatives

The following tables summarize the key characteristics of the Company's credit derivatives portfolio by counterparty and derivative form:

	Fair values		Notionals	
In millions of dollars at June 30, 2023	**Receivable**	**Payable**	**Protection purchased**	**Protection sold**
By instrument:				
Credit default swaps and options	16,319	16,269	895,708	892,658
Total return swaps and other	516	481	10,693	5,713
Total by instrument	16,835	16,750	906,401	898,371
By rating of reference entity:				
Investment grade	7,089	6,934	615,535	598,200
Non-investment grade	9,746	9,816	290,866	300,171
Total by rating of reference entity	16,835	16,750	906,401	898,371
By maturity:				
Within 1 year	1,294	1,672	149,317	143,818
From 1 to 5 years	13,437	12,971	702,831	709,973
After 5 years	2,104	2,107	54,253	44,580
Total by maturity	$ 16,835	$ 16,750	$ 906,401	$ 898,371

	Fair values		Notionals	
In millions of dollars at December 31, 2022	**Receivable**	**Payable**	**Protection purchased**	**Protection sold**
By instrument:				
Credit default swaps and options	13,274	13,493	918,778	917,245
Total return swaps and other	991	502	9,001	6,126
Total by instrument	14,265	13,995	927,779	923,371
By rating of reference entity:				
Investment grade	5,117	4,833	549,824	534,918
Non-investment grade	9,148	9,162	377,955	388,453
Total by rating of reference entity	14,265	13,995	927,779	923,371
By maturity:				
Within 1 year	1,577	1,619	121,691	123,940
From 1 to 5 years	10,558	10,362	746,819	750,009
After 5 years	2,130	2,014	59,269	49,422
Total by maturity	$ 14,265	$ 13,995	$ 927,779	$ 923,371

Credit Risk-Related Contingent Features in Derivatives
Certain derivative instruments contain provisions that require the Company to either post additional collateral or immediately settle any outstanding liability balances upon the occurrence of a specified event related to the credit risk of the Company. These events, which are defined by the existing derivative contracts, are primarily downgrades in the credit ratings of the Company and its affiliates.

The fair value (excluding CVA) of all derivative instruments with credit risk-related contingent features that were in a net liability position at June 30, 2023 and December 31, 2022 was $3.3 billion and $4.6 billion, respectively. The Company posted $2.8 billion and $3.9 billion as collateral for this exposure in the normal course of business as of June 30, 2023 and December 31, 2022, respectively.

A downgrade could trigger additional collateral or cash settlement requirements for the Company and certain affiliates. In the event that CGMHI was downgraded a single notch by all three major rating agencies as of June 30, 2023, the Company could be required to post an additional $410 million as either collateral or settlement of the derivative transactions. In addition, the Company could be required to segregate with third-party custodians collateral previously received from existing derivative counterparties in the amount of $16 million upon the single notch downgrade, resulting in aggregate cash obligations and collateral requirements of approximately $426 million.

Derivatives Accompanied by Financial Asset Transfers
For transfers of financial assets accounted for as a sale by the Company, and for which the Company has retained substantially all of the economic exposure to the transferred asset through a total return swap executed with the same counterparty in contemplation of the initial sale (and still outstanding), the asset amounts derecognized and the gross cash proceeds received as of the date of derecognition were $2.4 billion and $1.2 billion as of June 30, 2023 and December 31, 2022, respectively.

At June 30, 2023, the fair value of these previously derecognized assets was $2.4 billion. The fair value of the total return swaps as of June 30, 2023 was $31 million recorded as gross derivative assets and $21 million recorded as gross derivative liabilities. At December 31, 2022, the fair value of these previously derecognized assets was $1.2 billion. The fair value of the total return swaps as of December 31, 2022 was $25 million recorded as gross derivative assets and $31 million recorded as gross derivative liabilities.

The balances for the total return swaps are on a gross basis, before the application of counterparty and cash collateral netting, and are included primarily as equity derivatives in the tabular disclosures in this Note.

8. FAIR VALUE MEASUREMENT

For additional information regarding fair value measurement at CGMHI, see Note 11 to the Consolidated Financial Statements in CGMHI's 2022 Audited Financial Statements.

Fair Value Hierarchy
ASC 820-10 specifies a hierarchy of inputs based on whether the inputs are observable or unobservable. Observable inputs are developed using market data and reflect market participant assumptions, while unobservable inputs reflect the Company's market assumptions. These two types of inputs have created the following fair value hierarchy:

- Level 1: Quoted prices for *identical* instruments in active markets.
- Level 2: Quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active and model-derived valuations in which all significant inputs and significant value drivers are *observable* in the market.
- Level 3: Valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are *unobservable*.

As required under the fair value hierarchy, the Company considers relevant and observable market inputs in its valuations where possible. The fair value hierarchy classification approach typically utilizes rules-based and data-driven selection criteria to determine whether an instrument is classified as Level 1, Level 2 or Level 3:

- The determination of whether an instrument is quoted in an active market and therefore considered a Level 1 instrument is based upon the frequency of observed transactions and the quality of independent market data available on the measurement date.
- A Level 2 classification is assigned where there is observability of prices/market inputs to models, or where any unobservable inputs are not significant to the valuation. The determination of whether an input is considered

observable is based on the availability of independent market data and its corroboration, for example through observed transactions in the market.

- Otherwise, an instrument is classified as Level 3.

Market Valuation Adjustments

The table below summarizes the CVA and FVA applied to the fair value of derivative instruments at June 30, 2023 and December 31, 2022:

	Credit and funding valuation adjustments contra-liability (contra-asset)	
In millions of dollars	June 30, 2023	December 31, 2022
Counterparty CVA	$ (208)	$ (286)
Asset FVA	(95)	(123)
CGMHI (own credit) CVA [(1)]	200	262
Liability FVA	69	76
Total CVA and FVA — derivative instruments	$ (34)	$ (71)

(1) Determined using Citi-specific CDS spreads.

The table below summarizes pretax gains (losses) related to changes in CVA on derivative instruments, net of hedges, FVA on derivatives and debt valuation adjustments (DVA) on the Company's own fair value option (FVO) liabilities for the years indicated:

	Credit/funding/debt valuation adjustments gain (loss)	
	Six Months Ended June 30,	
In millions of dollars	2023	2022
Counterparty CVA	$ (1)	$ 1
Asset FVA	27	(47)
Own credit CVA [(1)]	(89)	124
Liability FVA	(6)	11
Total CVA and FVA—derivative instruments	(69)	89
DVA related to own FVO liabilities	(628)	2,090
Total CVA, DVA and FVA	$ (697)	$ 2,179

(1) Determined using Citi-specific CDS spreads.

Items Measured at Fair Value on a Recurring Basis

The following tables present for each of the fair value hierarchy levels the Company's assets and liabilities that are measured at fair value on a recurring basis at June 30, 2023 and December 31, 2022.. The Company may hedge positions that have been classified in the Level 3 category with other financial instruments (hedging instruments) that may be classified as Level 3, but also with financial instruments classified as Level 1 or Level 2. The effects of these hedges are presented gross in the following tables:

Fair Value Levels

In millions of dollars at June 30, 2023	Level 1	Level 2	Level 3	Gross inventory	Netting (1)	Net balance
Assets						
Securities borrowed and purchased under agreements to resell	$ —	$ 399,753	$ 50	$ 399,803	$ (206,359)	$ 193,444
Trading non-derivative assets						
Trading mortgage-backed securities						
U.S. government-sponsored agency guaranteed	—	55,300	658	55,958	—	55,958
Residential	—	2,935	145	3,080	—	3,080
Commercial	—	784	182	966	—	966
Total trading mortgage-backed securities	—	59,019	985	60,004	—	60,004
U.S. Treasury and federal agency securities	66,002	2,248	—	68,250	—	68,250
State and municipal securities	—	1,940	3	1,943	—	1,943
Foreign government securities	34,063	7,402	80	41,545	—	41,545
Corporate	843	17,554	861	19,258	—	19,258
Equity securities	45,927	4,271	246	50,444	—	50,444
Asset-backed securities	—	1,560	539	2,099	—	2,099
Other trading assets (2)	5	2,168	654	2,827	—	2,827
Total trading non-derivative assets	146,840	96,162	3,368	246,370	—	246,370
Trading derivatives						
Interest rate contracts	18	155,301	792	156,111		
Foreign exchange contracts	—	22,054	237	22,291		
Equity contracts	34	45,461	1,356	46,851		
Commodity contracts	—	12,971	1,025	13,996		
Credit derivatives	—	16,110	725	16,835		
Total trading derivatives—before netting and collateral	52	251,897	4,135	256,084		
Netting agreements					(221,129)	
Netting of cash collateral received					(9,813)	
Total trading derivatives—after netting and collateral	52	251,897	4,135	256,084	(230,942)	25,142
Investments - Non-marketable equity securities	1	6	224	231	—	231
Other financial assets measured on a recurring basis	4,712	2,050	115	6,877	—	6,877
Total assets	$ 151,605	$ 749,868	$ 7,892	$ 909,365	$ (437,301)	$ 472,064
Total as a percentage of gross assets (3)	16.7%	82.4%	0.9%			

Table continues on the next page.

Fair Value Levels

In millions of dollars at June 30, 2023	Level 1	Level 2	Level 3	Gross inventory	Netting (1)	Net balance
Liabilities						
Securities loaned and sold under agreements to repurchase	$ —	$ 197,454	$ 627	$ 198,081	$ (139,803)	$ 58,278
Trading non-derivative liabilities						
Securities sold, not yet purchased	82,312	10,669	58	93,039	—	93,039
Trading derivatives						
Interest rate contracts	17	152,419	2,150	154,586		
Foreign exchange contracts	—	23,344	1,211	24,555		
Equity contracts	27	47,005	2,902	49,934		
Commodity contracts	—	15,236	605	15,841		
Credit derivatives	—	16,045	705	16,750		
Total trading derivatives—before netting and collateral	44	254,049	7,573	261,666		
Netting agreements					(221,129)	
Netting of cash collateral paid					(18,702)	
Total trading derivatives—after netting and collateral	44	254,049	7,573	261,666	(239,831)	21,835
Brokerage payables	5,793	117	2	5,912	—	5,912
Short-term borrowings	—	4,731	296	5,027	—	5,027
Long-term debt	—	72,697	21,944	94,641	—	94,641
Total liabilities	$ 88,149	$ 539,717	$ 30,500	$ 658,366	$ (379,634)	$ 278,732
Total as a percentage of gross liabilities (3)	13.4%	82.0%	4.6%			

(1) Represents netting of (i) the amounts due under securities purchased under agreements to resell and the amounts owed under securities sold under agreements to repurchase and (ii) derivative exposures covered by a qualifying master netting agreement and cash collateral offsetting.
(2) Includes physical commodities accounted for at the lower of cost or fair value.
(3) Because the amount of the cash collateral paid/received has not been allocated to the Level 1, 2 and 3 subtotals, these percentages are calculated based on total assets and liabilities measured at fair value on a recurring basis, excluding the cash collateral paid/received on derivatives.

Fair Value Levels

In millions of dollars at December 31, 2022	Level 1	Level 2	Level 3	Gross inventory	Netting [1]	Net balance
Assets						
Securities borrowed and purchased under agreements to resell	$ —	$ 328,608	$ 51	$ 328,659	$ (106,525)	$ 222,134
Trading non-derivative assets						
Trading mortgage-backed securities						
U.S. government-sponsored agency guaranteed	—	34,878	599	35,477	—	35,477
Residential	—	1,821	166	1,987	—	1,987
Commercial	—	798	145	943	—	943
Total trading mortgage-backed securities	—	37,497	910	38,407	—	38,407
U.S. Treasury and federal agency securities	46,896	2,312	1	49,209	—	49,209
State and municipal securities	—	2,103	7	2,110	—	2,110
Foreign government securities	21,624	5,193	47	26,864	—	26,864
Corporate	989	14,940	625	16,554	—	16,554
Equity securities	38,102	3,710	156	41,968	—	41,968
Asset-backed securities	—	1,597	668	2,265	—	2,265
Other trading assets [2]	24	2,505	224	2,753	—	2,753
Total trading non-derivative assets	107,635	69,857	2,638	180,130	—	180,130
Trading derivatives						
Interest rate contracts	63	149,976	1,061	151,100		
Foreign exchange contracts	—	26,756	197	26,953		
Equity contracts	15	40,558	1,670	42,243		
Commodity contracts	—	20,831	1,326	22,157		
Credit derivatives	—	13,610	655	14,265		
Total trading derivatives—before netting and collateral	78	251,731	4,909	256,718		
Netting agreements					(220,397)	
Netting of cash collateral received					(6,495)	
Total trading derivatives—after netting and collateral	78	251,731	4,909	256,718	(226,892)	29,826
Investments - Non-marketable equity securities	—	7	227	234	—	234
Other financial assets measured on a recurring basis	3,536	1,344	715	5,595	—	5,595
Total assets	$ 111,249	$ 651,547	$ 8,540	$ 771,336	$ (333,417)	$ 437,919
Total as a percentage of gross assets [3]	14.4%	84.5%	1.1%			

Table continues on the next page.

Fair Value Levels

In millions of dollars at December 31, 2022	Level 1	Level 2	Level 3	Gross inventory	Netting [1]	Net balance
Liabilities						
Securities loaned and sold under agreements to repurchase	$ —	$ 147,082	$ 1,031	$ 148,113	$ (81,724)	$ 66,389
Trading non-derivative liabilities						
Securities sold, not yet purchased	81,860	9,225	29	91,114	—	91,114
Trading derivatives						
Interest rate contracts	93	146,682	2,376	149,151		
Foreign exchange contracts	—	28,958	1,179	30,137		
Equity contracts	14	42,893	3,056	45,963		
Commodity contracts	1	22,623	755	23,379		
Credit derivatives	—	13,332	663	13,995		
Total trading derivatives—before netting and collateral	108	254,488	8,029	262,625		
Netting agreements					(220,397)	
Netting of cash collateral paid					(17,413)	
Total trading derivatives—after netting and collateral	108	254,488	8,029	262,625	(237,810)	24,815
Brokerage payables	4,197	240	2	4,439	—	4,439
Short-term borrowings	—	5,298	38	5,336	—	5,336
Long-term debt	—	65,776	22,089	87,865	—	87,865
Total liabilities	$ 86,165	$ 482,109	$ 31,218	$ 599,492	$ (319,534)	$ 279,958
Total as a percentage of gross liabilities [3]	14.4%	80.4%	5.2%			

(1) Represents netting of (i) the amounts due under securities purchased under agreements to resell and the amounts owed under securities sold under agreements to repurchase and (ii) derivative exposures covered by a qualifying master netting agreement and cash collateral offsetting.
(2) Includes physical commodities accounted for at the lower of cost or fair value.
(3) Because the amount of the cash collateral paid/received has not been allocated to the Level 1, 2 and 3 subtotals, these percentages are calculated based on total assets and liabilities measured at fair value on a recurring basis, excluding the cash collateral paid/received on derivatives.

Changes in Level 3 Fair Value Category

The following tables present the changes in the Level 3 fair value category for the six months ended June 30, 2023 and 2022. The gains and losses presented below include changes in the fair value related to both observable and unobservable inputs.

The Company often hedges positions with offsetting positions that are classified in a different level. For example, the gains and losses for assets and liabilities in the Level 3 category presented in the tables below do not reflect the effect of offsetting losses and gains on hedging instruments that may be classified in the Level 1 and Level 2 categories. In addition, the Company hedges items classified in the Level 3 category with instruments also classified in Level 3 of the fair value hierarchy. The hedged items and related hedges are presented gross in the following tables.

Level 3 Fair Value Rollforward

In millions of dollars	Dec. 31, 2022	Net realized/unrealized gains (losses) incl. in (1) Principal transactions	Other	Transfers into Level 3	Transfers out of Level 3	Purchases	Issuances	Sales	Settlements	Jun. 30, 2023	Unrealized gains (losses) still held (2)
Assets											
Securities borrowed and purchased under agreements to resell	$ 51	$ 4	$ —	$ —	$ (2)	$ 49	$ —	$ —	$ (52)	$ 50	$ 4
Trading non-derivative assets											
Trading mortgage-backed securities											
U.S. government-sponsored agency guaranteed	599	(10)	—	185	(266)	370	—	(220)	—	658	(35)
Residential	166	(2)	—	63	(62)	101	—	(121)	—	145	—
Commercial	145	(14)	—	103	(31)	50	—	(71)	—	182	(13)
Total trading mortgage-backed securities	910	(26)	—	351	(359)	521	—	(412)	—	985	(48)
U.S. Treasury and federal agency securities	1	(1)	—	—	—	—	—	—	—	—	—
State and municipal	7	(3)	—	19	—	—	—	(20)	—	3	—
Foreign government	47	4	—	8	(2)	54	—	(31)	—	80	5
Corporate	625	86	—	207	(155)	487	—	(389)	—	861	107
Equity securities	156	10	—	24	(7)	94	—	(31)	—	246	9
Asset-backed securities	668	14	—	79	(81)	318	—	(459)	—	539	—
Other trading assets	224	232	—	230	(17)	66	—	(81)	—	654	248
Total trading non-derivative assets	2,638	316	—	918	(621)	1,540	—	(1,423)	—	3,368	321
Investments in non-marketable equity securities	227	—	13	—	—	4	—	(20)	—	224	24
Other financial assets measured on a recurring basis	715	—	(256)	—	(183)	4	—	(1)	(164)	115	(21)
Liabilities											
Securities loaned and sold under agreements to repurchase	$ 1,031	$ (6)	$ —	$ —	$ (24)	$1,335	$ —	$ —	$(1,721)	$ 627	$ —
Trading account liabilities											
Securities sold, not yet purchased	29	1	—	9	(16)	58	—	—	(21)	58	1
Derivatives, net (3)											
Interest rate contracts	1,315	(124)	—	10	(41)	(35)	—	(13)	(2)	1,358	(157)
Foreign exchange contracts	982	(9)	—	31	(13)	—	—	—	(35)	974	(179)
Equity contracts	1,386	(199)	—	112	(169)	(92)	—	99	11	1,546	(348)
Commodity contracts	(571)	234	—	(144)	273	29	—	8	219	(420)	(39)
Credit derivatives	8	(18)	—	(30)	(13)	(1)	—	—	(2)	(20)	(43)
Total derivatives, net (3)	3,120	(116)	—	(21)	37	(99)	—	94	191	3,438	(766)
Brokerage payables	2	—	—	2	(2)	—	—	—	—	2	—
Short-term borrowings	38	40	—	19	(16)	—	297	—	(2)	296	(9)
Long-term debt	22,089	340	—	2,277	(4,394)	—	2,882	—	(570)	21,944	393

(1) Net realized/unrealized gains (losses) are presented as increase (decrease) to Level 3 assets, and as (increase) decrease to Level 3 liabilities.
(2) Represents the amount of total gains or losses for the period, included in earnings (and DVA on fair value option liabilities), attributable to the change in fair value relating to assets and liabilities classified as Level 3 that are still held at June 30, 2023.
(3) Total Level 3 derivative assets and liabilities have been netted in these tables for presentation purposes only.

Level 3 Fair Value Rollforward

In millions of dollars	Dec. 31, 2021	Net realized/unrealized gains (losses) incl. in (1) Principal transactions	Other	Transfers into Level 3	Transfers out of Level 3	Purchases	Issuances	Sales	Settlements	Jun. 30, 2022	Unrealized gains (losses) still held (2)
Assets											
Securities borrowed and purchased under agreements to resell	$ 92	$ (1)	$ —	$ —	$ —	$ 124	$ —	$ —	$ (131)	$ 84	$ 4
Trading non-derivative assets											
Trading mortgage-backed securities											
U.S. government-sponsored agency guaranteed	496	(14)	—	126	(158)	484	—	(227)	—	707	(21)
Residential	103	—	—	61	(32)	85	—	(64)	—	153	(3)
Commercial	81	(5)	—	97	(34)	9	—	(10)	—	138	(2)
Total trading mortgage-backed securities	680	(19)	—	284	(224)	578	—	(301)	—	998	(26)
U.S. Treasury and federal agency securities	5	(5)	—	2	(1)	—	—	—	—	1	—
State and municipal	35	5	—	24	(20)	2	—	(14)	—	32	—
Foreign government	23	(8)	—	40	(1)	65	—	(16)	—	103	(18)
Corporate	838	(33)	—	243	(336)	1,202	—	(1,198)	—	716	(45)
Equity securities	120	(2)	—	63	(48)	107	—	(100)	—	140	(39)
Asset-backed securities	563	(21)	—	140	(127)	393	—	(394)	—	554	(45)
Other trading assets	238	64	—	170	(1)	122	—	(184)	—	409	54
Total trading non-derivative assets	2,502	(19)	—	966	(758)	2,469	—	(2,207)	—	2,953	(119)
Securities received as collateral	—	—	—	7	(2)	14	—	—	—	19	—
Investments in non-marketable equity securities	191	—	(7)	—	—	21	—	(9)	—	196	—
Other financial assets measured on a recurring basis	257	—	33	1	(19)	—	1	—	—	273	169
Liabilities											
Securities loaned and sold under agreements to repurchase	$ 643	$ 50	$ —	$ —	$ (3)	$ 16	$ —	$ —	$ (13)	$ 593	$ 28
Trading account liabilities											
Securities sold, not yet purchased	64	(1)	—	28	(16)	59	—	(4)	(65)	67	2
Derivatives, net (3)											
Interest rate contracts	242	(926)	—	(5)	(50)	(10)	—	6	(11)	1,098	(909)
Foreign exchange contracts	458	(554)	—	14	12	—	—	—	(150)	888	(570)
Equity contracts	895	(1,790)	—	130	(784)	(393)	—	315	222	2,175	(1,880)
Commodity contracts	(465)	635	—	2	379	(26)	—	24	206	(515)	445
Credit derivatives	(109)	(86)	—	37	(4)	—	—	1	36	47	(17)
Total derivatives, net (3)	1,021	(2,721)	—	178	(447)	(429)	—	346	303	3,693	(2,931)
Obligations to return securities received as collateral	—	—	—	7	(2)	14	—	—	—	19	—
Short-term borrowings	105	89	—	41	(22)	—	77	—	(31)	81	1
Long-term debt	12,279	3,558	—	3,482	(2,824)	—	6,316	—	(252)	15,443	(3,018)

(1) Net realized/unrealized gains (losses) are presented as increase (decrease) to Level 3 assets, and as (increase) decrease to Level 3 liabilities.
(2) Represents the amount of total gains or losses for the period, included in earnings, attributable to the change in fair value relating to assets and liabilities classified as Level 3 that are still held at June 30, 2022.
(3) Total Level 3 derivative assets and liabilities have been netted in these tables for presentation purposes only.

Level 3 Fair Value Transfers

The following were the significant Level 3 transfers for the period December 31, 2022 to June 30, 2023:

- During the six months ended June 30, 2023, transfers of *Long-term debt* were \$2.3 billion from Level 2 to Level 3. Of the \$2.3 billion transfer, approximately \$1.9 billion related to interest rate option volatility inputs becoming unobservable and/or significant relative to their overall valuation, and \$0.4 billion related to equity and credit derivative inputs (in addition to other volatility inputs, e.g., interest rate volatility inputs) becoming unobservable and/or significant to their overall valuation. In other instances, market changes have resulted in some inputs becoming more observable, and some unobservable inputs becoming less significant to the overall valuation of the instruments (e.g., when an option becomes deep-in or deep-out of the money). This has primarily resulted in \$4.4 billion of certain structured long-term debt products being transferred from Level 3 to Level 2 during the six months ended June 30, 2023.

The following were the significant Level 3 transfers for the period December 31, 2021 to June 30, 2022:

- During the six months ended June 30, 2022, transfers of *Long-term debt* were \$3.5 billion from Level 2 to Level 3. Of the \$3.5 billion transfer in the six months ended June 30, 2022, approximately \$2.3 billion related to interest rate option volatility inputs becoming unobservable and/or significant relative to their overall valuation, and \$1.2 billion related to equity and credit derivative inputs (in addition to other volatility inputs, e.g., interest rate volatility inputs) becoming unobservable and/or significant to their overall valuation. In other instances, market changes have resulted in some inputs becoming more observable, and some unobservable inputs becoming less significant to the overall valuation of the instruments (e.g., when an option becomes deep-in or deep-out of the money). This has primarily resulted in \$2.8 billion of certain structured long-term debt products being transferred from Level 3 to Level 2 during the six months ended June 30, 2022.

Valuation Techniques and Inputs for Level 3 Fair Value Measurements

The following tables present the valuation techniques covering the majority of Level 3 inventory and the most significant unobservable inputs used in Level 3 fair value measurements. Differences between this table and amounts presented in the Level 3 Fair Value Rollforward table above represent individually immaterial items that have been measured using a variety of valuation techniques other than those listed.

As of June 30, 2023	**Fair Value** [1] *(in millions)*	**Methodology**	**Input**	**Low** [2] [3]	**High** [2] [3]	**Weighted Average** [4]
Assets						
Securities borrowed and purchased under agreements to resell	\$ 50	Model-based	Interest rate	1.23 %	1.23 %	1.23 %
Mortgage-backed securities	\$ 726	Yield analysis	Yield	4.46 %	19.42 %	9.45 %
	259	Price-based	Price	\$ 0.87	\$ 117.72	\$ 41.91
State and municipal, foreign government, corporate and other debt securities	\$ 872	Price-based	Price	\$ 0.01	\$ 702.16	\$ 96.56
	726	Model-based	Forward price	17.46 %	218.96 %	102.59 %
			Commodity correlation	(21.00) %	95.73 %	43.10 %
			Commodity volatility	8.79 %	166.93 %	27.52 %
Equity securities [5]	\$ 234	Price-based	Price	\$ —	\$10,615.73	\$ 148.66
Asset-backed securities	\$ 462	Price-based	Price	\$ 5.45	\$ 140.00	\$ 70.83
	77	Yield analysis	Yield	6.12 %	11.91 %	8.58 %
Non-marketable equity	\$ 182	Comparables analysis	PE ratio	13.80x	15.40x	14.25x
	32	Model-based	Illiquidity discount	10.00 %	10.00 %	10.00 %
			EBITDA multiples	8.92x	15.70x	15.02x
			Cost of capital	17.50 %	17.50 %	17.50 %
			Discount to price	33.00 %	33.00 %	33.00 %
Derivatives – Gross [6]						
Interest rate contracts (gross)	\$ 2,880	Model-based	IR normal volatility	0.28 %	15.00 %	1.04 %
			Inflation volatility	0.49 %	8.22 %	1.12 %
Foreign exchange contracts (gross)	\$ 1,448	Model-based	IR normal volatility	0.28 %	13.00 %	0.81 %

As of June 30, 2023	**Fair Value** [1] *(in millions)*	**Methodology**	**Input**	**Low** [2] [3]	**High** [2] [3]	**Weighted Average** [4]
Equity contracts (gross) [7]	$ 4,161	Model-based	Equity volatility	0.06 %	279.49 %	31.52 %
			Equity forward	72.62 %	265.04 %	105.75 %
			Equity-FX correlation	(90.00) %	70.00 %	(11.23) %
			Equity-Equity correlation	(6.49) %	98.90 %	76.33 %
			Equity-IR correlation	(22.00) %	60.00 %	30.04 %
Commodity contracts (gross)	$ 1,535	Model-based	Commodity correlation	(21.00) %	95.73 %	43.10 %
			Commodity volatility	8.79 %	166.93 %	27.52 %
			Forward price	17.46 %	463.41 %	106.18 %
Credit derivatives (gross)	$ 939	Model-based	Credit spread	2 bps	453 bps	90 bps
	443	Price-based	Price	$ 1.73	$ 99.49	$ 39.46
			Credit correlation	45.00 %	70.00 %	50.34 %
			Recovery rate	6.00 %	40.00 %	32.68 %
Structured financing transactions	$ 113	Model-based	Commodity correlation	(21.00) %	95.73 %	43.10 %
			Commodity volatility	8.79 %	166.93 %	27.52 %
			Forward price	17.46 %	383.18 %	109.86 %
Liabilities						
Securities loaned and sold under agreements to repurchase	$ 627	Model-based	Interest rate	3.96 %	5.53 %	4.24 %
Trading account liabilities						
Securities sold, not yet purchased	$ 54	Price-based	Price	$ —	$ 10,615.73	$ 70.03
Short-term borrowings and long-term debt	$ 21,974	Model-based	IR normal volatility	0.28 %	13.00 %	1.16 %
			Equity volatility	0.06 %	279.49 %	31.85 %

As of December 31, 2022	**Fair Value** [1] *(in millions)*	**Methodology**	**Input**	**Low** [2] [3]	**High** [2] [3]	**Weighted Average** [4]
Assets						
Securities borrowed and purchased under agreements to resell	$ 48	Model-based	Interest rate	2.61 %	2.61 %	2.61 %
Mortgage-backed securities	$ 732	Yield analysis	Yield	4.41 %	20.30 %	9.74 %
	178	Price-based	Price	$ 0.78	$ 96.75	$ 34.26
State and municipal, foreign government, corporate and other debt securities	$ 740	Price-based	Price	$ —	$ 900.72	$ 114.56
	159	Model-based	Equity forward	68.34 %	271.61 %	103.49 %
			Equity volatility	0.05 %	300.72 %	31.47 %
Equity securities [5]	$ 141	Price-based	Price	$ —	$ 9,087.76	$ 117.93
Asset-backed securities	$ 345	Price-based	Price	$ 4.76	$ 145.00	$ 59.24
	308	Yield analysis	Yield	5.76 %	18.58 %	9.34 %
Non-marketable equity	$ 188	Comparables analysis	PE ratio	15.20x	15.70x	15.34x
	32	Model-based	Illiquidity discount	9.00 %	17.00 %	10.25 %
			EBITDA multiples	16.10x	17.10x	16.96x
			Discount to price	33.00 %	50.00 %	33.62 %
			Cost of capital	17.50 %	20.00 %	17.59 %
Derivatives – Gross [6]						
Interest rate contracts (gross)	$ 3,392	Model-based	IR normal volatility	0.33 %	1.47 %	0.77 %
			Inflation volatility	0.39 %	2.77 %	1.33 %

As of December 31, 2022	**Fair Value** [1] *(in millions)*	**Methodology**	**Input**	**Low** [2] [3]	**High** [2] [3]	**Weighted Average** [4]
Foreign exchange contracts (gross)	$ 1,369	Model-based	IR normal volatility	0.33 %	1.47 %	0.76 %
			Credit spread	116 bps	626 bps	602 bps
Equity contracts (gross) [7]	$ 4,645	Model-based	Equity volatility	0.05 %	300.72 %	32.16 %
			Equity forward	68.34 %	271.61 %	103.79 %
			Equity-FX correlation	(95.00) %	50.00 %	(16.38) %
			Equity-IR correlation	(18.83) %	60.00 %	32.37 %
			Equity-Equity correlation	(3.98) %	98.68 %	85.58 %
Commodity contracts (gross)	$ 2,081	Model-based	Forward price	14.27 %	385.50 %	110.07 %
			Commodity volatility	10.43 %	151.50 %	33.55 %
			Commodity correlation	(32.00) %	91.94 %	36.70 %
Credit derivatives (gross)	$ 945	Model-based	Credit spread	2.50 bps	955.10 bps	117.42 bps
	371	Price-based	Price	$ —	$ 98.73	$ 73.59
			Credit correlation	25.00 %	80.00 %	44.21 %
			Recovery rate	25.00 %	55.00 %	39.60 %
Structured financing transactions	$ 713	Model-based	Forward price	14.27 %	324.85 %	105.11 %
			Equity volatility	0.05 %	300.72 %	31.66 %
			Equity forward	68.34 %	271.61 %	103.49 %
Liabilities						
Securities loaned and sold under agreements to repurchase	$ 970	Model-based	Interest rate	4.01 %	4.97 %	4.07 %
Trading account liabilities						
Securities sold, not yet purchased	$ 29	Price-based	Price	$ —	$ 9,087.76	$ 38.27
Short-term borrowings and long-term debt	$ 20,897	Model-based	IR normal volatility	0.33 %	1.82 %	0.91 %
			Equity forward	68.34 %	271.61 %	103.49 %
			Equity volatility	0.05 %	300.72 %	32.00 %
			Equity-IR correlation	(18.83) %	60.00 %	32.37 %
			Equity-FX correlation	(95.00) %	50.00 %	(16.44) %

(1) The tables above include the fair values for the items listed and may not foot to the total population for each category.
(2) Some inputs are shown as zero due to rounding.
(3) When the low and high inputs are the same, there is either a constant input applied to all positions, or the methodology involving the input applies to only one large position.
(4) Weighted averages are calculated based on the fair values of the instruments.
(5) For equity securities, the price inputs are expressed on an absolute basis, not as a percentage of the notional amount.
(6) Trading account derivatives—assets and liabilities—are presented on a gross absolute value basis.
(7) Includes hybrid products.

Estimated Fair Value of Financial Instruments Not Carried at Fair Value

The following tables present the carrying value and fair value of the Company's financial instruments that are not carried at fair value. The tables below therefore exclude items measured at fair value on a recurring basis presented in the tables above.

	June 30, 2023		Estimated fair value		
In billions of dollars	Carrying value	Estimated fair value	Level 1	Level 2	Level 3
Assets					
Securities borrowed and purchased under agreements to resell	$ 83.4	$ 83.4	$ —	$ 83.4	$ —
Brokerage receivables	51.3	51.3	—	22.2	29.1
Loans to affiliates	94.2	94.2	—	94.2	—
Other financial assets (1)	28.5	28.5	13.0	8.5	7.0
Liabilities					
Securities loaned and sold under agreements to repurchase	$ 234.2	$ 234.2	$ —	$ 234.2	$ —
Brokerage payables	65.1	65.1	—	—	65.1
Long-term debt	92.3	92.3	—	89.3	3.0
Other financial liabilities (2)	24.6	24.6	—	21.7	2.9

	December 31, 2022		Estimated fair value		
In billions of dollars	Carrying value	Estimated fair value	Level 1	Level 2	Level 3
Assets					
Securities borrowed and purchased under agreements to resell	$ 84.1	$ 84.1	$ —	$ 84.1	$ —
Brokerage receivables	46.6	46.6	—	20.0	26.6
Loans to affiliates	93.7	93.7	—	93.7	—
Other financial assets (1)	35.4	35.4	18.7	8.4	8.3
Liabilities					
Securities loaned and sold under agreements to repurchase	$ 179.5	$ 179.5	$ —	$ 179.5	$ —
Brokerage payables	72.5	72.5	—	—	72.5
Long-term debt	84.2	84.2	—	81.2	3.0
Other financial liabilities (2)	41.4	41.4	—	38.5	2.9

(1) Includes cash and cash equivalents, cash segregated under federal and other regulations and other financial instruments included in *Other assets* on the Consolidated Statement of Financial Condition, for all of which the carrying value is a reasonable estimate of fair value.

(2) Includes short-term borrowings (carried at cost) and other financial instruments included in *Other liabilities* on the Consolidated Statement of Financial Condition, for all of which the carrying value is a reasonable estimate of fair value.

9. FAIR VALUE ELECTIONS

The Company may elect to report most financial instruments at fair value on an instrument-by-instrument basis with changes in fair value reported in earnings, other than DVA (see below). The election is made upon the initial recognition of an eligible financial asset, financial liability or when certain specified reconsideration events occur. The fair value election may not otherwise be revoked once an election is made. The changes in fair value are recorded in current earnings. Movements in DVA are reported as a component of *AOCI*. Additional discussion regarding other applicable areas in which fair value elections were made is presented in Note 8.

The following table presents the changes in fair value of those items for which the fair value option has been elected:

	Changes in fair value—gains (losses) Six Months Ended June 30,	
In millions of dollars	**2023**	**2022**
Assets		
Securities borrowed and purchased under agreements to resell	$ (6)	$ (75)
Trading account assets	1	5
Other financial assets	(290)	(654)
Total assets	$ (295)	$ (724)
Liabilities		
Securities loaned and sold under agreements to repurchase	$ (19)	$ 97
Trading account liabilities	639	(269)
Short-term borrowings (1)	93	1,645
Long-term debt (1)	(5,416)	10,669
Total liabilities	$ (4,703)	$ 12,142

(1) Includes DVA that is included in *AOCI*. See Note 8.

Own Debt Valuation Adjustments (DVA)

Own debt valuation adjustments are recognized on the Company's liabilities for which the fair value option has been elected using Citigroup's credit spreads observed in the bond market. Changes in fair value of fair value option liabilities related to changes in Citigroup's own credit spreads (DVA) are reflected as a component of *AOCI*.

Among other variables, the fair value of liabilities for which the fair value option has been elected (other than non-recourse debt and similar liabilities) is impacted by the narrowing or widening of Citigroup's credit spreads.

The estimated changes in the fair value of these non-derivative liabilities due to such changes in Citigroup's own credit spread (or instrument-specific credit risk) were a loss of $628 million and gain of $2,090 million for the six months ended June 30, 2023 and 2022, respectively. Changes in fair value resulting from changes in instrument-specific credit risk were estimated by incorporating Citigroup's current credit spreads observable in the bond market into the relevant valuation technique used to value each liability as described above.

The Fair Value Option for Financial Assets and Financial Liabilities

Selected Portfolios of Securities Purchased Under Agreements to Resell, Securities Borrowed, Securities Sold Under Agreements to Repurchase, Securities Loaned and Certain Uncollateralized Short-Term Borrowings

The Company elected the fair value option for certain portfolios of fixed income securities purchased under agreements to resell and fixed income securities sold under agreements to repurchase, securities borrowed, securities loaned and certain uncollateralized short-term borrowings held primarily by broker-dealer entities in the United States and the United Kingdom. In each case, the election was made because the related interest rate risk is managed on a portfolio basis, primarily with offsetting derivative instruments that are accounted for at fair value through earnings.

Changes in fair value for transactions in these portfolios are recorded in *Principal transactions*. The related interest revenue and interest expense are measured based on the contractual rates specified in the transactions and are reported as *Interest revenue* and *Interest expense* in the Consolidated Statement of Income.

Other Financial Assets
The Company elected the fair value option for structured commodity inventory financing transactions related to metals, crude and refined oil products. These transactions are carried at fair value to offset the derivatives executed to economically hedge these transactions. The Company also elected the fair value option for other loans related to derivative transactions. Changes in fair value for these transactions are recorded in *Principal transactions*.

Certain Debt Liabilities
The Company has elected the fair value option for certain debt liabilities, because these exposures are considered to be trading-related positions and, therefore, are managed on a fair value basis. These positions are classified as *Long-term debt* or *Short-term borrowings* on the Company's Consolidated Statement of Financial Condition.

The following table provides information about the carrying value of notes carried at fair value, disaggregated by type of risk:

In millions of dollars	June 30, 2023	December 31, 2022
Equity linked	$ 51,156	$ 45,827
Interest rate linked	37,537	35,013
Credit linked	3,410	3,681
Commodity linked	2,487	3,253
Foreign exchange linked	51	91
Total	$ 94,641	$ 87,865

The portion of the changes in fair value attributable to changes in Citigroup's own credit spreads (DVA) is reflected as a component of *AOCI* while all other changes in fair value are reported in *Principal transactions*. Changes in the fair value of these liabilities include accrued interest, which is also included in the change in fair value reported in *Principal transactions*.

The following table provides information about long-term debt carried at fair value:

In millions of dollars	June 30, 2023	December 31, 2022
Carrying amount reported on the Consolidated Statement of Financial Condition	$ 94,641	$ 87,865
Aggregate unpaid principal balance in excess of (less than) fair value	(1,398)	(2,379)

The following table provides information about short-term borrowings carried at fair value:

In millions of dollars	June 30, 2023	December 31, 2022
Carrying amount reported on the Consolidated Statement of Financial Condition	$ 5,027	$ 5,336
Aggregate unpaid principal balance in excess of fair value	—	2

10. GUARANTEES AND COMMITMENTS

CGMHI provides a variety of guarantees and indemnifications to its customers to enhance their credit standing and enable them to complete a wide range of business transactions. For certain contracts meeting the definition of a guarantee, the guarantor must recognize, at inception, a liability for the fair value of the obligation undertaken in issuing the guarantee.

In addition, the guarantor must disclose the maximum potential amount of future payments that the guarantor could be required to make under the guarantee, if there were a total default by the guaranteed parties. The determination of the maximum potential future payments is based on the notional amount of the guarantees without consideration of possible recoveries under recourse provisions or from collateral held or pledged. As such, CGMHI believes such amounts bear no relationship to the anticipated losses, if any, on these guarantees.

For additional information regarding CGMHI's guarantees and indemnifications included in the disclosures below, as well as its other guarantees and indemnifications excluded from these disclosures, see Note 13 to the Consolidated Financial Statements in CGMHI's 2022 Audited Financial Statements.

Derivative Instruments Considered to Be Guarantees
As of June 30, 2023, the maximum potential amount of future payments on derivative instruments considered to be guarantees was $7.6 billion, including $1.9 billion expiring within one year. As of December 31, 2022, the maximum potential amount of future payments on derivative instruments considered to be guarantees was $7.7 billion, including $2.5

billion expiring within one year. The carrying amount of the liabilities related to these derivative instruments considered to be guarantees was $119 million and $102 million at June 30, 2023 and December 31, 2022, respectively, and is recorded at fair value in *Trading account liabilities*.

Value-Transfer Networks (Including Exchanges and Clearing Houses) (VTNs)
The Company is a member of, or shareholder in, a number of value-transfer networks (VTNs) (payment, clearing and settlement systems as well as exchanges) around the world. As a condition of membership, many of these VTNs require that members stand ready to pay a pro rata share of the losses incurred by the organization due to another member's default on its obligations. The Company's potential obligations may be limited to its membership interests in the VTNs, contributions to the VTN's funds, or, in certain narrow cases, to the full pro rata share. At June 30, 2023 and December 31, 2022, CGMHI had $13.5 billion and $6.0 billion, respectively, in capped contingent liquidity facilities with VTNs. The maximum exposure is difficult to estimate as this would require an assessment of claims that have not yet occurred; however, the Company believes the risk of loss is remote given historical experience with the VTNs. Accordingly, there are no amounts reflected on the Consolidated Statement of Financial Condition as of June 30, 2023 or December 31, 2022 for potential obligations that could arise from the Company's involvement with VTN associations.

Futures and Over-the-Counter Derivatives Clearing
CGMHI provides clearing services on central clearing parties (CCP) for clients that need to clear exchange-traded and over-the-counter (OTC) derivatives contracts with CCPs. Based on all relevant facts and circumstances, CGMHI has concluded that it acts as an agent for accounting purposes in its role as clearing member for these client transactions. As such, CGMHI does not reflect the underlying exchange-traded or OTC derivatives contracts in its Consolidated Financial Statements. See Note 7 for a discussion of CGMHI's derivatives activities that are reflected in its Consolidated Financial Statements.

As a clearing member, CGMHI collects and remits cash and securities collateral (margin) between its clients and the respective CCP. In certain circumstances, CGMHI collects a higher amount of cash (or securities) from its clients than it needs to remit to the CCPs. This excess cash is then held at customer segregated depository institutions such as banks or custodians.

There are two types of margin: initial and variation. Where CGMHI obtains benefits from or controls cash initial margin (e.g., retains an interest spread), cash initial margin collected from clients and remitted to the CCP or depository institutions is reflected within *Brokerage payables* (payables to customers) and *Brokerage receivables* (receivables from brokers, dealers and clearing organizations) or *Cash segregated under federal and other regulations*, respectively.

However, for exchange-traded and OTC-cleared derivatives contracts where CGMHI does not obtain benefits from or control the client cash balances, the client cash initial margin collected from clients and remitted to the CCP or depository institutions is not reflected on the Company's Consolidated Statement of Financial Condition. These conditions are met when CGMHI has contractually agreed with the client that (i) CGMHI will pass through to the client all interest paid by the CCP or depository institutions on the cash initial margin, (ii) CGMHI will not utilize its right as a clearing member to transform cash margin into other assets, (iii) CGMHI does not guarantee and is not liable to the client for the performance of the CCP or the depository institution and (iv) the client cash balances are legally isolated from CGMHI's bankruptcy estate. The total amount of cash initial margin collected and remitted in this manner was approximately $16.5 billion and $16.7 billion as of June 30, 2023 and December 31, 2022, respectively.

Variation margin due from clients to the respective CCP, or from the CCP to clients, reflects changes in the value of the client's derivative contracts for each trading day. As a clearing member, CGMHI is exposed to the risk of non-performance by clients (e.g., failure of a client to post variation margin to the CCP for negative changes in the value of the client's derivative contracts). In the event of non-performance by a client, CGMHI would move to close out the client's positions. The CCP would typically utilize initial margin posted by the client and held by the CCP, with any remaining shortfalls required to be paid by CGMHI as clearing member. CGMHI generally holds incremental cash or securities margin posted by the client, which would typically be expected to be sufficient to mitigate CGMHI's credit risk in the event that the client fails to perform.

As required by ASC 860-30-25-5, securities collateral posted by clients is not recognized on the Company's Consolidated Statement of Financial Condition.

Margin Loan Indemnifications
CGMHI had margin loan indemnification agreements of $849 million and $950 million at June 30, 2023 and December 31, 2022, respectively. The commitments to potentially indemnify do not relate to a loan on CGMH's Consolidated

Statement of Financial Condition, nor a commitment to extend a loan. The contingencies potentially triggering the obligation to indemnify have not occurred and are not expected to occur. As a result, there are no amounts reflected on the Consolidated Statement of Financial Condition as of June 30, 2023 or December 31, 2022 for potential obligations that could arise from these indemnifications provided by the Company.

Unsettled Reverse Repurchase and Securities Borrowing Agreements and Unsettled Repurchase and Securities Lending Agreements

In addition, in the normal course of business, the Company enters into reverse repurchase and securities borrowing agreements, as well as repurchase and securities lending agreements, which settle at a future date. At June 30, 2023 and December 31, 2022, the Company had approximately $121.2 billion and $83.0 billion of unsettled reverse repurchase and securities borrowing agreements, and approximately $93.3 billion and $29.8 billion of unsettled repurchase and securities lending agreements, respectively. See Note 3 for a further discussion of securities purchased under agreements to resell and securities borrowed, and securities sold under agreements to repurchase and securities loaned, including the Company's policy for offsetting repurchase and reverse repurchase agreements.

Other Financing Commitments

Other CGMHI financing commitments of $4.2 billion and $3.1 billion at June 30, 2023 and December 31, 2022, respectively, include commitments to enter into collateralized financing transactions.

11. LEASES

The Company's operating leases, where CGMHI is a lessee, represent office space and branches. These leases may contain renewal and extension options and early termination features; however, these options do not impact the lease term unless the Company is reasonably certain that it will exercise options. These leases have a weighted-average remaining lease term of approximately 14 years as of June 30, 2023.

For additional information regarding CGMHI's leases, see Notes 14 to the Consolidated Financial Statements in CGMHI's 2022 Audited Financial Statements.

The following table presents information on the right-of-use (ROU) asset and lease liabilities included in *Other assets* and *Other liabilities*, respectively:

In millions of dollars	June 30, 2023	December 31, 2022
ROU asset	$ 677	$ 674
Lease liability	561	547

The Company recognizes fixed lease costs on a straight-line basis throughout the lease term in the Consolidated Statement of Income. In addition, variable lease costs are recognized in the period in which the obligation for those payments is incurred. CGMHI's total operating lease expense was $121 million and $98 million for the six months ended June 30, 2023 and 2022, respectively.

12. RELATED PARTY TRANSACTIONS

Citigroup Inc. owns 100% of the outstanding common stock of the Company. Pursuant to various intercompany agreements, a number of significant transactions are carried out between the Company and Citigroup and/or their affiliates, including the Citigroup parent company.

Detailed below is a summary of the Company's transactions with other Citigroup affiliates, which are included in the accompanying Consolidated Statement of Income and Consolidated Statement of Financial Condition. These amounts exclude intra-CGMHI balances that eliminate in consolidation. For additional information regarding the Company's related party transactions, see Note 15 to the Consolidated Financial Statements in CGMHI's 2022 Audited Financial Statements.

INCOME STATEMENT ITEMS

	Six Months Ended June 30,	
In millions of dollars	2023	2022
Revenues		
Principal transactions [(1)]	$ (2,234)	$ (7,437)
Investment banking	121	125
All other revenues	(22)	(31)
Total non-interest revenues	(2,135)	(7,343)
Interest revenue	3,319	432
Interest expense	4,696	1,036
Net interest income (expense)	(1,377)	(604)
Total revenues, net of interest expense	$ (3,512)	$ (7,947)
Operating expenses		
Technology, communications and equipment	$ 580	$ 553
Occupancy	115	99
All other expenses [(2)]	1,022	723
Total non-interest expenses	$ 1,717	$ 1,375

(1) Principal transactions revenue consists of realized and unrealized gains and losses from trading activities with non-consolidated CGMHI affiliates. Includes gains and losses on derivatives with non-consolidated CGMHI affiliates, but does not include the gains and losses related to any offsetting derivatives executed with third parties external to CGMHI, which are an integral part of trading activities profitability.

(2) Includes expenses from affiliates for shared services and charges, as well as fees for the early termination of debt with affiliates.

STATEMENT OF FINANCIAL CONDITION ITEMS

In millions of dollars	June 30, 2023	December 31, 2022
Assets		
Cash and cash equivalents	$ 7,767	$ 8,466
Cash segregated under federal and other regulations	5,783	9,798
Securities borrowed and purchased under agreements to resell	16,471	19,549
Derivatives	3,920	7,279
Loans to affiliates	94,195	93,670
Brokerage receivables and other assets	1,687	1,382
Total assets	$ 129,823	$ 140,144
Liabilities		
Short-term borrowings	$ 11,377	$ 23,468
Securities loaned and sold under agreements to repurchase	53,889	64,151
Derivatives	4,453	6,989
Brokerage payables	8,794	10,256
Other liabilities	2,468	5,274
Long-term debt	91,443	83,224
Total liabilities	$ 172,424	$ 193,362

13. CONTINGENCIES

Accounting and Disclosure Framework
ASC 450 governs the disclosure and recognition of loss contingencies, including potential losses from litigation, regulatory, tax and other matters. ASC 450 defines a "loss contingency" as "an existing condition, situation, or set of circumstances involving uncertainty as to possible loss to an entity that will ultimately be resolved when one or more future events occur or fail to occur." It imposes different requirements for the recognition and disclosure of loss contingencies based on the likelihood of occurrence of the contingent future event or events. It distinguishes among degrees of likelihood using the following three terms: "probable," meaning that "the future event or events are likely to occur"; "remote," meaning that "the chance of the future event or events occurring is slight"; and "reasonably possible," meaning that "the chance of the future event or events occurring is more than remote but less than likely." These three terms are used below as defined in ASC 450. In establishing appropriate disclosure and recognition for loss contingencies, management assesses each matter including the role of the relevant Citigroup legal entity. Because specific loss contingency matters may involve multiple Citigroup legal entities and are not solely related to one legal entity, this process requires management to make certain estimates and judgments that affect the Company's Consolidated Financial Statements.

Accruals. ASC 450 requires accrual for a loss contingency when it is "probable that one or more future events will occur confirming the fact of loss" *and* "the amount of the loss can be reasonably estimated." In accordance with ASC 450, Citigroup establishes accruals for contingencies, including any litigation, regulatory, or tax matters disclosed herein, when Citigroup believes it is probable that a loss has been incurred and the amount of the loss can be reasonably estimated. When the reasonable estimate of the loss is within a range of amounts, the minimum amount of the range is accrued, unless some higher amount within the range is a better estimate than any other amount within the range. Once established, accruals are adjusted from time to time, as appropriate, in light of additional information. The amount of loss ultimately incurred in relation to those matters may be substantially higher or lower than the amounts accrued for those matters. With respect to previously incurred loss contingencies for which recovery is expected, CGMHI applies loss recovery accounting when disputes and uncertainties affecting recognition are resolved.

Disclosure. ASC 450 requires disclosure of a loss contingency if "there is at least a reasonable possibility that a loss or an additional loss may have been incurred" *and* there is no accrual for the loss because the conditions described above are not met or an exposure to loss exists in excess of the amount accrued. In accordance with ASC 450, if Citigroup has not accrued for a matter because Citigroup believes that a loss is reasonably possible but not probable, or that a loss is probable but not reasonably estimable, and the reasonably possible loss is material, it discloses the loss contingency. In addition, Citigroup discloses matters for which it has accrued if it believes a reasonably possible exposure to material loss exists in excess of the amount accrued. In accordance with ASC 450, Citigroup's disclosure includes an estimate of the reasonably possible loss or range of loss for those matters as to which an estimate can be made. ASC 450 does not require disclosure of an estimate of the reasonably possible loss or range of loss where an estimate cannot be made. Neither accrual nor disclosure is required for losses that are deemed remote.

Litigation, Regulatory and Other Contingencies
Overview. In addition to the matters described below, in the ordinary course of business, CGMHI, its parent entity Citigroup, its affiliates and subsidiaries, and current and former officers, directors and employees (for purposes of this section, sometimes collectively referred to as Citigroup and Related Parties) routinely are named as defendants in, or as parties to, various legal actions and proceedings. Certain of these actions and proceedings assert claims or seek relief in connection with alleged violations of consumer protection, securities, banking, antifraud, antitrust, anti-money laundering, employment and other statutory and common laws. Certain of these actual or threatened legal actions and proceedings include claims for substantial or indeterminate compensatory or punitive damages, or for injunctive relief, and in some instances seek recovery on a class-wide basis.

In the ordinary course of business, Citigroup and Related Parties also are subject to governmental and regulatory examinations, information-gathering requests, investigations and proceedings (both formal and informal), certain of which may result in adverse judgments, settlements, fines, penalties, restitution, disgorgement, injunctions or other relief. In addition, Citigroup is a bank holding company, and certain affiliates and subsidiaries of CGMHI are banks, registered broker-dealers, futures commission merchants, investment advisors or other regulated entities and, in those capacities, are subject to regulation by various U.S., state and foreign securities, banking, commodity futures, consumer protection and other regulators. In connection with formal and informal inquiries by these regulators, Citigroup and such affiliates and subsidiaries receive numerous requests, subpoenas and orders seeking documents, testimony and other information in connection with various aspects of their regulated activities. From time to time Citigroup and Related Parties also receive grand jury subpoenas and other requests for information or assistance, formal or informal, from federal or state law enforcement agencies including, among others, various United States Attorneys' Offices, the Money Laundering and Asset

Recovery Section and other divisions of the Department of Justice, the Financial Crimes Enforcement Network of the United States Department of the Treasury, and the Federal Bureau of Investigation relating to Citigroup and its customers.

Because of the global scope of Citigroup's operations and its presence in countries around the world, Citigroup and Related Parties are subject to litigation and governmental and regulatory examinations, information-gathering requests, investigations and proceedings (both formal and informal) in multiple jurisdictions with legal, regulatory and tax regimes that may differ substantially, and present substantially different risks, from those Citigroup and Related Parties are subject to in the United States. In some instances, Citigroup and Related Parties may be involved in proceedings involving the same subject matter in multiple jurisdictions, which may result in overlapping, cumulative or inconsistent outcomes.

Citigroup and CGMHI seek to resolve all litigation, regulatory, tax and other matters in the manner management believes is in the best interests of Citigroup and its shareholders, and contests liability, allegations of wrongdoing and, where applicable, the amount of damages or scope of any penalties or other relief sought as appropriate in each pending matter.

Inherent Uncertainty of the Matters Disclosed. Certain of the matters disclosed below involve claims for substantial or indeterminate damages. The claims asserted in these matters typically are broad, often spanning a multiyear period and sometimes a wide range of business activities, and the plaintiffs' or claimants' alleged damages frequently are not quantified or factually supported in the complaint or statement of claim. Other matters relate to regulatory investigations or proceedings, as to which there may be no objective basis for quantifying the range of potential fine, penalty or other remedy. As a result, Citigroup is often unable to estimate the loss in such matters, even if it believes that a loss is probable or reasonably possible, until developments in the case, proceeding or investigation have yielded additional information sufficient to support a quantitative assessment of the range of reasonably possible loss. Such developments may include, among other things, discovery from adverse parties or third parties, rulings by the court on key issues, analysis by retained experts and engagement in settlement negotiations.

Depending on a range of factors, such as the complexity of the facts, the novelty of the legal theories, the pace of discovery, the court's scheduling order, the timing of court decisions and the adverse party's, regulator's or other authority's willingness to negotiate in good faith toward a resolution, it may be months or years after the filing of a case or commencement of a proceeding or an investigation before an estimate of the range of reasonably possible loss can be made.

Matters as to Which an Estimate Can Be Made. For some of the matters disclosed below, Citigroup is currently able to estimate a reasonably possible loss or range of loss in excess of amounts accrued (if any). For some of the matters included within this estimation, an accrual has been made because a loss is believed to be both probable and reasonably estimable, but a reasonably possible exposure to loss exists in excess of the amount accrued. In these cases, the estimate reflects the reasonably possible range of loss in excess of the accrued amount. For other matters included within this estimation, no accrual has been made because a loss, although estimable, is believed to be reasonably possible, but not probable; in these cases, the estimate reflects the reasonably possible loss or range of loss.

These estimates are based on currently available information. As available information changes, the matters for which Citigroup is able to estimate will change, and the estimates themselves will change. In addition, while many estimates presented in financial statements and other financial disclosures involve significant judgment and may be subject to significant uncertainty, estimates of the range of reasonably possible loss arising from litigation, regulatory and tax proceedings are subject to particular uncertainties. For example, at the time of making an estimate, (i) Citigroup may have only preliminary, incomplete or inaccurate information about the facts underlying the claim, (ii) its assumptions about the future rulings of the court, other tribunal or authority on significant issues, or the behavior and incentives of adverse parties, regulators or other authorities, may prove to be wrong and (iii) the outcomes it is attempting to predict are often not amenable to the use of statistical or other quantitative analytical tools. In addition, from time to time an outcome may occur that Citigroup had not accounted for in its estimate because it had deemed such an outcome to be remote. For all of these reasons, the amount of loss in excess of amounts accrued in relation to matters for which an estimate has been made could be substantially higher or lower than the range of loss included in the estimate.

Matters as to Which an Estimate Cannot Be Made. For other matters disclosed below, Citigroup is not currently able to estimate the reasonably possible loss or range of loss. Many of these matters remain in very preliminary stages (even in some cases where a substantial period of time has passed since the commencement of the matter), with few or no substantive legal decisions by the court, tribunal or other authority defining the scope of the claims, the class (if any) or the potentially available damages or other exposure, and fact discovery is still in progress or has not yet begun. In many of these matters, Citigroup has not yet answered the complaint or statement of claim or asserted its defenses, nor has it engaged in any negotiations with the adverse party (whether a regulator, taxing authority or a private party). For all these reasons, Citigroup cannot at this time estimate the reasonably possible loss or range of loss, if any, for these matters.

Opinion of Management as to Eventual Outcome. Subject to the foregoing, it is the opinion of Citigroup's management, based on current knowledge and after taking into account its current accruals, that the eventual outcome of all matters described in this Note would not likely have a material adverse effect on the consolidated financial condition of CGMHI.

Nonetheless, given the substantial or indeterminate amounts sought in certain of these matters, and the inherent unpredictability of such matters, an adverse outcome in certain of these matters could, from time to time, have a material adverse effect on CGMHI's consolidated results of operations or cash flows in particular quarterly or annual periods.

Foreign Exchange Matters
Regulatory Actions: Government and regulatory agencies in the U.S. and other jurisdictions are conducting investigations or making inquiries regarding Citigroup's foreign exchange business. Citigroup is cooperating with these and related investigations and inquiries.

Antitrust and Other Litigation: In 2018, a number of institutional investors who opted out of the previously disclosed August 2018 final settlement filed an action against Citigroup, Citibank, Citigroup Global Markets Inc. (CGMI) and other defendants, captioned ALLIANZ GLOBAL INVESTORS, ET AL. v. BANK OF AMERICA CORP., ET AL., in the United States District Court for the Southern District of New York. Plaintiffs allege that defendants manipulated, and colluded to manipulate, the foreign exchange markets. In July 2020, plaintiffs filed a third amended complaint. On March 29, 2023, the parties executed an agreement to resolve all of plaintiffs' claims. On May 18, 2023, the United States District Court for the Southern District of New York approved a stipulation dismissing all remaining claims in the case with prejudice. Additional information concerning this action is publicly available in court filings under the docket number 18-CV-10364 (S.D.N.Y.) (Schofield, J.).

In 2018, a group of institutional investors issued a claim against Citigroup, Citibank and other defendants, captioned ALLIANZ GLOBAL INVESTORS GMBH AND OTHERS v. BARCLAYS BANK PLC AND OTHERS, in the High Court of Justice in London. Claimants allege that defendants manipulated, and colluded to manipulate, the foreign exchange market in violation of EU and U.K. competition laws. In December 2021, the High Court ordered that the case be transferred to the U.K.'s Competition Appeal Tribunal. On March 29, 2023, the parties executed an agreement to resolve all of plaintiffs' claims. On May 23, 2023, the High Court of Justice in London formally discontinued the case in light of a March 29, 2023 settlement agreement. Additional information concerning this action is publicly available in court filings under the case number CL-2018-000840 in the High Court and under the case number 1430/5/7/22 (T) in the Competition Appeal Tribunal.

In 2015, a putative class of consumers and businesses in the U.S. who directly purchased supracompetitive foreign currency at benchmark exchange rates filed an action against Citigroup and other defendants, captioned NYPL v. JPMORGAN CHASE & CO., ET AL., in the United States District Court for the Northern District of California (later transferred to the United States District Court for the Southern District of New York). Subsequently, plaintiffs filed an amended class action complaint against Citigroup, Citibank and Citicorp as defendants. Plaintiffs allege that they suffered losses as a result of defendants' alleged manipulation of, and collusion with respect to, the foreign exchange market. Plaintiffs assert claims under federal and California antitrust and consumer protection laws, and seek compensatory damages, treble damages and declaratory and injunctive relief. On March 8, 2022, the court denied plaintiffs' motion for class certification. On August 22, 2022, the United States Court of Appeals for the Second Circuit denied plaintiffs' application seeking appellate review of the decision denying class certification. On March 30, 2023, the United States District Court for the Southern District of New York granted defendants' motion for summary judgment and dismissed all remaining claims. On April 13, 2023, plaintiffs filed an appeal from the dismissal of the case by the district court to the United States Court of Appeals for the Second Circuit. Additional information concerning this action is publicly available in court filings under the docket numbers 15-CV-2290 (N.D. Cal.) (Chhabria, J.), 15-CV-9300 (S.D.N.Y.) (Schofield, J.), 22-698 (2d Cir.), and 23-619 (2d Cir.).

In 2019, two applications, captioned MICHAEL O' HIGGINS FX CLASS REPRESENTATIVE LIMITED v. BARCLAYS BANK PLC AND OTHERS and PHILLIP EVANS v. BARCLAYS BANK PLC AND OTHERS, were made to the U.K.'s Competition Appeal Tribunal requesting permission to commence collective proceedings against Citigroup, Citibank and other defendants. The applications seek compensatory damages for losses alleged to have arisen from the actions at issue in the European Commission's foreign exchange spot trading infringement decision (European Commission Decision of May 16, 2019 in Case AT.40135-FOREX (Three Way Banana Split) C(2019) 3631 final). On March 31, 2022, the U.K.'s Competition Appeal Tribunal issued its judgment on certification, and on October 4, 2022, the U.K.'s Competition Appeal Tribunal granted both claimants permission to appeal the certification judgment. On July 25, 2023, the English Court of Appeal issued its judgment on the claimants' appeal from the Competition Appeal Tribunal's March 31, 2022 judgment on certification and directed that the case proceed upon an opt-out basis with Phillip Evans having carriage of the claims. Additional information concerning these actions is publicly available in court filings under the case numbers 1329/7/7/19 and 1336/7/7/19 in the Competition Appeal Tribunal and CA-2022-002002 and CA-2022-002003 in the Court of Appeal.

In 2019, a putative class action was filed against Citibank and other defendants, captioned J WISBEY & ASSOCIATES PTY LTD v. UBS AG & ORS, in the Federal Court of Australia. Plaintiffs allege that defendants manipulated the foreign exchange markets. Plaintiffs assert claims under antitrust laws, and seek compensatory damages and declaratory and injunctive relief. Additional information concerning this action is publicly available in court filings under the docket number VID567/2019.

In 2019, two motions for certification of class actions filed against Citigroup, Citibank and Citicorp and other defendants were consolidated, under the caption GERTLER, ET AL. v. DEUTSCHE BANK AG, in the Tel Aviv Central District Court in Israel. Plaintiffs allege that defendants manipulated the foreign exchange markets. In April 2021, Citibank's motion to dismiss plaintiffs' petition for certification was denied. On April 6, 2022, the Supreme Court of Israel denied Citibank's motion for leave to appeal the Central District Court's denial of its motion to dismiss. Additional information concerning this action is publicly available in court filings under the docket number CA 29013-09-18.

Interbank Offered Rates-Related Litigation and Other Matters
In August 2020, individual borrowers and consumers of loans and credit cards filed an action against Citigroup, Citibank, CGMI and other defendants, captioned MCCARTHY, ET AL. v. INTERCONTINENTAL EXCHANGE, INC., ET AL., in the United States District Court for the Northern District of California. Plaintiffs allege that defendants conspired to fix ICE LIBOR, assert claims under the Sherman Act and the Clayton Act, and seek declaratory relief, injunctive relief, and treble damages. On October 4, 2022, plaintiffs filed an amended complaint, and on November 4, 2022, defendants moved to dismiss the amended complaint. Additional information concerning this action is publicly available in court filings under the docket number 20-CV-5832 (N.D. Cal.) (Donato, J.).

Interest Rate and Credit Default Swap Matters
Regulatory Actions: The Commodity Futures Trading Commission (CFTC) is conducting an investigation into alleged anticompetitive conduct in the trading and clearing of interest rate swaps (IRS) by investment banks. Citigroup is cooperating with the investigation.

Antitrust and Other Litigation: Beginning in 2015, Citigroup, Citibank, CGMI, CGML and numerous other parties were named as defendants in a number of industry-wide putative class actions related to IRS trading. These actions have been consolidated in the United States District Court for the Southern District of New York under the caption IN RE INTEREST RATE SWAPS ANTITRUST LITIGATION. The actions allege that defendants colluded to prevent the development of exchange-like trading for IRS and assert federal and state antitrust claims and claims for unjust enrichment. Also consolidated under the same caption are individual actions filed by swap execution facilities, asserting federal and state antitrust claims, as well as claims for unjust enrichment and tortious interference with business relations. Plaintiffs in these actions seek treble damages, fees, costs and injunctive relief. Lead plaintiffs in the class action moved for class certification in 2019 and subsequently filed an amended complaint. Additional information concerning these actions is publicly available in court filings under the docket numbers 18-CV-5361 (S.D.N.Y.) (Oetken, J.) and 16-MD-2704 (S.D.N.Y.) (Oetken, J.).

In 2017, Citigroup, Citibank, CGMI, CGML and numerous other parties were named as defendants in an action filed in the United States District Court for the Southern District of New York under the caption TERA GROUP, INC., ET AL. v. CITIGROUP, INC., ET AL. The complaint alleges that defendants colluded to prevent the development of exchange-like trading for credit default swaps and asserts federal and state antitrust claims and state law tort claims. In January 2020, plaintiffs filed an amended complaint, which defendants later moved to dismiss. Additional information concerning this action is publicly available in court filings under the docket number 17-CV-4302 (S.D.N.Y.) (Sullivan, J.).

Madoff-Related Litigation
In 2008, a Securities Investor Protection Act (SIPA) trustee was appointed for the SIPA liquidation of Bernard L. Madoff Investment Securities LLC (BLMIS), in the United States Bankruptcy Court for the Southern District of New York. Beginning in 2010, the SIPA trustee commenced actions against multiple Citi entities, including Citibank, Citicorp North America, Inc., CGML and Citibank (Switzerland) AG, captioned PICARD v. CITIBANK, N.A., ET AL. and PICARD v. Citibank (Switzerland) Ltd., seeking recovery of monies that originated at BLMIS and were allegedly received by the Citi entities as subsequent transferees.

On February 11, 2022, the SIPA trustee filed an amended complaint against Citibank, Citicorp North America, Inc. and CGML, and subsequently voluntarily dismissed the case against Citibank (Switzerland) AG. On April 22, 2022, these remaining Citi entities moved to dismiss the amended complaint, which the bankruptcy court denied. On November 2, 2022, the remaining Citi entities moved to file an interlocutory appeal of the bankruptcy court's decision. On November 10, 2022, the remaining Citi entities answered the amended complaint. Additional information concerning these actions is publicly available in court filings under the docket numbers 10-5345, 12-1700 (Bankr. S.D.N.Y.) (Morris, J.); and 22-9597 (S.D.N.Y.) (Gardephe, J.).

Beginning in 2010, the British Virgin Islands liquidators of Fairfield Sentry Limited, whose assets were invested with BLMIS, commenced multiple actions against CGML, Citibank (Switzerland) AG, Citibank, NA London, Citivic Nominees Ltd., Cititrust Bahamas Ltd., and Citibank Korea Inc., captioned FAIRFIELD SENTRY LTD., ET AL. v. CITIGROUP GLOBAL MARKETS LTD., ET AL.; FAIRFIELD SENTRY LTD., ET AL. v. CITIBANK (SWITZERLAND) AG, ET AL.; FAIRFIELD SENTRY LTD., ET AL. v. ZURICH CAPITAL MARKETS COMPANY, ET AL.; FAIRFIELD SENTRY LTD., ET AL. v. CITIBANK NA LONDON, ET AL.; FAIRFIELD SENTRY LTD., ET AL. v. CITIVIC NOMINEES LTD., ET AL.; FAIRFIELD SENTRY LTD., ET AL. v. DON CHIMANGO SA, ET AL.; and FAIRFIELD SENTRY LTD., ET AL. v. CITIBANK KOREA INC. ET AL., in the United States Bankruptcy Court for the Southern District of New York. The actions seek recovery of monies that were allegedly received directly or indirectly from Fairfield Sentry.

In October 2021, Citi (Switzerland) AG and Citivic Nominees Ltd. filed a motion to dismiss for lack of personal jurisdiction, which remains pending. On August 24, 2022, the United States District Court for the Southern District of New York affirmed various decisions of the bankruptcy court, which dismissed claims against CGML, Citibank (Switzerland) AG, Citibank, NA London, Citivic Nominees Ltd., Cititrust Bahamas Ltd., and Citibank Korea Inc., and permitted a single claim against Citibank, NA London, CGML, Citivic Nominees Ltd., and Citibank (Switzerland) AG to proceed. In late September 2022, the liquidators appealed the district court's decision dismissing the liquidators' claims. On September 30, 2022, CGML, Citibank (Switzerland) AG, Citibank, NA London, and Citivic Nominees Ltd. moved for leave to appeal the district court's decision permitting the single claim to proceed against them. On May 5, 2023, the British Virgin Islands liquidators of Fairfield Sentry Limited voluntarily dismissed the pending claims against Citi (Switzerland) AG and Citivic Nominees Ltd. without prejudice. The claims previously dismissed against Citi (Switzerland) AG and Citivic Nominees Ltd. remain subject to the pending consolidated direct appeal in the United States Court of Appeals for the Second Circuit and are unaffected by the liquidators' voluntary dismissal. On July 5, 2023, the United States Court of Appeals for the Second Circuit granted CGML, Citibank (Switzerland) AG, Citivic Nominees Ltd., and Citibank, NA London leave to appeal the district court's decision permitting a single claim to proceed against them and consolidated the interlocutory appeals with the liquidators' pending consolidated direct appeal. Additional information is publicly available in court filings under the docket numbers 10-13164, 10-3496, 10-3622, 10-3634, 10-4100, 10-3640, 11-2770, 12-1142, 12-1298 (Bankr. S.D.N.Y.) (Morris, J.); 19-3911, 19-4267, 19-4396, 19-4484, 19-5106, 19-5135, 19-5109, 21-2997, 21-3243, 21-3526, 21-3529, 21-3530, 21-3998, 21-4307, 21-4498, 21-4496 (S.D.N.Y.) (Broderick, J.); and 22-2101 (consolidated lead appeal), 22-2557, 22-2122, 22-2562, 22-2216, 22-2545, 22-2308, 22-2591, 22-2502, 22-2553, 22-2398, 22-2582 (2d Cir.), 23-549, 23-572, 23-573, 23-975, 23-982, and 23-987 (2d Cir.).

Record-Keeping Matters

In September 2022, CGMI entered into a resolution with the SEC and the CFTC, to resolve the SEC's and CFTC's respective investigations regarding compliance with record-keeping obligations in connection with business-related communications sent over unapproved electronic messaging channels. Under these resolutions, a $125 million civil monetary penalty was paid to the SEC, and a $75 million civil monetary penalty was paid to the CFTC.

Shareholder Derivative and Securities Litigation

Beginning in October 2020, four derivative actions were filed in the United States District Court for the Southern District of New York, purportedly on behalf of Citigroup (as nominal defendant) against certain of Citigroup's current and former directors. The actions were later consolidated under the case name IN RE CITIGROUP INC. SHAREHOLDER DERIVATIVE LITIGATION. The consolidated complaint asserts claims for breach of fiduciary duty, unjust enrichment, and contribution and indemnification in connection with defendants' alleged failures to implement adequate internal controls. In addition, the consolidated complaint asserts derivative claims for violations of Sections 10(b) and 14(a) of the Securities Exchange Act of 1934 in connection with statements in Citigroup's 2019 and 2020 annual meeting proxy statements. In February 2021, the court stayed the action pending resolution of defendants' motion to dismiss in IN RE CITIGROUP SECURITIES LITIGATION. Additional information concerning this action is publicly available in court filings under the docket number 1:20-CV-09438 (S.D.N.Y.) (Preska, J.).

Beginning in December 2020, two derivative actions were filed in the Supreme Court of the State of New York, purportedly on behalf of Citigroup (as nominal defendant) against certain of Citigroup's current and former directors, and certain current and former officers. The actions were later consolidated under the case name IN RE CITIGROUP INC. DERIVATIVE LITIGATION, and the court stayed the action pending resolution of defendants' motion to dismiss in IN RE CITIGROUP SECURITIES LITIGATION. Additional information concerning this action is publicly available in court filings under the docket number 656759/2020 (N.Y. Sup. Ct.) (Schecter, J.).

On June 23, 2022, a third derivative action was filed in the Supreme Court of the State of New York, also purportedly on behalf of Citigroup (as nominal defendant) against certain of Citigroup's current and former directors, and certain current and former officers. A stipulation to stay and consolidate this action with the Supreme Court of the State of New York action captioned IN RE CITIGROUP INC. DERIVATIVE LITIGATION is pending. Additional information concerning this action is publicly available in court filings under the docket number 656930/2022 (N.Y. Sup. Ct.) (Schecter, J.).

On August 2, 2022, a shareholder derivative action captioned LIPSHUTZ ET AL. v. COSTELLO ET AL. was filed in the United States District Court for the Eastern District of New York, purportedly on behalf of Citigroup (as nominal defendant) against Citigroup's current directors. The action raises substantially the same claims and allegations as IN RE CITIGROUP INC. SHAREHOLDER DERIVATIVE LITIGATION. The LIPSHUTZ action additionally asserts that plaintiffs made a litigation demand on the Citigroup Board of Directors and that the demand was wrongfully refused. Defendants moved to transfer the new action to the United States District Court for the Southern District of New York. Additional information concerning this action is publicly available in court filings under the docket number 22 Civ. 4547 (E.D.N.Y.) (Kovner, J.).

Beginning in October 2020, three putative class action complaints were filed in the United States District Court for the Southern District of New York against Citigroup and certain of its current and former officers, asserting violations of Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 in connection with defendants' alleged misstatements concerning Citigroup's internal controls. The actions were later consolidated under the case name IN RE CITIGROUP SECURITIES LITIGATION. The consolidated complaint later added certain of Citigroup's current and former directors as defendants. Defendants have moved to dismiss the consolidated amended complaint. On March 24, 2023, the United States District Court for the Southern District of New York granted defendants' motion to dismiss without prejudice. Additional information concerning this action is publicly available in court filings under the docket number 1:20-CV-9132 (S.D.N.Y.) (Preska, J.).

Sovereign Securities Matters

Regulatory Actions: Government and regulatory agencies are conducting investigations or making inquiries regarding Citigroup's sales and trading activities in connection with sovereign and other government-related securities. Citigroup is cooperating with these investigations and inquiries.

On May 24, 2023, the UK Competition & Markets Authority (CMA) announced that it has provisionally found that Citigroup, CGML and four other banks unlawfully shared information related to the buying and selling of British pound sterling-denominated government bonds issued by the United Kingdom. The CMA further announced that Citigroup and CGML applied for leniency and had entered into a settlement agreement with the CMA.

Antitrust and Other Litigation: In 2015, putative class actions filed against CGMI and other defendants were consolidated under the caption IN RE TREASURY SECURITIES AUCTION ANTITRUST LITIGATION in the United States District Court for the Southern District of New York. Plaintiffs allege that defendants colluded to fix U.S. treasury auction bids by sharing competitively sensitive information ahead of the auctions, and that defendants colluded to boycott and prevent the emergence of an anonymous, all-to-all electronic trading platform in the U.S. Treasuries secondary market. Plaintiffs assert claims under antitrust laws, and seek damages, including treble damages where authorized by statute, and injunctive relief. In March 2021, the court granted defendants' motion to dismiss, without prejudice. In May 2021, plaintiffs filed an amended consolidated complaint. In June 2021, certain defendants, including CGMI, moved to dismiss the amended complaint. On March 31, 2022, the court dismissed the amended complaint with prejudice, and the plaintiffs have appealed that decision to the United States Court of Appeals for the Second Circuit. Additional information concerning this action is publicly available in court filings under the docket number 15-MD-2673 (S.D.N.Y.) (Gardephe, J.).

In 2017, purchasers of supranational, sub-sovereign and agency (SSA) bonds filed a proposed class action on behalf of direct and indirect purchasers of SSA 296 bonds against Citigroup, Citibank, CGMI, CGML, Citibank Canada, Citigroup Global Markets Canada, Inc. and other defendants, captioned JOSEPH MANCINELLI, ET AL. v. BANK OF AMERICA CORPORATION, ET AL., in the Federal Court in Canada. Plaintiffs have filed an amended claim that alleges defendants manipulated, and colluded to manipulate, the SSA bonds market, asserts claims for breach of the Competition Act, breach of foreign law, civil conspiracy, unjust enrichment, waiver of tort and breach of contract, and seeks compensatory and punitive damages, among other relief. Additional information concerning this action is publicly available in court filings under the docket number T-1871-17 (Fed. Ct.).

In 2018, a putative class action was filed against Citigroup, CGMI, Citigroup Financial Products Inc., Citigroup Global Markets Holdings Inc., Citibanamex, Grupo Banamex and other banks, captioned IN RE MEXICAN GOVERNMENT BONDS ANTITRUST LITIGATION, in the United States District Court for the Southern District of New York. The complaint alleges that defendants colluded in the Mexican sovereign bond market. In September 2019, the court granted defendants' motion to dismiss. In December 2019, plaintiffs filed an amended complaint against Citibanamex and other market makers in the Mexican sovereign bond market. Plaintiffs no longer assert any claims against Citigroup or any other U.S. Citi affiliates. The amended complaint alleges a conspiracy to fix prices in the Mexican sovereign bond market, asserts antitrust and unjust enrichment claims, and seeks treble damages, restitution and injunctive relief. In February 2020, certain defendants, including Citibanamex, moved to dismiss the amended complaint. In June 2021, the court granted defendants' motion to dismiss, and the plaintiffs have appealed that decision to the United States Court of Appeals for the Second Circuit. Additional information concerning this action is publicly available in court filings under the docket numbers 18-CV-2830 (S.D.N.Y.) (Oetken, J.) and 22-2039 (2d Cir.).

In February 2021, purchasers of Euro-denominated sovereign debt issued by European central governments added CGMI, CGML and others as defendants to a putative class action, captioned IN RE EUROPEAN GOVERNMENT BONDS ANTITRUST LITIGATION, in the United States District Court for the Southern District of New York. Plaintiffs allege that defendants engaged in a conspiracy to inflate prices of European government bonds in primary market auctions and to fix the prices of European government bonds in secondary markets. Plaintiffs assert a claim under the Sherman Act and seek treble damages and attorneys' fees. On March 14, 2022, the court granted defendants' motion to dismiss the fourth amended complaint as to certain defendants, but denied defendants' motion to dismiss as to other defendants, including CGMI and CGML. On June 16, 2022, the court denied certain defendants' respective motions for reconsideration of the court's denial of defendants' motion to dismiss. In November 2022, plaintiffs moved for leave to amend the complaint. Additional information concerning this action is publicly available in court filings under the docket number 19-CV-2601 (S.D.N.Y.) (Marrero, J.).

On June 16, 2023, purchasers of British pound sterling-denominated government bonds issued by the United Kingdom filed a proposed class action against CGMI, CGML and others, captioned OKLAHOMA FIREFIGHTERS PENSION AND RETIREMENT SYSTEM v. DEUTSCHE BANK AKTIENGESELLSCHAFT (F/K/A DEUTSCHE BANK AG), ET AL., in the United States District Court for the Southern District of New York. Plaintiffs allege that defendants engaged in a conspiracy to inflate prices of United Kingdom government bonds in secondary markets. Plaintiffs assert a claim under the Sherman Act and seek treble damages and attorneys' fees. Additional information relating to this action is publicly available in court filings under the docket number 1:23-cv-05095 (JGK).

Transaction Tax Matters

Citigroup and Citibank are engaged in litigation or examinations with non-U.S. tax authorities concerning the payment of transaction taxes and other non-income tax matters.

Variable Rate Demand Obligation Litigation

In 2019, the plaintiffs in the consolidated actions CITY OF PHILADELPHIA v. BANK OF AMERICA CORP, ET AL. and MAYOR AND CITY COUNCIL OF BALTIMORE v. BANK OF AMERICA CORP., ET AL. filed a consolidated complaint naming as defendants Citigroup, Citibank, CGMI, CGML and numerous other industry participants. The consolidated complaint asserts violations of the Sherman Act, as well as claims for breach of contract, breach of fiduciary duty, and unjust enrichment, and seeks damages and injunctive relief based on allegations that defendants served as remarketing agents for municipal bonds called variable rate demand obligations (VRDOs) and colluded to set artificially high VRDO interest rates. On November 6, 2020, the court granted in part and denied in part defendants' motion to dismiss the consolidated complaint.

In June 2021, the Board of Directors of the San Diego Association of Governments, acting as the San Diego County Regional Transportation Commission, filed a parallel putative class action against the same defendants named in the already pending nationwide consolidated class action. The two actions were consolidated and in August 2021, the plaintiffs in the nationwide putative class action filed a consolidated amended complaint, captioned THE CITY OF PHILADELPHIA, MAYOR AND CITY COUNCIL OF BALTIMORE, THE BOARD OF DIRECTORS OF THE SAN DIEGO ASSOCIATION OF GOVERNMENTS, ACTING AS THE SAN DIEGO COUNTY REGIONAL TRANSPORTATION COMMISSION v. BANK OF AMERICA CORP., ET AL. In September 2021, defendants moved to dismiss the consolidated amended complaint in part. On June 28, 2022, the court granted in part and denied in part defendants' partial motion to dismiss the consolidated amended complaint. On October 27, 2022, plaintiffs filed a motion to certify a class of persons and entities who, from February 2008 to November 2015, paid interest rates on VRDOs with respect to the antitrust claim. The plaintiffs also moved to certify a subclass of individuals who entered into remarketing agreements with the defendants during that same period. Additional information concerning this action is publicly available in court filings under the docket number 19-CV-1608 (S.D.N.Y.) (Furman, J.).

Settlement Payments

Payments required in any settlement agreements described above have been made or are covered by existing litigation or other accruals.