# CITIGROUP GLOBAL MARKETS HOLDINGS INC.

## ANNUAL FINANCIAL REPORT

## FOR THE YEAR ENDED ENDED DECEMBER 31, 2020

April 30, 2021

**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/ Shawn K. Feeney
Shawn K. Feeney
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. As used in this description, **CGMHI**, **Citigroup Global Markets**, and the **Company** refer to CGMHI and its consolidated subsidiaries. Citigroup Global Markets operates in the *Institutional Clients Group (ICG)* business 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 more than 160 countries and jurisdictions.

Citigroup currently operates, for management reporting purposes, via two primary business segments: *Global Consumer Banking* and *Institutional Clients Group (ICG)*, with the remaining operations in *Corporate/Other*.

The principal offices of CGMHI are located at 388 Greenwich Street, New York, NY, 10013, telephone number (212) 559-1000. 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 *Banking* and *Markets and securities services*. *ICG* provides corporate, institutional, public sector and high-net-worth 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, private banking, 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* 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, is recorded as *Net interest and dividends*.

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. *ICG* does not separately track the impact on total *Markets* revenues of the volume of transactions, bid/offer spreads, fair value changes of product inventory positions and economic hedges because, as noted above, these components are interrelated and are not deemed useful or necessary to manage the *Markets* businesses at an aggregate 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 96 countries and jurisdictions. At December 31, 2020, *ICG* had $1.7 trillion in assets and $924 billion in deposits, while two of its businesses—securities services and issuer services—managed $24.0 trillion and $20.3 trillion in assets under custody as of December 31, 2020 and 2019, respectively.

## 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 a party's becoming a materially weaker credit 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, 2020, filed with the U.S. Securities and Exchange Commission on the 26th day of February, 2021.)

The following discussion sets forth 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 Citi may face.

### STRATEGIC RISKS

***Rapidly Evolving Challenges and Uncertainties Related to the COVID-19 Pandemic Will Likely Continue to Have Negative Impacts on Citi's Businesses and Results of Operations and Financial Condition.***

The COVID-19 pandemic has become global, affecting all of the countries and jurisdictions where Citi operates. The pandemic and responses to it have had, and will likely continue to have, severe impacts on global health and economic conditions. These impacts will continue to evolve by region, country or state, largely depending on the duration and severity of the public health consequences, including the duration and further spread of the coronavirus; the potential for new variants of the virus; timely development, production and distribution of effective vaccines; availability of therapeutics; public response; and government actions. The impacts to global economic conditions include, among others:

- the institution of social distancing and restrictions on businesses and the movement of the public in and among the U.S. and other countries;
- closures, reduced activity and failures of many businesses, leading to loss of revenues and net losses;
- sharply reduced U.S. and global economic output, resulting in significant losses of employment and lower consumer spending, cards purchase sales and loan volumes;
- lower interest rates;
- disruption of global supply chains; and
- significant disruption and volatility in financial markets.

The pandemic has had, and will likely continue to have, negative impacts on Citi's businesses and overall results of operations and financial condition, which could be material. The extent of the impact on Citi's operations and financial performance, including its ability to execute its business strategies and initiatives, will continue to depend significantly on future developments in the U.S. and globally, which are uncertain and cannot be predicted, including the course of the virus, as well as any delay or weakness in the economic recovery or further economic downturn.

Ongoing legislative and regulatory changes in the U.S. and globally to address the economic impact from the pandemic, such as consumer and corporate relief measures and continued lower interest rates, could further affect Citi's businesses, operations and financial performance. Citi could also face challenges, including legal and reputational, and scrutiny in its implementation of and ongoing efforts to provide these relief measures. Such implementations and efforts have resulted in, and may continue to result in, litigation, including class actions, and regulatory and government actions and proceedings. Such actions may result in judgments, settlements, penalties and fines adverse to Citi. In addition, the different types of government actions could vary in scale and duration across jurisdictions and regions with varying degrees of effectiveness.

The impact of the pandemic on Citi's consumer and corporate borrowers will also vary by sector or industry, with some borrowers experiencing greater stress levels, which could lead to increased pressure on their results of operations and financial condition, increased borrowings or credit ratings downgrades, thus likely leading to higher credit costs for Citi. In addition, stress levels ultimately experienced by Citi's borrowers may be different from and more intense than assumptions made in earlier estimates or models used by Citi, resulting in a further increase in Citi's ACL or net credit losses, particularly as consumer and small business relief programs expire and the benefits of fiscal stimulus start to diminish.

The pandemic may not be contained for an extended period of time. A prolonged health crisis could further reduce economic activity in the U.S. and other countries, resulting in additional declines in employment and business and consumer confidence. These factors could further negatively impact global economic activity and markets; cause a continued decline in the demand for Citi's products and services and in its revenues; further increase Citi's credit and other costs; and may result in impairment of long-lived assets or goodwill. These factors could also cause a continued increase in Citi's balance sheet, risk-weighted assets and ACL, resulting in a decline in regulatory capital ratios or liquidity measures, as well as regulatory demands for higher capital levels and/or limitations or reductions in capital distributions (such as common share repurchases and dividends). Moreover, any disruption or failure of Citi's performance of, or its ability to perform, key business functions, as a result of the continued spread of COVID-19 or otherwise, could adversely affect Citi's operations.

Any disruption to, breaches of or attacks on Citi's information technology systems, including from cyber incidents, could have adverse effects on Citi's businesses (see the operational processes and systems and cybersecurity risk factors below). These systems are supporting a substantial portion of Citi's colleagues who have been affected by local pandemic restrictions and have been forced to work remotely. In addition, these systems interface with and depend on third-party systems, and Citi could experience service denials or disruptions if demand for such systems were to exceed capacity or if a third-party system fails or experiences any interruptions. Citi has also taken measures to maintain the health and safety of its colleagues; however, these measures could result in increased expenses, and widespread illness could negatively affect staffing within certain functions, businesses or geographies. In addition, Citi's ability to recruit, hire and onboard colleagues in key areas could be negatively impacted by global pandemic restrictions (see the qualified colleagues risk factor below).

Further, it is unclear how the macroeconomic business environment or societal norms may be impacted after the pandemic. The post-pandemic environment may undergo unexpected developments or changes in financial markets, the fiscal, monetary, tax and regulatory environments and consumer customer and corporate client behavior. These developments and changes could have an adverse impact on Citi's results of operations and financial condition. Ongoing business and regulatory uncertainties and changes may make Citi's longer-term business, balance sheet and strategic and budget planning more difficult or costly. Citi and its management and businesses may also experience increased or different competitive and other challenges in this environment. To the extent that it is not able to adapt or compete effectively, Citi could experience loss of business and its results of operations and financial condition could suffer (see the competitive challenges risk factor below).

***Citi's Ability to Return Capital to Common Shareholders Consistent with Its Capital Planning Efforts and Targets Substantially Depends on Regulatory Capital Requirements, Including the Results of the CCAR Process and 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 Stress Capital Buffer (SCB), which is based upon the results of the CCAR process required by the Federal Reserve Board (FRB) as well as the supervisory stress tests required under the Dodd-Frank Act (as described in more detail below). Citi's ability to return capital also depends on its results of operations and financial condition, forecasts of macroeconomic conditions and effectiveness in managing its level of risk-weighted assets under both the Advanced Approaches and the Standardized Approach, Supplementary Leverage Ratio (SLR) and global systemically important bank holding company (GSIB) surcharge, which has been made more challenging due to the pandemic-related elevated levels of liquidity in the financial system (see macroeconomic challenges and uncertainties risk factor below).

Citi's ability to accurately predict, interpret or explain to stakeholders the results of the CCAR process, and thus to address any market or investor perceptions, may be limited as the FRB's assessment of Citi's capital adequacy is conducted using the FRB's proprietary stress test models. In addition, all CCAR firms, including Citi, will continue to be subject to a rigorous evaluation of their capital planning practices, including, but not limited to, governance, risk management and internal controls.

The FRB has stated that it expects leading capital adequacy practices to continue to evolve and to likely be determined by the FRB each year as a result of its 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 (PPNR) and stress losses, and the addition of components deemed important by the FRB.

Beginning January 1, 2022, Citi will be required to phase into regulatory capital at 25% per year the changes in retained earnings, deferred tax assets and ACL determined upon the January 1, 2020 CECL adoption date as well as subsequent changes in the ACL between January 1, 2020 and 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 for the 2021 supervisory stress test cycle, and to evaluate appropriate future enhancements to this framework as best practices for implementing the current expected credit losses (CECL) methodology are developed. The impacts on Citi's capital adequacy of the FRB's incorporation of CECL in 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 FRB has integrated the annual stress testing requirements with ongoing regulatory capital requirements. For Citigroup, the SCB rule replaced the fixed 2.5% Capital Conservation Buffer in Citi's ongoing regulatory capital requirements for the Standardized Approach capital ratios. The SCB equals the maximum decline in Citi's Common Equity Tier 1 Capital ratio under a 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%. Effective October 1, 2020, Citi's SCB was 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, or possibly more frequently, based on the supervisory stress test results, thus potentially resulting in volatility in the calculation of the SCB. Similar to the Capital Conservation Buffer, a breach of the SCB would 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 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, Its Management and Its Businesses Must Continually Review, Analyze and Successfully Adapt to Ongoing Regulatory and Legislative Uncertainties and Changes in the U.S. and Globally.***

Despite the adoption of final regulations and laws in numerous areas impacting Citi and its businesses over the past several years, Citi, its management and its businesses continually 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, various examples include, but are not limited to (i) potential fiscal, monetary, regulatory, tax and other changes arising from the U.S. federal government and other governments, including as a result of the new U.S. presidential administration, regulatory leadership and Congress or in response to the pandemic; (ii) potential changes to various aspects of the regulatory capital framework and requirements applicable to Citi (see the capital return risk factor above); and (iii) the future legislative and regulatory framework resulting from the U.K.'s exit from the European Union (EU), including, among others, with respect to financial services (see "Managing Global Risk—Strategic Risk—U.K.'s Future Relationship with the EU" below). When referring to "regulatory," Citi is including both formal regulation and the views and expectations of its regulators in their supervisory roles.

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. 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 post-crisis 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.

Moreover, 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 the scope, interpretation, timing, structure or approach, leading to inconsistent or even conflicting requirements, including within a single jurisdiction. For example, in May 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.

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).

***Citi's Continued Investments and Efficiency Initiatives May Not Be as Successful as It Projects or Expects.***

Citi continues to leverage its scale and make incremental investments to deepen client relationships, increase revenues and lower expenses, as well as significant investments to transform its infrastructure, risk management and controls and further enhance safety and soundness (for additional information, see the legal and regulatory proceedings risk factor below). For example, Citi continues to make investments to enhance its digital capabilities across the franchise, including digital platforms and mobile and cloud-based solutions. Citi also has been making investments across the firm, such as in the U.S. consumer franchise, Citi's wealth management businesses and treasury and trade solutions, securities services and other businesses in *ICG*, including implementing new capabilities and partnerships. Further, Citi has been pursuing efficiency improvements through various technology and digital initiatives, organizational simplification and location strategies.

Citi's investments and efficiency initiatives are being undertaken as part of its overall strategy to meet operational and financial objectives, including, among others, those relating to shareholder returns. Additionally, in connection with Citi's CEO transition, Citi is undergoing an evaluation of its strategy, which may result in, among other things, additional investments as well as changes in or exits of businesses. There is no guarantee that these or other initiatives Citi may pursue will be as productive or effective as Citi expects, or at all. Additionally, such initiatives could result in losses, charges or other negative financial impacts. Citi's investment and efficiency 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. Moreover, Citi's ability to achieve expected returns on its investments and costs savings depends, in part, on factors that it cannot control, such as macroeconomic conditions, including the negative impacts related to the pandemic, customer, client and competitor actions and ongoing regulatory changes, among others.

***Uncertainties Regarding the Transition Away from or Discontinuance of the London Inter-Bank Offered Rate (LIBOR) or Any Other Interest Rate Benchmark Could Have Adverse Consequences for Market Participants, Including Citi.***

LIBOR continues to be widely used as a "benchmark" or "reference rate" across financial products and markets globally. Based on statements from U.S. and U.K. authorities, it is expected, however, that all non-U.S. dollar LIBOR tenors and some USD LIBOR tenors will cease after December 31, 2021, while most U.S. dollar LIBOR tenors will continue to be quoted through June 2023. As a result of LIBOR's wide use, there can be no assurance that market participants, including Citi, will be able to successfully modify all outstanding LIBOR-based securities or products or be sufficiently prepared for all of the uncertainties resulting from LIBOR's discontinuance. In addition, following guidance provided by the Financial Stability Board, regulators have suggested reforming or replacing other benchmark rates with alternative reference rates. The transition away from and discontinuance of LIBOR or any other benchmark rate presents various uncertainties, risks and challenges to holders of LIBOR-based securities and products as well as financial markets and institutions, including Citi. These include, among others, the pricing, liquidity, value of, return on and market for financial instruments and contracts that reference LIBOR or any other benchmark rate, including any alternative benchmark rate.

Despite ongoing actions by Citi to prepare for the transition away from LIBOR (see "Managing Global Risk—Strategic Risk—LIBOR Transition Risk" below), Citi has continued to meet market demand by trading, holding or otherwise using a substantial amount of securities or products that reference LIBOR, including, among others, derivatives, corporate loans, commercial and residential mortgages, credit cards, securitized products and other structured securities. The transition away from and discontinuation of LIBOR for these securities and products presents significant operational, legal, reputational or compliance, financial and other risks to Citi.

For example, the LIBOR transition presents various challenges related to contractual mechanics of existing floating rate financial instruments and contracts that reference LIBOR and mature after discontinuance of the relevant LIBOR. Certain of these legacy instruments and contracts do not provide for alternative benchmark rates, which makes it unclear what the future benchmark rates would be after LIBOR's cessation. Further, Citi may not be able to amend certain instruments and contracts due to an inability to obtain sufficient required consent from counterparties or security holders. Even if the instruments and contracts provide for a transition to alternative benchmark rates, the new benchmark rates may, particularly in times of financial stress, significantly differ from the prior rates. As a result, Citi may need to proactively address any contractual uncertainties or rate differences in such instruments and contracts, which would likely be both time consuming and costly, and may not ultimately be successful.

In addition, the transition away from and discontinuance of LIBOR could result in disputes, including litigation, involving holders of outstanding instruments and contracts that reference LIBOR, whether or not the underlying documentation provides for alternative benchmark rates. Citi will also need to further invest in and develop significant internal systems and infrastructure to transition to alternative benchmark rates to manage its businesses and support its clients.

***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, 2020, Citi's net DTAs were $24.8 billion, net of a valuation allowance of $5.2 billion, of which $9.5 billion was excluded from Citi's Common Equity Tier 1 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, 2020, $4.4 billion related to foreign tax credit carry-forwards (FTCs), net of a valuation allowance. The carry-forward utilization period for FTCs is ten years and represents the most time-sensitive component of Citi's DTAs. The FTC carry-forwards at December 31, 2020 expire over the period of 2021–2029. 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, the continued impact of the pandemic and other 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 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 the Relevant Governmental Authorities, Which Could Result in 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, including the Tax Cuts and Jobs Act (Tax Reform), to its entities, operations and businesses. In addition, Citi is subject to litigation or examinations with U.S. and non-U.S. tax authorities regarding non-income-based tax matters. Citi's interpretations or application of the tax laws, including with respect to Tax Reform, 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.

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

During 2020, emerging markets revenues accounted for approximately 34% 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*). Although Citi continues to pursue its target client strategy, Citi's presence in the emerging markets subjects it to various risks, such as limitations of hedges on foreign investments; foreign currency volatility, including devaluations, sovereign volatility, election outcomes, regulatory changes and political events; foreign exchange controls; limitations on foreign investment; sociopolitical instability (including from hyperinflation); fraud; nationalization or loss of licenses; business restrictions; 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 and currency controls, such as Argentina, that limit its ability to convert local currency into U.S. dollars and/or transfer funds outside of those countries.

Moreover, if the economic situation in an emerging markets country where Citi operates were to deteriorate below a certain level, U.S. regulators 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 have occurred in certain regions and countries, including *Asia*, the Middle East and *Latin America*, 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 markets economies as well as impacting Citi's businesses and results of operations in affected countries).

Citi's emerging markets presence also increases its compliance and regulatory risks and costs. For example, Citi's operations in emerging markets, including facilitating cross-border transactions on behalf of its clients, subject it to higher compliance risks under U.S. regulations that are primarily focused on various aspects of global corporate activities, such as anti-money laundering regulations and the Foreign Corrupt Practices Act. These risks can be more acute in less developed markets and thus require substantial investment in compliance infrastructure or could result in a reduction in certain of Citi's business activities. Any failure by Citi to comply with applicable U.S. regulations, as well as the regulations in the countries and markets in which it operates as a result of its global footprint, could result, even if the regulations require inconsistent results, in legal or regulatory proceedings, fines, penalties, injunctions or other similar restrictions, many of which could negatively impact Citi's results of operations and reputation (see the implementation and interpretation of regulatory changes and legal and regulatory proceedings risk factors below).

***A Deterioration in or Failure to Maintain Citi's Co-Branding or Private Label Credit Card Relationships, Including as a Result of Any Bankruptcy or Liquidation, Could Have a Negative Impact on Citi's Results of Operations or Financial Condition.***

Citi has co-branding and private label relationships through its Citi-branded cards and Citi retail services credit card businesses with various retailers and merchants globally, whereby in the ordinary course of business Citi issues credit cards to customers of the retailers or merchants. Citi's co-branding and private label agreements provide for shared economics between the parties and generally have a fixed term. The five largest relationships across both businesses in *North America GCB* constituted an aggregate of approximately 10% of Citi's revenues in 2020.

Over the last several years, a number of U.S. retailers have continued to experience declining sales, which has resulted in significant numbers of store closures and, in a number of cases, bankruptcies, as retailers attempt to cut costs and reorganize. The pandemic has exacerbated these trends and generally resulted in a challenging operating environment for retailers and merchants. In addition, as has been widely reported, competition among card issuers, including Citi, for these relationships is significant, and it has become increasingly difficult in recent years to maintain such relationships on the same terms or at all.

Citi's co-branding and private label relationships could continue to be negatively impacted by, among other things, the general economic environment; declining sales and revenues, partner store closures, government imposed restrictions, reduced air and business travel, or other operational difficulties of the retailer or merchant; termination due to a contractual breach by Citi or by the retailer or merchant; or other factors, including bankruptcies, liquidations, restructurings, consolidations or other similar events, whether due to the ongoing impact of the pandemic or otherwise (see the pandemic-related risk factor above).

While various mitigating factors could be available to Citi if any of the above events were to occur—such as by replacing the retailer or merchant or offering other card products—these events, particularly bankruptcies or liquidations, could negatively impact the results of operations or financial condition of Citi-branded cards, Citi 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 Identified or Guidance Provided by the FRB and FDIC 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 December 17, 2019, the FRB and FDIC issued feedback on the resolution plans filed on July 1, 2019 by the eight U.S. GSIBs, including Citi. The FRB and FDIC identified one shortcoming, but no deficiencies, in Citi's resolution plan relating to governance mechanisms. For additional information on Citi's resolution plan submissions, see "Managing Global Risk—Liquidity Risk" below.

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 the Performance of Its Individual Businesses Could Be Negatively Impacted if Citi Is Not Able to Effectively Compete for, Retain and Motivate Highly Qualified Colleagues.***

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 global strategy 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 strategy 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 banking industry generally is subject to more comprehensive regulation of employee compensation than other industries, including deferral and clawback requirements for incentive compensation. Citi often competes for talent with entities that are not subject to similar regulatory requirements, including, among others, technology companies. Other factors that could impact Citi's ability to attract, retain and motivate colleagues include its reputation, culture and the management and leadership of the Company and each of its lines of business, presence in a particular market or region and the professional opportunities it offers.

***Financial Services Companies and Others as well as Emerging Technologies Pose Increasingly Competitive Challenges to Citi.***

Citi operates in an increasingly competitive 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. Emerging technologies have the potential to intensify competition and accelerate disruption in the financial services industry.

Citi competes with financial services companies in the U.S. and globally that continue to develop and introduce new products and services. In recent years, non-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. In addition, as discussed above, it is unclear how the macroeconomic business environment or societal norms may be impacted as a result of the pandemic. Citi may experience increased or different competitive and other challenges in a post-pandemic environment.

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 risk factor above.

## MARKET AND OTHER RISKS

***Macroeconomic, Geopolitical and Other Challenges and Uncertainties Globally Could Have a Negative Impact on Citi's Businesses and Results of Operations.***

In addition to the significant macroeconomic challenges posed by the pandemic (see the pandemic-related risk factor above), Citi has experienced, and could experience in the future, negative impacts to its businesses and results of operations as a result of other macroeconomic, geopolitical and other challenges, uncertainties and volatility. For example, governmental fiscal and monetary actions, or expected actions, such as changes in interest rate policies and any program implemented by a central bank to change the size of its balance sheet, could significantly impact interest rates, economic growth rates, the volatility of global financial markets, foreign exchange rates and global capital flows. Additional areas of uncertainty include, among others, geopolitical tensions and conflicts, protracted or widespread trade tensions, natural disasters, other pandemics and election outcomes. 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.

In 2020, due to the pandemic, the FRB and other central banks took numerous actions to support the global economy, including by further reducing their benchmark interest rates and in certain instances providing additional liquidity to the financial system. Interest rates on loans Citi makes to customers and clients are typically based off or set at a spread over a benchmark interest rate, including the U.S. benchmark interest rate, and are therefore likely to decline as benchmark rates decline. By contrast, the interest rates at which Citi pays depositors are already low and unlikely to decline much further. Consequently, declining or continued low interest rates for loans and largely unchanged deposit rates would likely further compress Citi's net interest revenue. Citi's net interest revenue could also be adversely affected due to a flattening of the interest rate yield curve (e.g., a lower spread between shorter-term versus longer-term interest rates), 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.

These and additional global macroeconomic, geopolitical and other challenges, uncertainties and volatilities have negatively impacted, and could continue to negatively impact, Citi's businesses, results of operations and financial condition, including its credit costs, revenues across *ICG* and *GCB* and *AOCI* (which would in turn negatively impact Citi's book and tangible book value).

## OPERATIONAL RISKS

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

Citi's global operations rely heavily on 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. For example, 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, 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. These risks have been exacerbated during the pandemic, when a substantial portion of Citi's colleagues have worked remotely and customers and clients have increased their use of online banking and other platforms (for additional information, see the cybersecurity risk factor below and pandemic-related risk factor above).

Although Citi has continued to upgrade its operational systems to automate processes and enhance efficiencies, operational incidents are unpredictable and can arise from numerous sources, not all of which are within Citi's control, including, among others, human error, such as processing errors, fraud or malice on the part of employees or third parties, 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. 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 loss. 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 cyber attacks.

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 proceedings, fines and other costs (see the legal and regulatory proceedings risk factor below).

For information on Citi's management of operational risk, see "Managing Global Risk—Operational Risk" below.

***Citi's and Third Parties' Computer Systems and Networks Have Been, and Will Continue to Be, Susceptible to an Increasing Risk of Continually Evolving, Sophisticated Cybersecurity Activities 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, unavailability of service, computer viruses or other malicious code, cyber attacks and other similar events. These threats can arise from external parties, including cyber criminals, cyber terrorists, hacktivists and nation state actors, as well as insiders who knowingly or unknowingly engage in or enable malicious cyber activities.

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 cyber attacks 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 the provisions to adequately offset any losses Citi may incur from third-party cyber incidents.

Citi has been subject to attempted and sometimes successful cyber attacks 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 an attempt 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 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 methods used to cause cyber attacks change frequently or, in some cases, are not recognized until launched or even later, Citi may be unable to implement effective preventive measures or proactively address these methods until they are discovered. 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 cyber attacks or data breaches.

Cyber incidents can result in the disclosure of personal, confidential or proprietary customer or client 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. 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 could also result from cyber incidents (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 cost of which could be immeasurable.

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

***Changes to or the Application of Incorrect Assumptions, Judgments or Estimates in Citi's Financial Statements Could Cause Significant Unexpected Losses or Impacts in the Future.***

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 exposures; valuation of DTAs; and the fair values of certain assets and liabilities, such as goodwill or any other asset for impairment. 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.

For example, the CECL methodology, adopted as of January 1, 2020, 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 the U.S. Real GDP, and the credit indicators, composition and other characteristics of Citi's loan and other applicable portfolios. These model assumptions and forecasted macroeconomic conditions will change over time, whether due to the pandemic or otherwise, resulting in greater variability in Citi's ACL compared to its provision for loan losses under the previous GAAP methodology, and, thus, impact its results of operations, as well as regulatory capital, including as the CECL phase-in begins as of January 1, 2022.

Moreover, Citi has incurred losses related to its foreign operations that are reported in the foreign currency translation adjustment (CTA) components of *Accumulated other comprehensive income (loss) (AOCI)*. In accordance with U.S. GAAP, a sale or substantial liquidation of any foreign operations, such as those related to Citi's 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.

***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 or other regulators, 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 risk models 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 even 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 from untimely, inaccurate or incomplete processes caused by unintentional human error.

In addition, in October 2020, Citigroup and Citibank entered into consent orders with the FRB and OCC that require Citigroup and Citibank to submit acceptable plans relating principally to making 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. 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. 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.***

Credit risk primarily arises from Citi's lending and other businesses in both *GCB* and *ICG*. 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 $289 billion and end-of-period corporate loans of $387 billion at year-end 2020.

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 pandemic-related, macroeconomic, geopolitical and other factors, among other things, can increase Citi's credit risk and credit costs (for additional information, see the pandemic-related, co-branding and private label credit card, macroeconomic challenges and uncertainties and emerging markets risk factors above).

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, rather than incurred 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. In addition, Citi's future allowance may be affected by seasonality of its cards portfolios based on historical evidence showing that (i) credit card balances typically decrease during the first and second quarters, as borrowers use tax refunds to pay down balances; and (ii) balances increase during the third and fourth quarters each year as payments are no longer impacted by tax refunds and the holiday season approaches. However these seasonal trends could be affected in 2021 due to the impacts of the pandemic, government stimulus and expiration of consumer and small business relief programs. For additional information, see the incorrect assumptions or estimates and changes to financial accounting and reporting standards risk factors above.

Concentrations of risk, particularly credit and market risks, can also increase Citi's risk of significant losses. As of year-end 2020, Citi's most significant concentration of credit risk was with the U.S. government and its agencies, which primarily results from trading assets and investments issued by the U.S. government and its agencies. In addition, 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 where Citi has large exposures or guarantees or unexpected market dislocations could cause Citi to incur significant losses.

**LIQUIDITY RISKS**

***The Maintenance of Adequate Liquidity and Funding Depends on Numerous Factors, Including Those Outside of Citi's Control, Such as Market Disruptions and Increases in Citi's Credit Spreads.***

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 inability to monetize available liquidity resources, whether due to the pandemic or otherwise. Citi competes with other banks and financial institutions for deposits, which represent Citi's most stable and lowest cost source of long-term funding. The competition for retail banking deposits has increased in recent years as a result of online banks and digital banking, among others. Furthermore, although Citi's has had robust deposit growth since the onset of the pandemic, it remains unclear how "sticky" (likely to remain at Citi) those deposits may be, particularly in a less accommodating environment.

Moreover, Citi's costs to obtain and access secured funding and long-term unsecured funding are directly related to its credit spreads. Changes in credit spreads are driven by both external market factors and factors specific to Citi, and can be highly volatile. For additional information on Citi's primary sources of funding, see "Managing Global Risk—Liquidity Risk" below.

Citi's ability to obtain funding may be impaired if other market participants are seeking to access the markets at the same time, or if market appetite declines, as is likely to occur in a liquidity stress event or other market crisis. A sudden drop in market liquidity could also cause a temporary or lengthier 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 based on their perceptions or the market conditions, which could further impair Citi's access to and cost of funding.

Additionally, as a holding company, Citi 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 regulatory or contractual restrictions on their ability to provide such payments, including any local regulatory stress test requirements. Limitations on the payments that Citi receives from its subsidiaries could also impact its liquidity.

***The Credit Rating Agencies Continuously Review the Credit Ratings of Citi and Certain of Its Subsidiaries, and a Ratings Downgrade Could Have a Negative Impact on Citi's Funding and Liquidity Due to Reduced Funding Capacity and Increased Funding Costs, Including Derivatives Triggers That Could Require Cash Obligations or Collateral Requirements.***

The credit rating agencies, such as Fitch, Moody's and S&P, continuously evaluate Citi and certain of its subsidiaries. Their ratings of Citi and its more significant subsidiaries' long-term/senior debt and short-term/commercial paper are based on a number of factors, including standalone financial strength, 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. A ratings downgrade could negatively impact Citi's ability to access the capital markets and other sources of funds as well as the costs of those funds, and its ability to maintain certain deposits. A ratings downgrade could also have a negative impact on Citi's funding and liquidity due to reduced funding capacity and the impact from derivative triggers, which could require Citi 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. Some entities could have ratings limitations on their permissible counterparties, of which Citi may or may not be aware.

Furthermore, a credit ratings downgrade could have impacts that may not be currently known to Citi or are not possible to quantify. 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 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 where it does business, 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, among other things, governance, infrastructure, data and risk management practices and controls. A failure to comply with these requirements and expectations or resolve any identified deficiencies could result in increased regulatory oversight and restrictions, enforcement proceedings, penalties and fines (for additional information, 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 across all of 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. Moreover, in some cases, there have been entirely new regulatory or legislative requirements or regimes, resulting in large volumes of regulation and potential uncertainty regarding regulatory expectations as to what is required in order to be in compliance.

Examples of regulatory or legislative changes that have resulted in increased compliance risks and costs include (i) a proliferation of 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 FRB's "total loss absorbing capacity" (TLAC) requirements. Additionally, the banking industry generally is being called upon to do more on the issues of social, economic and racial justice. This could result in additional regulatory requirements regarding banking services for underserved communities and individuals.

Increased and ongoing compliance requirements and uncertainties have resulted in higher compliance costs for Citi, in part due to an increase in risk, regulatory and compliance staff over the last several years despite a reduction in the overall employee population. Extensive and changing compliance requirements can also result in increased reputational and legal risks for Citi, as failure to comply with regulations and requirements, or failure to comply with regulatory expectations, can result in enforcement and/or regulatory proceedings, penalties and fines.

***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, investigations, consent orders and related compliance efforts, and other inquiries. Citi can 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.

The recent FRB and OCC consent orders require Citigroup and Citibank to submit acceptable plans to the FRB and OCC, on various timelines, relating principally to making improvements in various aspects of enterprise-wide risk management, compliance, data quality management and governance and internal controls. The consent orders require preparation of acceptable gap analyses that identify the required improvements and related root causes, as well as targeted action plans and quarterly progress reports detailing the results and status of the improvements. These improvements will result in significant investments by Citi during 2021 and afterwards, as an essential part of Citi's broader transformation efforts to enhance its infrastructure, governance, processes and risk and controls. Although there are no restrictions on Citi's ability to serve its clients, the Citibank consent order requires prior approval of any significant new acquisition, including any portfolio or business acquisition, excluding ordinary course transactions. Moreover, the Citibank consent order provides that the OCC has the right to assess future civil monetary penalties or take other supervisory and/or enforcement actions, including where the OCC determines Citibank has not made sufficient and sustainable progress to address the required improvements. 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 Federal Reserve 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. 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 different jurisdictions, as well as multiple civil litigation claims in multiple jurisdictions.

U.S. and non-U.S. regulators have been increasingly focused on "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. Banking regulators have also focused on the overall culture of financial services firms, including Citi.

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. Furthermore, the severity of the remedies sought in legal and regulatory proceedings to which Citi is subject has remained elevated. U.S. and certain international 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 corporate 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.

Further, 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. In addition, certain settlements are subject to court approval and may not be approved.

For additional information relating to Citi's legal and regulatory proceedings and matters, including Citi's policies on establishing legal accruals, see Note 27 to the Consolidated Financial Statements in Citi's 2020 Annual Report on Form 10-K.

## MANAGING GLOBAL RISK

### Overview

For Citi, effective risk management is of primary importance to its overall operations. Accordingly, Citi's risk management process has been designed to monitor, evaluate and manage the principal risks it assumes in conducting its activities. Specifically, the activities that Citi engages in, and the risks those activities generate, must be consistent with Citi's mission and value proposition, the key principles that guide it and Citi's risk appetite. As discussed above, Citi is continuing its efforts to comply with the Federal Reserve Board 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.

Risk management must be built on a foundation of ethical culture. 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' interests, create economic value and are always systemically responsible. In addition, Citi evaluates colleagues' performance against behavioral expectations set out in Citi's leadership standards, which were designed in part to effectuate Citi's mission and value proposition. Other culture-related efforts in connection with conduct risk, ethics and leadership, escalation and treating customers fairly help Citi to execute its mission and value proposition.

Citi's Company-wide risk governance framework consists of the risk management practices that include a risk governance structure and the firm's key policies, processes, personnel and control systems through which Citi identifies, measures, monitors, and controls risks such that the Company's risk taking is consistent with its strategy and risk appetite. It also emphasizes Citi's risk culture and lays out standards, procedures and programs that are designed to set, reinforce and enhance the Company's risk culture, integrate its values and conduct expectations into the organization, providing colleagues with tools to assist them with making prudent and ethical risk decisions and to escalate issues appropriately.

Citi selectively takes risks in support of its underlying customer-centric strategy. Citi's objective is to ensure that those risks are consistent with its mission and value proposition, including its commitment to responsible finance. Citi's risk mission is taking intelligent risk with shared responsibility, without forsaking individual accountability.

Citi's risk appetite framework sets boundaries for risk taking and consists of a set of risk appetite statements that articulate the aggregate level and types of risk that Citi is willing to accept in order to achieve its strategic objectives and business plan and includes governance processes through which the risk appetite is established, communicated and monitored, and its breaches are escalated and resolved. It is built on quantitative boundaries, which include goals, risk limits and thresholds, and on qualitative principles that guide behavior. Citi's risk appetite framework is enterprise-wide and applicable across products, functions and geographies and comprehensively covers the major categories of risk facing the firm.

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 the firm 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 the firm. This risk may be exacerbated by the inability of the firm to access funding sources or monetize assets and the composition of liability funding and liquid assets.
- *Market risk (including price risk and interest rate risk)* is the risk of loss arising from changes in the value of Citi's assets and liabilities or reduced net interest revenues resulting from changes in market variables, such as interest rates, exchange rates, equity and commodity prices or credit spreads. Losses can be exacerbated by the negative convexity of positions, as well as the presence of basis or correlation risks.
- *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 the failure of the firm to comply with laws, regulations, prudent ethical standards and contractual obligations in any aspect of the firm's business, but excludes strategic and reputation risks (see below).
- *Compliance risk* is the risk to current or projected financial conditions and resilience arising from violations of laws, rules or regulations, or from non-conformance with prescribed practices, internal policies and procedures or ethical standards. It also includes the exposure to litigation (known as legal risk) from all aspects of banking, traditional and non-traditional.
- *Reputational risk* is the risk to current or projected financial conditions and resilience arising from negative public opinion. This risk may impair Citi's competitiveness by affecting its ability to establish new relationships or services or continue servicing existing relationships.
- *Strategic risk* is the risk to current or anticipated earnings, capital, or franchise or enterprise value arising from poor, but authorized, business decisions (in compliance with regulations, policies and procedures), an inability to adapt to changes in the operating environment, or other external factors that may impair the ability to carry out a business strategy. Strategic risk also includes:
  - *Country risk*, which is the risk that conditions in a country (which may be precipitated by developments within or external to a country) will impair the value of Citi's franchise or will adversely affect the ability of obligors within that country to honor their obligations to Citi. Country risk includes sovereign defaults, banking crises, currency crises, currency convertibility and/or transferability restrictions or political developments.

Citi uses a lines of defense construct to manage its risks. The construct comprises units that create risks (first line of defense), those that independently assess risk (second line of defense), units that provide independent assurance (third line of defense) and units tasked with maintaining a strong control environment (control and support functions). The lines of defense, which include control and support functions, coordinate with each other in the risk management system in support of the common goal of identifying, measuring, monitoring and controlling risk-taking activities so they remain consistent with the firm's strategy and risk appetite.

## 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 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.

Credit risk is one of the most significant risks Citi faces as an institution. For additional information, see "Risk Factors—Credit Risk" above. As a result, Citi has a well-established framework in place for managing credit risk across all businesses. This includes a defined risk appetite, credit limits and credit policies, both at the business level as well as at the Company-wide level. Citi's credit risk management also includes processes and policies with respect to problem recognition, including "watch lists," portfolio reviews, stress tests, updated risk ratings and classification triggers.

With respect to Citi's clearing and settlement activities, intraday client usage of clearing lines is monitored against limits, as well as against usage patterns with settlement activity monitored daily and intraday for select products. To the extent that a problem develops, Citi typically moves the client to a secured (collateralized) operating model. Generally, Citi's intraday clearing and settlement lines are uncommitted and cancelable at any time.

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

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 these 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 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, among other things, 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 Ltd. 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 sources of funding include (i) deposits via Citi's bank subsidiaries, which are Citi's most stable and lowest cost source of long-term funding, (ii) long-term debt (primarily senior and subordinated debt) primarily issued at the parent and certain bank subsidiaries, and (iii) stockholders' equity. These sources may be supplemented by short-term borrowings, primarily in the form of secured funding transactions.

As referenced above, Citi's funding and liquidity framework ensures that the tenor of these funding sources is of sufficient term in relation to the tenor of its asset base. The goal of Citi's asset/liability management is to ensure that there is sufficient liquidity and tenor in the liability structure relative to the liquidity profile of the assets. This reduces the risk that liabilities will become due before assets mature or are monetized. This excess liquidity is held primarily in the form of high-quality liquid assets (HQLA).

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

The Chief Risk Officer and Citi's CFO co-chair Citigroup's ALCO, which includes Citi's Treasurer and other senior executives. ALCOs, among other things, set the strategy of the liquidity portfolio and monitor its performance. Significant changes to portfolio asset allocations need to be approved by the ALCOs.

## 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 emanates from both Citi's trading and non-trading portfolios. For additional information on market risk and market risk management, 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 bill for a one-basis-point change in interest rates. Citi's market risk management, within the Risk 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, differences in VAR methodologies and differences in 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 (three years) market volatility. The Monte Carlo simulation involves approximately 450,000 market factors, making use of approximately 350,000 time series, with sensitivities updated daily, volatility parameters updated intra-monthly and correlation parameters updated monthly. The conservative features of the VAR calibration contribute an approximate 32% add-on to what would be a VAR estimated under the assumption of stable and perfectly, normally distributed markets.

As set forth in the following table below, CGMHI's average trading VAR increased from 2019 to 2020, mainly due to significant market volatility during the first half of 2020 across all asset classes, driven by macroeconomic challenges and uncertainties related to the COVID-19 pandemic. CGMHI's average trading and credit portfolio VAR also increased in 2020, primarily due to the higher market volatility, increased hedging activity and changes in portfolio composition.

**Year-end and Average Trading VAR and Trading and Credit Portfolio VAR**

| *In millions of dollars* | December 31, 2020 | 2020 Average | December 31, 2019 | 2019 Average |
|---|---|---|---|---|
| Interest rate | $ 68 | $ 81 | $ 43 | $ 43 |
| Equity | 30 | 36 | 19 | 18 |
| Commodity | 10 | 16 | 13 | 20 |
| Foreign exchange | 8 | 6 | 7 | 13 |
| Covariance adjustment (1) | (45) | (53) | (35) | (45) |
| Total trading VAR—all market risk factors, including general and specific risk (excluding credit portfolios) (2) | 71 | 86 | 47 | 49 |
| Specific risk-only component (3) | 16 | 11 | 9 | 5 |
| Total trading VAR—general market risk factors only (excluding credit portfolios) | 55 | 75 | 38 | 44 |
| Incremental impact of the credit portfolio (4) | 2 | 2 | 1 | — |
| **Total trading and credit portfolio VAR** | $ 73 | $ 88 | $ 48 | $ 49 |

(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:

| | 2020 | | 2019 | |
|---|---|---|---|---|
| *In millions of dollars* | Low | High | Low | High |
| Interest rate | $ 33 | $ 205 | $ 36 | $ 60 |
| Equity | 18 | 130 | 10 | 49 |
| Commodity | 9 | 35 | 12 | 32 |
| Foreign exchange | 3 | 14 | 3 | 22 |
| Total trading | $ 42 | $ 214 | $ 39 | $ 68 |
| Total trading and credit portfolio | 48 | 211 | 39 | 69 |

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 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, people and systems 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 firm-wide risk taxonomy to classify operational risks that it faces using standardized definitions across the firm'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 capital requirements, CCAR process and heightened standards under U.S. banking requirements.

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.

To anticipate, mitigate and control operational risk, Citi's Independent Operational Risk Management group has established a global-Operational Risk Management Framework with policies and practices for identification, measurement, monitoring, mitigating, 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 major business 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 estimate and aggregate 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 BRCC as well as business, functions, regional and country BRCCs. BRCCs are chaired by the individuals in the first line of defense and 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.

Citi also has an Operational Risk Management Committee that provides senior management of the second line of defense risk organizations with a platform to assess Citi's operational risk profile and to review that actions are taken to bring Citi's operational risk exposures within operational risk appetite. Members include Citi's Chief Risk Officer and Citi's Head of Operational Risk Management and senior members of their organizations. These members cover multiple dimensions of risk management and include business and regional Chief Risk Officers and senior operational risk managers.

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 Federal Reserve Board's CCAR process.

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

**Cybersecurity Risk**

Cybersecurity risk is the business risk associated with the threat posed by a cyber attack, 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 systems and cybersecurity risk factors in "Risk Factors—Operational Risks" above). With an evolving threat landscape, ever-increasing sophistication of cybersecurity attacks 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 for cyber attacks and information security incidents. Citi recognizes the significance of these risks and, therefore, employs an intelligence-led strategy to protect against, detect, respond to and recover from cyber attacks. Further, Citi actively participates in financial industry, government and cross-sector knowledge-sharing groups to enhance individual and collective cyber resilience.

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 command 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 working in coordination with a network of information security officers who are embedded within the businesses and functions on a global basis.

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. 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.

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 team 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.

## 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 the firm’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) 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 Policy and Compliance Risk 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.

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.

Citi carries out its objectives and fulfills its responsibilities through the Compliance Risk 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 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.
- Monitoring and testing of compliance risks and controls in assessing conformance with laws, rules, regulations and internal policies.
- 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.

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

## REPUTATION RISK

Citi's reputation is a vital asset in building trust with its stakeholders and Citi is diligent in communicating its corporate values to its colleagues, customers, investors and regulators. To support this, Citi has defined a reputation risk appetite approach. Under this approach, each major business segment has implemented a risk appetite statement and related key indicators to monitor and address weaknesses that may result in significant reputation risks. The approach requires that each business segment or region escalates significant reputation risks that require review or mitigation through its Reputation Risk Committee or equivalent.

The Reputation Risk Committees are part of the governance infrastructure that Citi has in place to review the reputation risk posed by business activities, sales practices, product design, or perceived conflicts of interest. These committees may also raise potential reputation risks for due consideration by the Reputation Risk Committee at the corporate level. 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. The Reputation Risk Committees, which are composed of Citi's most senior executives, govern the process by which material reputation risks are identified, monitored, reported, managed and escalated, and appropriate actions are taken in line with Company-wide strategic objectives, risk appetite thresholds and regulatory expectations, while promoting the culture of risk awareness and high standards of integrity and ethical behavior across the Company, consistent with Citi's mission and value proposition.

Further, the responsibility for maintaining Citi's reputation is shared by all colleagues, who are 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 and appropriately escalate all issues that present potential reputation risk.

## STRATEGIC RISK

### Overview

Citi's Executive Management Team, led by Citi's CEO, is responsible for the development and execution of Citi's strategy. This strategy is translated into forward-looking plans that are then cascaded across the organization. Strategic risk is monitored through a range of practices: regular Citigroup Board of Director meetings provide strategic checkpoints where management's progress is assessed and where decisions to refine the strategic direction of the Company are evaluated; Citi's Executive Management Team assesses progress against executing the defined plans; CEO reviews, which include a risk assessment of the plans, occur across products, regions and functions to focus on progress against executing the plans; products, regions and functions have internal reviews to assess performance at lower levels across the organization; and specific forums exist to focus on key areas that drive strategic risk such as balance sheet management, the introduction of new or modified products and services and country management, among others. In addition to these day-to-day practices, significant strategic actions, such as mergers, acquisitions or capital expenditures, are reviewed and approved by, or notified to, the Citigroup Board of Directors.

### U.K.'s Future Relationship with the EU

As previously disclosed, the U.K. formally left the European Union (EU) on January 31, 2020. Subsequently, the U.K. and the EU entered into a Trade and Cooperation Agreement (TCA) that set out preferential arrangements in areas such as trade in goods and in services that became effective on January 1, 2021. While entering into the TCA avoided a "no deal" exit scenario, many questions remain as to the future relationship between the U.K. and the EU. For example, the TCA minimally covers financial services. The U.K. and the EU have committed under the TCA to negotiate further details regarding financial services, but there can be no assurance as to the successful completion or ultimate outcome of those negotiations. Citi planned extensively for the U.K. exit from the EU and successfully implemented its transition plans to date. However, future legislative and regulatory developments in the U.K. and the EU as a result of the exit may negatively impact Citi. For additional information, see "Risk Factors—Strategic Risks" above.

### LIBOR Transition Risk

The ICE Benchmark Administration concluded the consultation on its intent to cease publication of one week and two month USD LIBOR on December 31, 2021 and to extend the publication of all remaining USD LIBORs until June 30, 2023 for legacy contracts. In addition, it is expected that all non USD LIBOR tenors will cease after December 31, 2021. Citi recognizes that a transition away from and discontinuance of LIBOR presents various risks and challenges that could significantly impact financial markets and market participants, including Citi (for information about Citi's risks from a transition away from and discontinuation of LIBOR or any other interest rate benchmark, see "Risk Factors—Strategic Risks" above). Accordingly, Citi has continued its efforts to identify and manage its LIBOR transition risks. Citi is also closely monitoring legislative, regulatory and other developments related to LIBOR transition matters and relief.

Citi has established a LIBOR governance and implementation program focused on identifying and addressing the LIBOR transition impacts to Citi's clients, operational capabilities and legal and financial contracts, among others. The program operates globally across Citi's businesses and functions and includes active involvement of senior management, oversight by Citi's Asset & Liability Committee and reporting to the Risk Management Committee of Citigroup's Board of Directors. As part of the program, Citi has continued to implement its LIBOR transition action plans and associated roadmaps under the following key workstreams: program management; transition strategy and risk management; customer management, including internal communications and training, legal/contract management and product management; financial exposures and risk management; regulatory and industry engagement; operations and technology; and finance, risk, tax and treasury.

During 2020, Citi continued to participate in a number of working groups formed by global regulators, including the Alternative Reference Rates Committee (ARRC) convened by the Federal Reserve Board. These working groups promote and advance development of alternative reference rates and seek to identify and address potential challenges from any transition to such rates. Citi also continued to engage with regulators, financial accounting bodies and others on LIBOR transition matters.

Moreover, Citi has continued to identify its LIBOR transition exposures, including financial instruments that do not contain contract provisions that adequately contemplate the discontinuance of reference rates and that would require additional negotiation with counterparties. Citi's LIBOR transition efforts include, among other things, using alternative reference rates in certain newly issued financial instruments and products. Since 2019, Citi has issued preferred stock and benchmark debt referencing the Secured Overnight Financing Rate (SOFR) as well as updated the LIBOR determination method in its debt documentation with the ARRC recommended fallback language. In addition, in 2020, Citi transitioned the discounting of centrally cleared EUR and USD interest rate derivatives to the Euro Short-Term Rate (ESTR) and SOFR, respectively; announced the adoption of the newly published Interbank Offered Rate (IBOR) Fallbacks Protocol of the International Swaps and Derivatives Association (ISDA) for existing IBOR derivatives transactions; and increased Citi's virtual client communication efforts, including outreach regarding these new industry-led protocols and solutions. Further, Citi has also been investing in its systems and infrastructure, as client activity moves away from LIBOR to alternative reference rates.

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

### Unregistered Sales of Equity Securities

None.

**Equity Security Repurchases** As previously announced, on March 15, 2020, Citi joined other major U.S. banks in suspending share repurchases in light of the COVID-19 pandemic. In addition, based on measures announced by the Federal Reserve Board throughout 2020, share repurchases were prohibited through the end of the fourth quarter of 2020. Accordingly, Citi did not have any share repurchases in the fourth quarter of 2020, other than permitted repurchases relating to issuances of common stock related to employee stock ownership plans. During the fourth quarter, pursuant to Citigroup's Board of Directors' authorization, Citi repurchased 50,588 shares (at an average price of $54.59) of common stock, added to treasury stock, related to activity on employee stock programs where shares were withheld to satisfy the employee tax requirements.

Based on measures announced by the Federal Reserve Board in December 2020, share repurchases will be permitted during the first quarter of 2021, subject to limitations based on net income for the four preceding calendar quarters, in addition to the previously announced common dividends paid during the first quarter of 2021. These limitations on capital distributions may be extended by the Federal Reserve Board. Under these modified limitations on capital distributions, Citi is authorized to return capital to common shareholders of up to $2.8 billion, during the first quarter of 2021, including the previously announced common dividends of $0.51 per share in the quarter. Citi commenced share repurchases in February 2021.

### Dividends

Consistent with the regulatory capital framework, Citi paid common dividends of $0.51 per share for the fourth quarter of 2020 and the first quarter of 2021, and intends to maintain its planned capital actions, which include common dividends of $0.51 per share through the second and third quarter of 2021 (the remaining quarters of the 2020 CCAR cycle), subject to approval of Citi's Board of Directors and the latest financial and macroeconomic conditions.

In addition to Board of Directors' approval, Citi's ability to pay common stock dividends substantially depends on the results of the CCAR process required by the Federal Reserve Board and the supervisory stress tests required under the Dodd-Frank Act. For additional information regarding Citi's capital planning and stress testing, see "Risk Factors—Strategic Risks" above.

Through the end of the first quarter of 2021, dividends continue to be capped and tied to a formula based on recent income. These limitations on capital distributions may be extended by the Federal Reserve Board.

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

# Citigroup Global Markets Holdings Inc.
## and Subsidiaries

## Consolidated Financial Statements
## as of December 31, 2020 and 2019
## and for each of the years
## in the three year period ended
## December 31, 2020

CITIGROUP GLOBAL MARKETS HOLDINGS INC. AND SUBSIDIARIES

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

KPMG LLP
345 Park Avenue
New York, NY 10154-0102

# Independent Auditors' Report

To the Stockholder and the Board of Directors
Citigroup Global Markets Holdings Inc.:

We have audited the accompanying consolidated financial statements of Citigroup Global Markets Holdings Inc. and its subsidiaries, which comprise the consolidated statements of financial condition as of December 31, 2020 and 2019, and the related consolidated statements of income, comprehensive income, changes in stockholder's equity and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes to the consolidated financial statements.

*Management's Responsibility for the Financial Statements*

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

*Auditors' Responsibility*

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

*Opinion*

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Citigroup Global Markets Holdings Inc. and its subsidiaries as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2020 in accordance with U.S. generally accepted accounting principles.

KPMG LLP

New York, NY
April 30, 2021

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

| | Years ended December 31, | | |
|---|---|---|---|
| *In millions of dollars* | 2020 | 2019 | 2018 |
| Revenues: | | | |
| Investment banking | $ 4,738 | $ 4,058 | $ 3,750 |
| Principal transactions | 4,811 | 2,741 | 2,927 |
| Commissions and fees | 1,768 | 1,561 | 1,633 |
| Fiduciary fees | 262 | 267 | 253 |
| Other | 468 | 667 | 622 |
| Total non-interest revenues | 12,047 | 9,294 | 9,185 |
| Interest and dividend income | 6,284 | 12,603 | 10,391 |
| Interest expense | 4,159 | 11,253 | 8,969 |
| Net interest and dividends | 2,125 | 1,350 | 1,422 |
| Revenues, net of interest expense | 14,172 | 10,644 | 10,607 |
| Non-interest expenses: | | | |
| Compensation and benefits | 4,941 | 4,680 | 4,484 |
| Brokerage, clearing and exchange fees | 1,320 | 1,207 | 1,232 |
| Communications | 842 | 977 | 853 |
| Professional services | 313 | 269 | 161 |
| Occupancy and equipment | 256 | 236 | 191 |
| Other operating and administrative expenses | 1,978 | 2,047 | 2,099 |
| Total non-interest expenses | 9,650 | 9,416 | 9,020 |
| Income before income taxes | 4,522 | 1,228 | 1,587 |
| Provision for income taxes | 968 | 496 | 562 |
| Net income | $ 3,554 | $ 732 | $ 1,025 |

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

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

| | Years ended December 31, | | |
|---|---|---|---|
| *In millions of dollars* | 2020 | 2019 | 2018 |
| **Net income** | $ 3,554 | $ 732 | $ 1,025 |
| **Add: Other comprehensive income (loss)** | | | |
| Net change in debt valuation adjustment (DVA), net of taxes (1) | (340) | (636) | 512 |
| Benefit plans liability adjustment, net of taxes | (65) | 1 | (50) |
| Foreign currency translation adjustment, net of taxes | 197 | (16) | (206) |
| **Total other comprehensive income (loss)** | (208) | (651) | 256 |
| **Total comprehensive income** | $ 3,346 | $ 81 | $ 1,281 |

(1) Changes in DVA are reflected as a component of *AOCI*, pursuant to the adoption of ASU 2016-01 relating to the presentation of DVA on fair value option liabilities.

The Notes to the Consolidated Financial Statements 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* | | December 31, 2020 | | December 31, 2019 |
|---|---|---|---|---|
| **Assets** | | | | |
| Cash and cash equivalents | | $ 10,709 | | $ 7,949 |
| Cash segregated under federal and other regulations | | 9,402 | | 8,492 |
| Securities borrowed and purchased under agreements to resell (including $183,923 and $151,220 as of December 31, 2020 and 2019, respectively, at fair value) | | 263,027 | | 216,983 |
| Trading account assets (including $160,901 and $115,684 pledged to creditors at December 31, 2020 and 2019, respectively): | | | | |
| Equity securities | 52,488 | | 35,315 | |
| Foreign government securities | 44,886 | | 35,026 | |
| Mortgage-backed securities | 44,615 | | 29,987 | |
| U.S. Treasury and federal agency securities | 42,061 | | 17,933 | |
| Derivatives | 22,455 | | 15,771 | |
| Corporate | 19,906 | | 17,152 | |
| Asset-backed securities | 2,202 | | 2,632 | |
| State and municipal securities | 667 | | 1,979 | |
| Other trading assets | 2,400 | | 2,178 | |
| | | 231,680 | | 157,973 |
| Securities received as collateral, at fair value (all pledged to counterparties) | | 6,358 | | 5,872 |
| Receivables: | | | | |
| Loans to affiliates | 50,701 | | 44,617 | |
| Customers | 18,103 | | 15,911 | |
| Brokers, dealers and clearing organizations | 22,782 | | 19,124 | |
| Other | 1,775 | | 2,254 | |
| | | 93,361 | | 81,906 |
| Goodwill | | 2,194 | | 2,193 |
| Other assets (including $2,887 and $2,756 as of December 31, 2020 and 2019, respectively, at fair value) | | 12,848 | | 13,058 |
| **Total assets** | | $629,579 | | $494,426 |

The Notes to the Consolidated Financial Statements 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* | December 31, 2020 | | December 31, 2019 | |
|---|---|---|---|---|
| **Liabilities** | | | | |
| Short-term borrowings (including $4,086 and $3,998 as of December 31, 2020 and 2019, respectively, at fair value) | | $ 25,080 | | $ 28,225 |
| Securities loaned and sold under agreements to repurchase (including $60,206 and $40,499 as of December 31, 2020 and 2019, respectively, at fair value) | | 261,256 | | 182,054 |
| Trading account liabilities: | | | | |
| Foreign government securities | 42,024 | | 25,681 | |
| Derivatives | 31,131 | | 19,505 | |
| U.S. Treasury and federal agency securities | 23,163 | | 17,838 | |
| Equity securities | 15,056 | | 13,969 | |
| Corporate and other debt securities | 10,317 | | 8,216 | |
| | | 121,691 | | 85,209 |
| Payables and accrued liabilities: | | | | |
| Customers | 53,282 | | 43,766 | |
| Obligations to return securities received as collateral, at fair value | 6,815 | | 6,334 | |
| Brokers, dealers and clearing organizations | 3,494 | | 2,732 | |
| Other | 7,004 | | 7,172 | |
| | | 70,595 | | 60,004 |
| Long-term debt (including $47,027 and $38,929 as of December 31, 2020 and 2019, respectively, at fair value) | | 115,174 | | 106,369 |
| **Total liabilities** | | 593,796 | | 461,861 |
| **CGMHI stockholder's equity** | | | | |
| Common stock (par value $.01 per share, 1,000 shares authorized; 1,000 shares issued and outstanding) | | — | | — |
| Additional paid-in capital | | 28,629 | | 28,624 |
| Retained earnings | | 8,367 | | 4,945 |
| Accumulated other comprehensive income (loss) (AOCI) | | (1,213) | | (1,005) |
| **Total CGMHI stockholder's equity** | | 35,783 | | 32,564 |
| Noncontrolling interest | | — | | 1 |
| **Total equity** | | 35,783 | | 32,565 |
| **Total liabilities and equity** | | $629,579 | | $494,426 |

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

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

| | Years ended December 31, | | |
|---|---|---|---|
| *In millions of dollars* | 2020 | 2019 | 2018 |
| **Common stock and additional paid-in capital** | | | |
| Balance, beginning of year | $ 28,624 | $ 28,691 | $ 29,707 |
| Capital distributions to Citigroup | — | (75) | (1,016) |
| Employee benefit plans | 5 | 8 | — |
| Balance, end of year | 28,629 | 28,624 | 28,691 |
| **Retained earnings** | | | |
| Balance, beginning of year | 4,945 | 4,452 | 3,518 |
| Adjustment to opening balance, net of taxes (1) | 40 | 14 | — |
| Adjusted balance, beginning of period | 4,985 | 4,466 | 3,518 |
| Net income | 3,554 | 732 | 1,025 |
| Dividends | (172) | (253) | (91) |
| Balance, end of year | 8,367 | 4,945 | 4,452 |
| **Accumulated other comprehensive income (loss)** | | | |
| Balance, beginning of year | (1,005) | (354) | (610) |
| Other comprehensive income (loss): | | | |
| Net change in debt valuation adjustment (DVA), net of taxes (2) | (340) | (636) | 512 |
| Benefit plans liability adjustment, net of taxes | (65) | 1 | (50) |
| Foreign currency translation adjustment, net of taxes | 197 | (16) | (206) |
| Total other comprehensive income (loss) | (208) | (651) | 256 |
| Balance, end of year | (1,213) | (1,005) | (354) |
| **Total CGMHI stockholder's equity** | 35,783 | 32,564 | 32,789 |
| **Noncontrolling interest** | | | |
| Balance, beginning of year | 1 | 1 | 1 |
| Other | (1) | — | — |
| Net change in noncontrolling interests | (1) | — | — |
| Balance, end of year | — | 1 | 1 |
| **Total equity** | $ 35,783 | $ 32,565 | $ 32,790 |

(1) See Note 1 to the Consolidated Financial Statements for additional details.
(2) Changes in DVA are reflected as a component of *AOCI*, pursuant to the adoption of ASU 2016-01 relating to the presentation of DVA on fair value option liabilities.

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

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

| *In millions of dollars* | Years ended December 31, 2020 | 2019 | 2018 |
|---|---|---|---|
| Cash flows from operating activities: | | | |
| CGMHI's net income | $ 3,554 | $ 732 | $ 1,025 |
| Adjustments to reconcile net income to net cash provided by (used in) operating activities: | | | |
| Deferred tax provision (benefit) | (224) | 129 | 439 |
| Depreciation and amortization | 63 | 55 | 58 |
| Net change in: | | | |
| Trading account assets | (73,707) | (10,019) | (5,865) |
| Securities received as collateral, at fair value | (486) | 10,040 | (1,283) |
| Receivables | (5,371) | (3,880) | (373) |
| Other assets | 2,067 | (174) | (3,397) |
| Trading account liabilities | 36,482 | (11,760) | 13,986 |
| Payables and accrued liabilities | 10,590 | (20,587) | 8,726 |
| Net cash provided by (used in) operating activities | (27,032) | (35,464) | 13,316 |
| Cash flows from investing activities: | | | |
| Securities borrowed and purchased under agreements to resell | (46,044) | 15,810 | (34,018) |
| Loans to affiliates | (6,084) | (826) | (831) |
| Other, net | (54) | (52) | (8) |
| Net cash provided by (used in) investing activities | (52,182) | 14,932 | (34,857) |
| Cash flows from financing activities: | | | |
| Dividends paid | (172) | (253) | (91) |
| Securities loaned and sold under agreements to repurchase | 79,202 | 5,116 | 23,453 |
| Capital distributions to Citigroup | — | (74) | (798) |
| Employee benefit plans | 5 | 8 | — |
| Proceeds from issuance of long-term debt | 46,168 | 26,525 | 40,264 |
| Repayment of long-term debt | (35,740) | (23,313) | (19,279) |
| Short-term borrowings, net | (6,579) | 13,284 | (19,024) |
| Net cash provided by financing activities | 82,884 | 21,293 | 24,525 |
| Change in cash and cash segregated under federal and other regulations | 3,670 | 761 | 2,984 |
| Cash and cash segregated under federal and other regulations at beginning of period | 16,441 | 15,680 | 12,696 |
| Cash and cash segregated under federal and other regulations at end of period | $ 20,111 | $ 16,441 | $ 15,680 |
| Cash and cash equivalents | $ 10,709 | $ 7,949 | $ 7,368 |
| Cash segregated under federal and other regulations | 9,402 | 8,492 | 8,312 |
| Cash and cash segregated under federal and other regulations at end of period | $ 20,111 | $ 16,441 | $ 15,680 |
| Cash paid during the year for interest | $ 4,515 | $ 12,664 | $ 8,671 |
| Change in tenor of long-term debt (1) | $ (3,434) | $ 57 | $ 2,417 |

(1) The composition of CGMHI's debt is adjusted dynamically based on the structural liquidity needs of the Company. During 2020 the Company changed the tenor of $3.4 billion in debt with affiliates from long-term to short-term, and during 2019 and 2018 the Company changed the tenor of $57 million and $2.4 billion, respectively, in debt with affiliates from short-term to long-term.

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

## 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

**Principles of Consolidation**
The Consolidated Financial Statements include the accounts of Citigroup Global Markets Holdings Inc. (CGMHI) and its subsidiaries prepared in accordance with U.S. generally accepted accounting principles (GAAP). The Company is a direct wholly owned subsidiary of Citigroup Inc. (Citigroup or Citi). The Company consolidates subsidiaries in which it holds, directly or indirectly, more than 50% of the voting rights or where it exercises control. Entities where the Company holds 20% to 50% of the voting rights and/or has the ability to exercise significant influence, other than investments of designated venture capital subsidiaries or investments accounted for at fair value under the fair value option, are accounted for under the equity method, and the pro rata share of their income (loss) is included in *Other revenue*. Income from investments in less-than-20%-owned companies is recognized when dividends are received. As discussed in more detail in Note 8 to the Consolidated Financial Statements, CGMHI also consolidates entities deemed to be variable interest entities when CGMHI is determined to be the primary beneficiary.

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

The Company is a New York Corporation and provides corporate, institutional, public sector and high-net-worth clients around the world with a full range of brokerage products and services, including fixed income and equity sales and trading, foreign exchange, prime brokerage, derivative services, equity and fixed income research, investment banking and advisory services, cash management, trade finance and securities services. CGMHI transacts with clients in both cash instruments and derivatives, including fixed income, foreign currency, equity and commodity products.

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

**Use of Estimates**
Management must make estimates and assumptions that affect the Consolidated Financial Statements and the related Notes to the Consolidated Financial Statements. Such estimates are used in connection with certain fair value measurements. See Note 11 to the Consolidated Financial Statements for further discussions on estimates used in the determination of fair value. Moreover, estimates are significant in determining the amounts of impairments of goodwill and other intangible assets, provisions for probable losses that may arise from credit-related exposures and probable and estimable losses related to litigation and regulatory proceedings, and income taxes. While management makes its best judgment, actual amounts or results could differ from those estimates.

**Variable Interest Entities (VIEs)**
An entity is a variable interest entity (VIE) if it meets either of the criteria outlined in Accounting Standards Codification (ASC) Topic 810, *Consolidation*, which are (i) the entity has equity that is insufficient to permit the entity to finance its activities without additional subordinated financial support from other parties, or (ii) the entity has equity investors that cannot make significant decisions about the entity's operations or that do not absorb their proportionate share of the entity's expected losses or expected returns.

The Company consolidates a VIE when it has both the power to direct the activities that most significantly impact the VIE's economic performance and a right to receive benefits or the obligation to absorb losses of the entity that could be potentially significant to the VIE (that is, CGMHI is the primary beneficiary). In addition to variable interests held in consolidated VIEs, the Company has variable interests in other VIEs that are not consolidated because the Company is not the primary beneficiary.

All unconsolidated VIEs are monitored by the Company to assess whether any events have occurred to cause its primary beneficiary status to change. All entities not deemed to be VIEs with which the Company has involvement are evaluated for consolidation under other subtopics of ASC 810. See Note 8 to the Consolidated Financial Statements for more detailed information.

**Foreign Currency Translation**
Assets and liabilities of CGMHI's foreign operations are translated from their respective functional currencies into U.S. dollars using period-end spot foreign exchange rates. The effects of those translation adjustments are reported in *Accumulated other comprehensive income (loss)*, a component of stockholder's equity, net of any related tax effects, until realized upon sale or substantial liquidation of the foreign operation, at which point such amounts related to the foreign entity are reclassified into earnings. Revenues and expenses of CGMHI's foreign operations are translated monthly from their respective functional currencies into U.S. dollars at amounts that approximate weighted average exchange rates.

For transactions that are denominated in a currency other than the functional currency, including transactions denominated in the local currencies of foreign operations that use the U.S. dollar as their functional currency, the effects of changes in exchange rates are primarily included in *Principal transactions*, along with the related effects of any economic hedges. Foreign operations in countries with highly inflationary economies designate the U.S. dollar as their functional currency, with the effects of changes in exchange rates primarily included in *Other revenue*.

**Cash and Cash Equivalents**
Cash and cash equivalents represents funds deposited with financial institutions.

**Cash Segregated under Federal and Other Regulations**
Certain U.S. and non-U.S. broker-dealer subsidiaries are subject to various securities and commodities regulations promulgated by the regulatory and exchange authorities of the countries in which they operate. CGMHI's broker-dealer subsidiaries are required by its primary regulators, including the Securities and Exchange Commission, the Commodities Future Trading Commission and the United Kingdom's Prudential Regulation Authority, to segregate cash to satisfy rules regarding the protection of customer assets.

**Trading Account Assets and Liabilities**
*Trading account assets* include debt and marketable equity securities, derivatives in a net receivable position and residual interests in securitizations. *Trading account liabilities* include securities sold, not yet purchased (short positions) and derivatives in a net payable position.

All trading account assets and liabilities are carried at fair value. Revenues generated from trading assets and trading liabilities are generally reported in *Principal transactions* and include realized gains and losses as well as unrealized gains and losses resulting from changes in the fair value of such instruments. Interest income on trading assets is recorded in *Interest revenue* reduced by interest expense on trading liabilities. Certain dividends paid on short positions for equity securities are recorded in *Principal transactions*.

Derivatives used for trading purposes include interest rate, currency, equity, credit and commodity swap agreements, options, caps and floors, warrants, and financial and commodity futures and forward contracts. Derivative asset and liability positions are presented net by counterparty on the Consolidated Statement of Financial Condition when a valid master netting agreement exists and the other conditions set out in ASC Topic 210-20, *Balance Sheet—Offsetting*, are met. See Note 9 to the Consolidated Financial Statements.

The Company uses a number of techniques to determine the fair value of trading assets and liabilities, which are described in Note 11 to the Consolidated Financial Statements.

**Securities Borrowed and Securities Loaned**
Securities borrowing and lending transactions do not constitute a sale of the underlying securities for accounting purposes and are treated as collateralized financing transactions. Such transactions are recorded at the amount of proceeds advanced or received plus accrued interest. As described in Note 12 to the Consolidated Financial Statements, the Company has elected to apply fair value accounting to a number of securities borrowing and lending transactions. Fees paid or received for all securities lending and borrowing transactions are recorded in *Interest expense* or *Interest revenue* at the contractually specified rate.

The Company monitors the fair value of securities borrowed or loaned on a daily basis and obtains or posts additional collateral in order to maintain contractual margin protection.

As described in Note 11 to the Consolidated Financial Statements, the Company uses a discounted cash flow technique to determine the fair value of securities lending and borrowing transactions carried at fair value.

**Repurchase and Resale Agreements**
Securities sold under agreements to repurchase (repos) and securities purchased under agreements to resell (reverse repos) do not constitute a sale (or purchase) of the underlying securities for accounting purposes and are treated as collateralized financing transactions. As described in Note 12 to the Consolidated Financial Statements, the Company has elected to apply fair value accounting to certain of such transactions, with changes in fair value reported in earnings. Any transactions for which fair value accounting has not been elected, including all repo and reverse repo transactions with related parties, are recorded at the amount of cash advanced or received plus accrued interest. Irrespective of whether the Company has elected fair value accounting, interest paid or received on all repo and reverse repo transactions is recorded in *Interest expense* or *Interest revenue* at the contractually specified rate.

Where the conditions of ASC 210-20-45-11, *Balance Sheet—Offsetting: Repurchase and Reverse Repurchase Agreements*, are met, repos and reverse repos are presented net on the Consolidated Statement of Financial Condition.

The Company's policy is to take possession of securities purchased under reverse repurchase agreements. The Company monitors the fair value of securities subject to repurchase or resale on a daily basis and obtains or posts additional collateral in order to maintain contractual margin protection.

As described in Note 11 to the Consolidated Financial Statements, the Company uses a discounted cash flow technique to determine the fair value of repo and reverse repo transactions carried at fair value.

**Securities Received as Collateral and Obligations to Return Securities Received as Collateral**

In transactions where the Company acts as a lender in securities lending agreements and receives securities that can be pledged or sold as collateral (securities-for-securities lending transactions), the Company is required to record the securities received and related obligation to return securities received as collateral on its Consolidated Statement of Financial Condition.

**Receivables and Payables – Customers, Brokers, Dealers and Clearing Organizations**

The Company has receivables and payables for financial instruments sold to and purchased from brokers, dealers and customers, which arise in the ordinary course of business. The Company is exposed to risk of loss from the inability of brokers, dealers or customers to pay for purchases or to deliver the financial instruments sold, in which case the Company would have to sell or purchase the financial instruments at prevailing market prices. Credit risk is reduced to the extent that an exchange or clearing organization acts as a counterparty to the transaction and replaces the broker, dealer or customer in question.

The Company seeks to protect itself from the risks associated with customer activities by requiring customers to maintain margin collateral in compliance with regulatory and internal guidelines. Margin levels are monitored daily, and customers deposit additional collateral as required. Where customers cannot meet collateral requirements, the Company may liquidate sufficient underlying financial instruments to bring the customer into compliance with the required margin level.

Exposure to credit risk is impacted by market volatility, which may impair the ability of clients to satisfy their obligations to the Company. Credit limits are established and closely monitored for customers and for brokers and dealers engaged in forwards, futures and other transactions deemed to be credit sensitive. Brokerage receivables and payables are accounted for in accordance with the AICPA Accounting Guide for Brokers and Dealers in Securities as codified in ASC 940-320.

**Goodwill**

*Goodwill* represents the excess of acquisition cost over the fair value of net tangible and intangible assets acquired in a business combination. *Goodwill* is subject to annual impairment testing and interim assessments between annual tests if an event occurs or circumstances change that would more-likely-than-not reduce the fair value of a reporting unit below its carrying amount.

Under ASC Topic 350, *Intangibles—Goodwill and Other* and upon the adoption of ASU No. 2017-04 on January 1, 2020, the Company has an option to assess qualitative factors to determine if it is necessary to perform the goodwill impairment test. If, after assessing the totality of events or circumstances, the Company determines that it is not more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, no further testing is necessary. If, however, the Company determines that it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, then the Company must perform the quantitative test. The Company has an unconditional option to bypass the qualitative assessment for any reporting unit in any reporting period and proceed directly to the quantitative test. The Company performed its annual goodwill impairment test as of July 1, 2020, resulting in no impairment of CGMHI's two reporting units.

**Securitizations**

There are two key accounting determinations that must be made relating to securitizations. The Company first makes a determination as to whether the securitization entity must be consolidated. Second, it determines whether the transfer of financial assets to the entity is considered a sale under GAAP. If the securitization entity is a VIE, the Company consolidates the VIE if it is the primary beneficiary (as discussed in "Variable Interest Entities" above). For all other securitization entities determined not to be VIEs in which the Company participates, consolidation is based on which party has voting control of the entity, giving consideration to removal and liquidation rights in certain partnership structures. Only securitization entities controlled by the Company are consolidated.

Interests in the securitized and sold assets may be retained in the form of subordinated or senior interest-only strips, subordinated tranches and residuals. In the case of consolidated securitization entities, these retained interests are not reported on the Company's Consolidated Statement of Financial Condition. Retained interests in non-consolidated mortgage securitization trusts are classified as *Trading account assets*.

**Debt**

*Short-term borrowings* and *Long-term debt* are accounted for at amortized cost, except where the Company has elected to report the debt instruments, including certain structured notes, at fair value.

**Transfers of Financial Assets**

For a transfer of financial assets to be considered a sale: (i) the assets must be legally isolated from the Company, even in bankruptcy or other receivership, (ii) the purchaser must have the right to pledge or sell the assets transferred (or, if the purchaser is an entity whose sole purpose is to engage in securitization and asset-backed financing activities through the issuance of beneficial interests and that entity is constrained from pledging the assets it receives, each beneficial interest holder must have the right to sell or pledge their beneficial interests) and (iii) the Company may not have an option or obligation to reacquire the assets.

If these sale accounting requirements are met, the assets are removed from the Company's Consolidated Statement of Financial Condition. If the conditions for sale accounting are not met, the transfer is considered to be a secured borrowing, the assets remain on the Consolidated Statement of Financial Condition and the sale proceeds are recognized as the Company's liability. A legal opinion on a sale generally is obtained for complex transactions or where the Company has continuing involvement with assets transferred or with the securitization entity. For a transfer to be eligible for sale accounting, that opinion must state that the asset transfer would be considered a sale and that the assets transferred would not be consolidated with the Company's other assets in the event of the Company's insolvency.

For a transfer of a portion of a financial asset to be considered a sale, the portion transferred must meet the definition of a participating interest. A participating interest must represent a pro rata ownership in an entire financial asset; all cash flows must be divided proportionately, with the same priority of payment; no participating interest in the transferred asset may be subordinated to the interest of another participating interest holder; and no party may have the right to pledge or exchange the entire financial asset unless all participating interest holders agree. Otherwise, the transfer is accounted for as a secured borrowing.

See Note 8 to the Consolidated Financial Statements for further discussion.

**Risk Management Activities—Derivatives Used for Hedging Purposes**

The Company manages its exposures to market movements outside of its trading activities through the use of derivative financial products, including interest rate swaps and commodity futures. These end-user derivatives are carried at fair value. See Note 9 to the Consolidated Financial Statements for a further discussion of the Company's hedging and derivative activities.

**Instrument-specific Credit Risk**

The Company presents separately in *AOCI* the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk, when the entity has elected to measure the liability at fair value in accordance with the fair value option for financial instruments. Accordingly, the change in fair value of liabilities for which the fair value option was elected, related to changes in Citigroup's own credit spreads, is presented in *AOCI*.

**Employee Benefits Expense**

Employee benefits expense includes current service costs of pension and other postretirement benefit plans (which are accrued on a current basis), contributions and unrestricted awards under other employee plans, the amortization of restricted stock awards and costs of other employee benefits. See Note 3 to the Consolidated Financial Statements.

**Stock-Based Compensation**

The Company recognizes compensation expense related to Citigroup stock and option awards over the requisite service period, generally based on the instruments' grant-date fair value, reduced by actual forfeitures as they occur. Compensation cost related to awards granted to employees who meet certain age plus years-of-service requirements (retirement-eligible employees) is accrued in the year prior to the grant date, in the same manner as the accrual for cash incentive compensation. Certain stock awards with performance conditions or certain clawback provisions are subject to variable accounting, pursuant to which the associated compensation expense fluctuates with changes in Citigroup's common stock price. See Note 3 to the Consolidated Financial Statements.

**Income Taxes**
The Company is subject to the income tax laws of the U.S. and its states and municipalities, as well as the non-U.S. jurisdictions in which it operates. These tax laws are complex and may be subject to different interpretations by the taxpayer and the relevant governmental taxing authorities. In establishing a provision for income tax expense, the Company must make judgments and interpretations about these tax laws. The Company must also make estimates about when in the future certain items will affect taxable income in the various tax jurisdictions, both domestic and foreign.

Disputes over interpretations of the tax laws may be subject to review and adjudication by the court systems of the various tax jurisdictions, or may be settled with the taxing authority upon examination or audit. The Company treats interest and penalties on income taxes as a component of *Provision for income taxes*.

Deferred taxes are recorded for the future consequences of events that have been recognized in financial statements or tax returns, based upon enacted tax laws and rates. Deferred tax assets are recognized subject to management's judgment about whether realization is more-likely-than-not. ASC 740, *Income Taxes*, sets out a consistent framework to determine the appropriate level of tax reserves to maintain for uncertain tax positions. This interpretation uses a two-step approach wherein a tax benefit is recognized if a position is more-likely-than-not to be sustained. The amount of the benefit is then measured to be the highest tax benefit that is more than 50% likely to be realized. ASC 740 also sets out disclosure requirements to enhance transparency of an entity's tax reserves.

See Note 4 to the Consolidated Financial Statements for a further description of the Company's tax provision and related income tax assets and liabilities.

**Investment Banking**
*Investment banking* fees are substantially composed of underwriting and advisory revenues. Such fees are recognized at the point in time when CGMHI's performance under the terms of a contractual arrangement is completed, which is typically at the closing of a transaction. Reimbursed expenses related to these transactions are recorded as revenue and are included within investment banking fees. In certain instances for advisory contracts, CGMHI will receive amounts in advance of the deal's closing. In these instances, the amounts received will be recognized as a liability and not recognized in revenue until the transaction closes. For the periods presented, the contract liability amount was negligible.

Out-of-pocket expenses associated with underwriting activity are deferred and recognized at the time the related revenue is recognized, while out-of-pocket expenses associated with advisory arrangements are expensed as incurred. In general, expenses incurred related to investment banking transactions, whether consummated or not, are recorded in *Other operating and administrative expenses*. The Company has determined that it acts as principal in the majority of these transactions and therefore presents expenses gross within *Other operating expenses*.

**Principal Transactions**
CGMHI's *Principal transactions* revenues are recognized in income on a trade-date basis and consist of realized and unrealized gains and losses from trading activities. See Note 2 to the Consolidated Financial Statements for details of *Principal transactions* revenue.

**Commissions and Fees**
*Commissions and fees* primarily include brokerage commissions from the following: executing transactions for clients on exchanges and over-the-counter markets; sales of mutual funds and other annuity products; and assisting clients in clearing transactions, providing brokerage services and other such activities. Brokerage commissions are recognized in *Commissions and fees* at the point in time the associated service is fulfilled, generally on the trade execution date. Gains or losses, if any, on these transactions are included in *Principal transactions* (see Note 2 to the Consolidated Financial Statements). Sales of certain investment products include a portion of variable consideration associated with the underlying product. In these instances, a portion of the revenue associated with the sale of the product is not recognized until the variable consideration becomes fixed. The Company recognized $105 million, $102 million and $117 million of revenue related to such variable consideration for the years ended December 31, 2020, 2019 and 2018, respectively. These amounts primarily relate to performance obligations satisfied in prior periods.

**Fiduciary Fees**
*Fiduciary fees* consist of trust services and investment management services. As an escrow agent, CGMHI receives, safe-keeps, services and manages clients' escrowed assets, such as cash, securities, property (including intellectual property), contracts or other collateral. CGMHI performs its escrow agent duties by safekeeping the funds during the specified time period agreed upon by all parties and therefore earns its revenue evenly during the contract duration.

Investment management services consist of managing assets on behalf of CGMHI's retail and institutional clients. Revenue from these services primarily consists of asset-based fees for advisory accounts, which are based on the market value of the client's assets and recognized monthly, when the market value is fixed. In some instances, the Company contracts with third-party advisors and with third-party custodians. The Company has determined that it acts as principal in the majority of these transactions and therefore presents the amounts paid to third parties gross within *Other operating and administrative expenses*.

**Related Party Transactions**

The Company has related party transactions with certain of its subsidiaries and affiliates. These transactions, which are primarily short-term in nature, include cash accounts, collateralized financing transactions, margin accounts, derivative transactions, charges for operational support and the borrowing and lending of funds, and are entered into in the ordinary course of business. See Note 14 to the Consolidated Financial Statements for details on the Company's related party transactions.

## ACCOUNTING CHANGES

**Accounting for Financial Instruments—Credit Losses**

In June 2016, the Financial Accounting Standards Board (FASB) issued ASU No. 2016-13, *Financial Instruments—Credit Losses (Topic 326)*. The ASU introduced a new credit loss methodology, the current expected credit losses (CECL) methodology, which requires earlier recognition of credit losses while also providing additional disclosure about credit risk. CGMHI adopted the ASU as of January 1, 2020, which resulted in a $40 million increase in CGMHI’s opening *Retained earnings*, net of deferred income taxes, at January 1, 2020. Under the Company’s tax sharing agreement with Citigroup, the Company’s allocated portion of the deferred tax asset generated by Citigroup’s adoption of CECL is reflected in the increase in CGMHI’s opening *Retained earnings*.

The CECL methodology utilizes a lifetime “expected credit loss” measurement objective for the recognition of credit losses for loans, receivables and other financial assets measured at amortized cost at the time the financial asset is originated or acquired. The allowance for credit losses (ACL) is adjusted each period for changes in expected lifetime credit losses. The CECL methodology represents a significant change from prior U.S. GAAP and replaced the prior multiple existing impairment methods, which generally required that a loss be incurred before it was recognized. Within the life cycle of a loan or other financial asset, the methodology generally results in the earlier recognition of the provision for credit losses and the related ACL than prior U.S. GAAP.

*Secured Financing Transactions*

Most of CGMHI’s reverse repurchase agreements, securities borrowing arrangements and margin loans require that the borrower continually adjust the amount of the collateral securing CGMHI’s interest, primarily resulting from changes in the fair value of such collateral. In such arrangements, ACLs are recorded based only on the amount by which the asset’s amortized cost basis exceeds the fair value of the collateral. No ACLs are recorded where the fair value of the collateral is equal to or exceeds the asset’s amortized cost basis, as CGMHI does not expect to incur credit losses on such well-collateralized exposures.

**Reference Rate Reform**

In March 2020, the FASB issued ASU No. 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting*, which provides optional guidance to ease the potential burden in accounting for (or recognizing the effects of) reference rate reform on financial reporting. Specifically, the guidance permits an entity, when certain criteria are met, to consider amendments to contracts made to comply with reference rate reform to meet the definition of a modification under U.S. GAAP. It further allows hedge accounting to be maintained. The expedients and exceptions provided by the amendments are permitted to be adopted any time through December 31, 2022 and do not apply to contract modifications made and hedging relationships entered into or evaluated after December 31, 2022, except for certain optional expedients elected for certain hedging relationships existing as of December 31, 2022. The ASU was adopted by CGMHI as of June 30, 2020 with prospective application and did not impact financial results in 2020.

In January 2021, the FASB issued ASU No. 2021-01, *Reference Rate Reform (Topic 848): Scope*, which clarifies that the scope of the initial accounting relief issued by the FASB in March 2020 includes derivative instruments that do not reference a rate that is expected to be discontinued but that use an interest rate for margining, discounting, or contract price alignment that is modified as a result of reference rate reform (commonly referred to as the "discounting transition"). The amendments do not apply to contract modifications made after December 31, 2022, new hedging relationships entered into after December 31, 2022, and existing hedging relationships evaluated for effectiveness in periods after December 31, 2022, except for hedging relationships existing as of December 31, 2022, that apply certain optional expedients in which the accounting effects are recorded through the end of the hedging relationship. The ASU was adopted by CGMHI on a full retrospective basis upon issuance and did not impact financial results in 2020.

**Lease Accounting**

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*, which increases the transparency and comparability of accounting for lease transactions. The ASU requires lessees to recognize liabilities for operating leases and corresponding right-of-use (ROU) assets on the balance sheet. The ASU also requires quantitative and qualitative disclosures regarding key information about leasing arrangements. Lessee accounting for finance leases, as well as lessor accounting, is largely unchanged.

Effective January 1, 2019, the Company prospectively adopted the provisions of the ASU. At adoption, CGMHI recognized a lease liability and a corresponding ROU asset of approximately $0.7 billion on the Consolidated Statement of Financial Condition related to its future lease payments as a lessee under operating leases. In addition, the Company recorded a $14 million increase in *Retained earnings* for the cumulative effect of recognizing previously deferred gains on sale/leaseback transactions. Adoption of the ASU did not have a material impact on the Consolidated Statement of Income. See Note 13 for additional details.

The Company has elected not to separate lease and non-lease components in its lease contracts and accounts for them as a single lease component. CGMHI has also elected not to record an ROU asset for short-term leases that have a term of 12 months or less and do not contain purchase options that CGMHI is reasonably certain to exercise. The cost of short-term leases is recognized in the Consolidated Statement of Income on a straight-line basis over the lease term.

*Lessee accounting*

Operating lease ROU assets and lease liabilities are included in *Other assets* and *Other payables and accrued liabilities*, respectively, on the Consolidated Statement of Financial Condition. The Company uses Citi's incremental borrowing rate, factoring in the lease term, to determine the lease liability, which is measured at the present value of future lease payments. The ROU asset is initially measured at the amount of the lease liability plus any prepaid rent and remaining initial direct costs, less any remaining lease incentives and accrued rent. The ROU asset is subject to impairment, during the lease term, in a manner consistent with the impairment of long-lived assets. The lease terms include periods covered by options to extend or terminate the lease depending on whether CGMHI is reasonably certain to exercise such options.

**SEC Staff Accounting Bulletin 118**

On December 22, 2017, the SEC issued Staff Accounting Bulletin (SAB) 118, which set forth the accounting for the changes in tax law caused by the enactment of the Tax Cuts and Jobs Act (Tax Reform). SAB 118 provided guidance where the accounting under ASC 740 was incomplete for certain income tax effects of Tax Reform, at the time of the issuance of an entity's financial statements for the period in which Tax Reform was enacted (provisional items). CGMHI disclosed several provisional items recorded as part of its $754 million 2017 charge related to Tax Reform.

CGMHI completed its accounting for Tax Reform under SAB 118 during 2018 and recorded a one-time, non-cash tax charge of $46 million in *Provision for income taxes* related to amounts that were considered provisional pursuant to SAB 118. The adjustments for the provisional amounts consisted of a $30 million charge relating to the impact of deemed repatriation of undistributed earnings of non-U.S. subsidiaries, an additional $14 million charge relating to the impact of a change to a "quasi-territorial tax system" including state and local, and a $2 million charge relating to an increase of the valuation allowance against CGMHI's foreign tax credit (FTC) for the residual U.S. deferred tax assets (DTAs) relating to non-U.S. branches.

Also, CGMHI has made a policy election to account for taxes on Global Intangible Low Taxed Income (GILTI) as incurred.

**Revenue Recognition**

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* (Revenue Recognition), which outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers. The core principle of the revenue model is that an entity recognizes revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled, in exchange for those goods or services. The ASU defines the promised good or service as the performance obligation under the contract.

While the guidance replaces most existing revenue recognition guidance in GAAP, the ASU is not applicable to financial instruments and, therefore, does not impact a majority of the Company's revenues, including net interest income and mark-to-market accounting.

In accordance with the new revenue recognition standard, CGMHI has identified the specific performance obligation (promised services) associated with the contract with the customer and has determined when that specific performance obligation has been satisfied, which may be at a point in time or over time depending on how the performance obligation is defined. The contracts with customers also contain the transaction price, which consists of fixed consideration and/or consideration that may vary (variable consideration), and is defined as the amount of consideration an entity expects to be entitled to when or as the performance obligation is satisfied, excluding amounts collected on behalf of third parties (including transaction taxes). The amounts recognized at the point in time the performance obligation is satisfied may differ from the ultimate transaction price associated with that performance obligation when a portion of it is based on variable consideration. For example, some consideration is based on the client's month-end balance or market values, which are unknown at the time the contract is executed. The remaining transaction price amount, if any, will be recognized as the variable consideration becomes determinable. In certain transactions, the performance obligation is considered satisfied at a point in time in the future. In this instance, CGMHI defers revenue on the balance sheet that will only be recognized upon completion of the performance obligation.

The new revenue recognition standard further clarified the guidance related to reporting revenue gross as principal versus net as an agent. In many cases, CGMHI outsources a component of its performance obligations to third parties. The Company has determined that it acts as principal in the majority of these transactions and therefore presents the amounts paid to these third parties gross within operating expenses.

The Company has retrospectively adopted this standard as of January 1, 2018 and as a result was required to report amounts paid to third parties where CGMHI is principal to the contract within *Non-interest expenses*. The adoption resulted in an increase in both revenue and expenses of approximately $0.3 billion for each of the years ended December 31, 2020 and 2019 with similar amounts for prior years. Prior to adoption, these expense amounts were reported as contra revenue primarily within *Investment banking* and *Fiduciary fees* revenues. Accordingly, prior periods have been reclassified to conform to the new presentation.

## 2. PRINCIPAL TRANSACTIONS

CGMHI's *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. Not included in the table below is the impact of net interest revenue 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 11 to the Consolidated Financial Statements.

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

| *In millions of dollars* | 2020 | 2019 | 2018 |
|---|---|---|---|
| Interest rate risks (1) | $ 1,791 | $ 1,407 | $ 897 |
| Credit products and risks (2) | 1,931 | 779 | 720 |
| Commodity and other risks (3) | 598 | 266 | 661 |
| Equity risks (4) | 421 | 229 | 591 |
| Foreign exchange risks (5) | 70 | 60 | 58 |
| Total principal transactions revenue | $ 4,811 | $ 2,741 | $ 2,927 |

(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. INCENTIVE PLANS AND EMPLOYEE BENEFITS

### Discretionary Annual Incentive Awards

The Company participates in various Citigroup stock-based and other deferred incentive programs. Citigroup grants immediate cash bonus payments and various forms of immediate and deferred awards as part of its discretionary annual incentive award program involving a large segment of Citigroup's employees worldwide, including employees of the Company.

Discretionary annual incentive awards are generally awarded in the first quarter of the year based on the previous year's performance. Awards valued at less than U.S. $100,000 (or the local currency equivalent) are generally paid entirely in the form of an immediate cash bonus. Pursuant to Citigroup policy and/or regulatory requirements, certain employees are subject to mandatory deferrals of incentive pay and generally receive 25%–60% of their awards in a combination of restricted or deferred stock, deferred cash stock units or deferred cash. Discretionary annual incentive awards to many employees in the EU are subject to deferral requirements regardless of the total award value, with at least 50% of the immediate incentive delivered in the form of a stock payment award subject to a restriction on sale or transfer (generally, for 12 months).

Deferred annual incentive awards may be delivered in the form of one or more award types: a restricted or deferred stock award under Citigroup's Capital Accumulation Program (CAP), or a deferred cash stock unit award and/or a deferred cash award under Citigroup's Deferred Cash Award Plan. The applicable mix of awards may vary based on the employee's minimum deferral requirement and the country of employment.

Subject to certain exceptions (principally, for retirement-eligible employees), continuous employment within Citigroup is required to vest in CAP, deferred cash stock unit and deferred cash awards. Post employment vesting by retirement-eligible employees and participants who meet other conditions is generally conditioned upon their refraining from competition with Citigroup during the remaining vesting period, unless the employment relationship has been terminated by Citigroup under certain conditions.

Generally, the deferred awards vest in equal annual installments over three- or four-year periods. Vested CAP awards are delivered in shares of Citigroup common stock. Deferred cash awards are payable in cash and, except as prohibited by applicable regulatory guidance, earn a fixed notional rate of interest that is paid only if and when the underlying principal award amount vests. Deferred cash stock unit awards are payable in cash at the vesting value of the underlying stock. Generally, in the EU, vested CAP shares are subject to a restriction on sale or transfer after vesting, and vested deferred cash awards and deferred cash stock units are subject to hold back (generally, for 6 or 12 months based on award type).

Unvested CAP, deferred cash stock units and deferred cash awards are subject to one or more clawback provisions that apply in certain circumstances, including gross misconduct. CAP and deferred cash stock unit awards, made to certain employees, are subject to a formulaic performance-based vesting condition pursuant to which amounts otherwise scheduled to vest will be reduced based on the amount of any pretax loss in the participant's business in the calendar year preceding the scheduled vesting date. A minimum reduction of 20% applies for the first dollar of loss for CAP and deferred cash stock unit awards.

In addition, deferred cash awards are subject to a discretionary performance-based vesting condition under which an amount otherwise scheduled to vest may be reduced in the event of a "material adverse outcome" for which a participant has "significant responsibility." These awards are also subject to an additional clawback provision pursuant to which unvested awards may be canceled if the employee engaged in misconduct or exercised materially imprudent judgment, or failed to supervise or escalate the behavior of other employees who did.

### Sign-on and Long-Term Retention Awards

Stock awards and deferred cash awards may be made at various times during the year as sign-on awards to induce new hires to join the Company or to high-potential employees as long-term retention awards.

Vesting periods and other terms and conditions pertaining to these awards tend to vary by grant. Generally, recipients must remain employed through the vesting dates to vest in the awards, except in cases of death, disability or involuntary termination other than for gross misconduct. These awards do not usually provide for post employment vesting by retirement-eligible participants.

### Performance Share Units

Certain executive officers were awarded a target number of performance share units (PSUs) every February from 2017 to 2020, for performance in the year prior to the award date.

The PSUs granted each February from 2017 to 2020 were earned over the preceding three-year performance period, based half on Citigroup's return on tangible common equity performance in the last year of the three-year performance period, and the remaining half on Citigroup's cumulative earnings per share over the three-year performance period.

For all award years, if the total shareholder return is negative over the three-year performance period, executives may earn no more than 100% of the target PSUs, regardless of the extent to which Citigroup outperforms peer firms. The number of PSUs ultimately earned could vary from zero, if performance goals are not met, to as much as 150% of target, if performance goals are meaningfully exceeded.

For all award years, the value of each PSU is equal to the value of one share of Citigroup common stock. Dividend equivalents will be accrued and paid on the number of earned PSUs after the end of the performance period.

PSUs are subject to variable accounting, pursuant to which the associated value of the award will fluctuate with changes in Citigroup’s stock price and the attainment of the specified performance goals for each award, until the award is settled solely in cash after the end of the performance period.

**Stock Option Programs**
All outstanding stock options are fully vested, with the related expense recognized as a charge to income in prior periods.

**Other Variable Incentive Compensation**
Employees of CGMHI participate in various incentive plans globally that are used to motivate and reward performance primarily in the areas of sales, operational excellence and customer satisfaction. Participation in these plans is generally limited to employees who are not eligible for discretionary annual incentive awards. Other forms of variable compensation include monthly commissions paid to financial advisors.

**Summary**
Except for awards subject to variable accounting, the total expense recognized for stock awards represents the grant date fair value of such awards, which is generally recognized as a charge to income ratably over the vesting period, other than for awards to retirement-eligible employees and immediately vested awards. Whenever awards are made or are expected to be made to retirement-eligible employees, the charge to income is accelerated based on when the applicable conditions to retirement eligibility were or will be met. If the employee is retirement eligible on the grant date, or the award is vested at the grant date, the entire expense is recognized in the year prior to grant.

Recipients of Citigroup stock awards generally do not have any stockholder rights until shares are delivered upon vesting or exercise, or after the expiration of applicable required holding periods. Recipients of restricted or deferred stock awards and deferred cash stock unit awards, however, may, except as prohibited by applicable regulatory guidance, be entitled to receive or accrue dividends or dividend-equivalent payments during the vesting period. Recipients of restricted stock awards generally are entitled to vote the shares in their award during the vesting period. Once a stock award vests, the shares delivered to the participant are freely transferable, unless they are subject to a restriction on sale or transfer for a specified period.

The Company recognized compensation expense of $645 million, $599 million, and $602 million in 2020, 2019 and 2018, respectively, relating to its stock-based and deferred compensation programs.

**Pension, Postretirement, Post Employment and Defined Contribution Plans**
The Company participates in several non-contributory defined benefit pension plans sponsored by Citigroup covering certain U.S. employees and has various defined benefit pension and termination indemnity plans covering employees outside the U.S.

Citigroup’s U.S. qualified defined benefit plan was frozen effective January 1, 2008 for most employees. Accordingly, no additional compensation-based contributions have been credited to the cash balance portion of the plan for existing plan participants after 2007. However, certain employees covered under the prior final pay plan formula continue to accrue benefits. The Company also participates in postretirement health care and life insurance benefits offered by Citigroup to certain eligible U.S. retired employees, as well as to certain eligible employees outside the U.S.

The Company also participates in a number of non-contributory, nonqualified pension plans. These plans, which are unfunded, provide supplemental defined pension benefits to certain U.S. employees. With the exception of certain employees covered under the prior final pay plan formula, the benefits under these plans were frozen in prior years.

Citigroup sponsors U.S. post employment plans that provide income continuation and health and welfare benefits to certain eligible U.S. employees on long-term disability.

The Company participates in several defined contribution plans in the U.S. and in certain non-U.S. locations, all of which are administered in accordance with local laws. The most significant defined contribution plan is the Citi Retirement Savings Plan sponsored by Citigroup in the U.S.

Under the Citi Retirement Savings Plan, eligible U.S. employees received matching contributions of up to 6% of their eligible compensation for 2020 and 2019, subject to statutory limits. In addition, for eligible employees whose eligible compensation is $100,000 or less, a fixed contribution of up to 2% of eligible compensation is provided. All contributions from the plan sponsor are invested according to participants' individual elections.

The Company's allocated pretax expense associated with the Citigroup pension, postretirement, post employment and defined contribution plans amounted to approximately $133 million, $128 million, and $127 million for the years ended December 31, 2020, 2019 and 2018, respectively.

**Health Care and Life Insurance Plans**
The Company, through Citigroup, offers certain health care and life insurance benefits to its employees. The Company's allocated share of the related pretax expense associated with Citigroup health care and life insurance benefits amounted to approximately $76 million, $72 million, and $69 million for the years ended December 31, 2020, 2019 and 2018, respectively.

## 4. INCOME TAXES

The operations of the Company are subject to income tax laws of the U.S. and its state and municipalities, and the foreign jurisdictions in which it operates. The Company's U.S. federal, state and local income taxes, and state and local unitary deferred taxes are provided for based on an income tax sharing agreement with Citigroup. Under the tax sharing agreement with Citigroup, the Company settles its current tax liability with Citigroup throughout the year except for any tax liabilities expected to be payable as a separate taxpayer. The Company is included in the consolidated U.S. federal income tax return and unitary and combined state returns of Citigroup and combined subsidiaries.

**Income Tax Provision**
Details of the Company's income tax provision are presented below:

| *In millions of dollars* | 2020 | 2019 | 2018 |
|---|---|---|---|
| Current tax provision (benefit): | | | |
| Federal | $ 656 | $ 140 | $ (154) |
| Non-U.S. | 470 | 181 | 338 |
| State | 66 | 46 | (61) |
| Total current tax provision (benefit) | 1,192 | 367 | 123 |
| Deferred tax provision (benefit): | | | |
| Federal | (263) | (160) | 226 |
| Non-U.S. | (26) | 71 | (25) |
| State | 65 | 218 | 238 |
| Total deferred tax provision (benefit) | (224) | 129 | 439 |
| Provision (benefit) for income taxes before noncontrolling interests | 968 | 496 | 562 |
| Income tax expense (benefit) reported in stockholder's equity related to: | | | |
| Foreign currency translation | — | (3) | (3) |
| Pension liability adjustments | (3) | (32) | (1) |
| Net change in DVA | (106) | (181) | 115 |
| Retained earnings (1) | (46) | — | — |
| Income taxes before noncontrolling interests | $ 813 | $ 280 | $ 673 |

(1) Reflects the tax effect of ASU 2016-13 for current expected credit losses (CECL).

The Company paid taxes of $1.1 billion, $415 million and $455 million in 2020, 2019 and 2018, respectively. As of December 31, 2020, the Company had federal, state and foreign income taxes receivable in the amount of $418 million.

**Tax Rate**

The reconciliation of the federal statutory income tax rate to the Company's effective income tax rate applicable to income from continuing operations (before noncontrolling interests and the cumulative effect of accounting changes) for each of the periods indicated is as follows:

| | 2020 | 2019 | 2018 |
|---|---|---|---|
| **Federal statutory rate** | 21% | 21% | 21% |
| State income taxes, net of federal benefit | 2 | 19 | 8 |
| Non-U.S. income tax rate differential | (2) | 5 | 6 |
| Tax advantaged investments | (1) | (3) | (3) |
| Meals and entertainment | — | — | 1 |
| Effect of tax law changes (1) | — | (2) | 3 |
| Intercompany transfer pricing adjustment | — | (1) | (1) |
| Other, net | 1 | 1 | — |
| Effective income tax rate | 21% | 40% | 35% |

(1) 2018 includes one-time Tax Reform charges of $46 million for amounts that were considered provisional pursuant to SAB 118.

**Deferred Income Taxes**

Deferred income taxes at December 31 related to the following:

| *In millions of dollars* | 2020 | 2019 |
|---|---|---|
| **Deferred tax assets** | | |
| Tax credit and net operating loss carry-forwards | $ 1,674 | $ 1,960 |
| Allocated deferred state taxes | 693 | 489 |
| Deferred compensation and employee benefits | 383 | 358 |
| Investments | 521 | 351 |
| U.S tax on non-U.S. earnings | 263 | 199 |
| Fixed assets and leases | 338 | 197 |
| Debt issuances | 173 | 91 |
| Restructuring and settlement reserves | 18 | 17 |
| Credit loss deduction | 10 | 9 |
| Other deferred tax assets | 172 | 176 |
| Gross deferred tax assets | 4,245 | 3,847 |
| Valuation allowance | (337) | (430) |
| **Deferred tax assets after valuation allowance** | 3,908 | 3,417 |
| **Deferred tax liabilities** | | |
| Federal impact on state taxes | (397) | (408) |
| Intangibles | (190) | (190) |
| Intercompany debt underwriting fees | (70) | (62) |
| Non-U.S. withholding taxes | (58) | (48) |
| Other deferred tax liabilities | (169) | (106) |
| Gross deferred tax liabilities | (884) | (814) |
| **Net deferred tax assets** | $ 3,024 | $ 2,603 |

**Unrecognized Tax Benefits**
The following is a roll-forward of the Company's unrecognized tax benefits:

| *In millions of dollars* | 2020 | 2019 | 2018 |
|---|---|---|---|
| **Total unrecognized tax benefits at January 1** | $ 67 | $ 63 | $ 60 |
| Net amount of increases for current year's tax positions | 11 | 5 | 6 |
| Gross amount of increases for prior years' tax positions | 8 | 7 | 1 |
| Gross amount of decreases for prior years' tax positions | (10) | (8) | (3) |
| Reductions due to lapse of statutes of limitation | (2) | — | — |
| Amounts of decreases relating to settlements | — | — | (1) |
| **Total unrecognized tax benefits at December 31** | $ 74 | $ 67 | $ 63 |

The total amounts of unrecognized tax benefits at December 31, 2020, 2019 and 2018 that, if recognized, would affect CGMHI's tax expense, are $74 million, $67 million and $63 million, respectively.

Interest and penalties (not included in unrecognized tax benefits above) are a component of *Provision for income taxes*.

| | 2020 | | 2019 | | 2018 | |
|---|---|---|---|---|---|---|
| *In millions of dollars* | Pretax | Net of tax | Pretax | Net of tax | Pretax | Net of tax |
| Total interest and penalties on the Consolidated Statement of Financial Condition at January 1 | $ 1 | $ 1 | $ 1 | $ 1 | $ — | $ — |
| Total interest and penalties on the Consolidated Statement of Income | (1) | (1) | — | — | 1 | 1 |
| Total interest and penalties on the Consolidated Statement of Financial Condition at December 31 | — | — | 1 | 1 | 1 | 1 |

As of December 31, 2020, the Company was under audit by the Internal Revenue Service and other major taxing jurisdictions around the world. It is thus reasonably possible that significant changes in the gross balance of unrecognized tax benefits may occur within the next 12 months, although the Company does not expect such audits to result in amounts that would cause a significant change to its effective tax rate.

The following are the major tax jurisdictions in which the Company and its affiliates operate and the earliest tax year subject to examination:

| **Jurisdiction** | **Tax year** |
|---|---|
| United States | 2016 |
| New York State and City | 2012 |
| California | 2013 |
| United Kingdom | 2016 |

**Non-U.S. Earnings**
Non-U.S. pretax earnings approximated $1,685 million in 2020, $471 million in 2019 and $1,031 million in 2018. As a U.S. corporation, CGMHI and its U.S. subsidiaries are currently subject to U.S. taxation on all non-U.S. pretax earnings of non-U.S. branches. Beginning in 2018, there is a separate foreign tax credit (FTC) basket for branches. Also, dividends from non-U.S. entities or affiliates are effectively exempt from U.S. taxation. The Company provides income taxes on the book over tax basis differences of non-U.S. entities except to the extent that such differences are indefinitely reinvested outside the U.S.

At December 31, 2020, there was no basis differences of non-U.S. entities and no tax would have to be provided.

**Deferred Tax Assets**
At December 31, 2020, the Company had a valuation allowance of $337 million, a decrease of $93 million from the balance at December 31, 2019. The decrease in the valuation allowance balance mainly relates to the non-U.S. branch FTC carry-forwards and the U.S. residual DTAs on the non-U.S. branches. The December 31, 2020 valuation allowance is composed of valuation allowances of $244 million on its U.S. residual DTA related to its non-U.S. branches, $77 million on state net operating loss carry-forwards, $7 million on its FTC carry-forwards and $7 million on its non-U.S. DTAs. The valuation allowance against U.S. residual DTAs on non-U.S. branches and FTC results from the impact of the lower tax rate and the new separate FTC basket for non-U.S. branches, as well as diminished ability under Tax Reform to generate income from

sources outside the U.S. to support utilization. The absolute amount of the Company's post-Tax Reform-related valuation allowance may change in future years since the separate FTC basket for non-U.S. branches will result in additional DTAs (for FTCs) requiring a valuation allowance, given that the local tax rate for these branches exceeds on average the U.S. tax rate of 21%. Although it is not assured, the Company believes that the realization of the recognized net deferred tax asset of $3.0 billion at December 31, 2020 is more-likely-than-not to be realized, based on the recognition of its federal and certain state deferred tax assets in CGMHI's financial statements and expectations as to future taxable income in jurisdictions in which the other deferred tax assets arise, and available tax planning strategies (as defined in ASC 740, *Income Taxes*) that would be implemented, if necessary, to prevent a carryforward from expiring.

Foreign tax credit carry-forwards expire in 2028 and state and local net operating loss (NOL) carry-forwards expire in 2034. In addition, the Company has NOL carry-forwards related to non-consolidated tax return companies that are eventually expected to be utilized in Citigroup's consolidated tax return, and that expire between 2027 and 2031.

## 5. SECURITIES BORROWED, LOANED AND SUBJECT TO REPURCHASE AGREEMENTS

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

| | December 31, | |
|---|---|---|
| *In millions of dollars* | 2020 | 2019 |
| Securities purchased under agreements to resell (including $146,729 and $119,144 as of December 31, 2020 and 2019, respectively, at fair value) | $ 181,587 | $ 145,782 |
| Deposits paid for securities borrowed (including $37,194 and $32,076 as of December 31, 2020 and 2019, respectively, at fair value) | 81,440 | 71,201 |
| Total | $ 263,027 | $ 216,983 |

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

| | December 31, | |
|---|---|---|
| *In millions of dollars* | 2020 | 2019 |
| Securities sold under agreements to repurchase (including $59,965 and $40,064 as of December 31, 2020 and 2019, respectively, at fair value) | $ 242,798 | $ 170,517 |
| Deposits received for securities loaned (including $241 and $435 as of December 31, 2020 and 2019, respectively, at fair value) | 18,458 | 11,537 |
| Total | $ 261,256 | $ 182,054 |

The resale and repurchase agreements represent collateralized financing transactions. The Company executes these transactions primarily through its broker-dealer subsidiaries to facilitate customer matched-book activity and to efficiently fund a portion of the Company's trading inventory.

To maintain reliable funding under a wide range of market conditions, including under periods of stress, CGMHI manages these activities by taking into consideration the quality of the underlying collateral and stipulating financing tenor. CGMHI manages the risks in its collateralized financing transactions by conducting daily stress tests to account for changes in capacity, tenors, haircut, collateral profile and client actions. In addition, CGMHI maintains counterparty diversification by establishing concentration triggers and assessing counterparty reliability and stability under stress.

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.

Collateral typically consists of government and government-agency securities, corporate and municipal bonds, equities and mortgage- and other asset-backed securities.

The resale and repurchase agreements are generally documented under industry standard agreements that allow the prompt close-out of all transactions (including the liquidation of securities held) and the offsetting of obligations to return cash or securities by the non-defaulting party, following a payment default or other type of default under the relevant master agreement. Events of default generally include (i) failure to deliver cash or securities as required under the transaction, (ii) failure to provide or return cash or securities as used for margining purposes, (iii) breach of representation, (iv) cross-default to another transaction entered into among the parties, or, in some cases, their affiliates and (v) a repudiation of obligations under the agreement. The counterparty that receives the securities in these transactions is generally unrestricted in its use of the securities, with the exception of transactions executed on a tri-party basis, where the collateral is maintained by a custodian and operational limitations may restrict its use of the securities.

A substantial portion of the resale and repurchase agreements is recorded at fair value, as described in Notes 11 and 12 to the Consolidated Financial Statements. The remaining portion is carried at the amount of cash initially advanced or received, plus accrued interest, as specified in the respective agreements.

The securities borrowing and lending agreements also represent collateralized financing transactions similar to the resale and repurchase agreements. Collateral typically consists of government and government-agency securities and corporate debt and equity securities.

Similar to the resale and repurchase agreements, securities borrowing and lending agreements are generally documented under industry standard agreements that allow the prompt close-out of all transactions (including the liquidation of securities held) and the offsetting of obligations to return cash or securities by the non-defaulting party, following a payment default or other default by the other party under the relevant master agreement. Events of default and rights to use securities under the securities borrowing and lending agreements are similar to the resale and repurchase agreements referenced above.

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 12 to the Consolidated Financial Statements. 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 obtains or posts additional collateral in order to maintain contractual margin protection.

The enforceability of offsetting rights incorporated in the master netting agreements for resale and repurchase agreements, and securities borrowing and lending agreements, is evidenced to the extent that (i) a supportive legal opinion has been obtained from counsel of recognized standing that provides the requisite level of certainty regarding the enforceability of these agreements and (ii) 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 have been sought or obtained for certain jurisdictions where local law is silent or sufficiently ambiguous to determine the enforceability of offsetting 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 for a particular counterparty type may be nonexistent or unclear as overlapping regimes may exist. For example, this may be the case for certain sovereigns, municipalities, central banks and U.S. pension plans.

The following tables present the gross and net resale and repurchase agreements and securities borrowing and lending agreements and the related offsetting amount 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 December 31, 2020 | | | | |
|---|---|---|---|---|---|
| *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 | $ 337,336 | $ 155,749 | $ 181,587 | $ 166,577 | $ 15,010 |
| Deposits paid for securities borrowed | 87,798 | 6,358 | 81,440 | 18,512 | 62,928 |
| Total | $ 425,134 | $ 162,107 | $ 263,027 | $ 185,089 | $ 77,938 |

| *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 | $ 398,547 | $ 155,749 | $ 242,798 | $ 163,440 | $ 79,358 |
| Deposits received for securities loaned | 24,816 | 6,358 | 18,458 | 8,352 | 10,106 |
| Total | $ 423,363 | $ 162,107 | $ 261,256 | $ 171,792 | $ 89,464 |

| | As of December 31, 2019 | | | | |
|---|---|---|---|---|---|
| *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 | $ 254,998 | $ 109,216 | $ 145,782 | $ 125,676 | $ 20,106 |
| Deposits paid for securities borrowed | 79,800 | 8,599 | 71,201 | 17,361 | 53,840 |
| Total | $ 334,798 | $ 117,815 | $ 216,983 | $ 143,037 | $ 73,946 |

| *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 | $ 279,733 | $ 109,216 | $ 170,517 | $ 124,746 | $ 45,771 |
| Deposits received for securities loaned | 20,136 | 8,599 | 11,537 | 3,502 | 8,035 |
| Total | $ 299,869 | $ 117,815 | $ 182,054 | $ 128,248 | $ 53,806 |

(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 December 31, 2020 | | | | |
|---|---|---|---|---|---|
| *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 | $ 220,003 | $ 96,151 | $ 43,850 | $ 38,543 | $ 398,547 |
| Deposits received for securities loaned | 18,805 | 3 | 2,770 | 3,238 | 24,816 |
| Total | $ 238,808 | $ 96,154 | $ 46,620 | $ 41,781 | $ 423,363 |

| | As of December 31, 2019 | | | | |
|---|---|---|---|---|---|
| *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 | $ 128,891 | $ 75,313 | $ 35,427 | $ 40,102 | $ 279,733 |
| Deposits received for securities loaned | 17,352 | 208 | 1,789 | 787 | 20,136 |
| Total | $ 146,243 | $ 75,521 | $ 37,216 | $ 40,889 | $ 299,869 |

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

| | As of December 31, 2020 | | |
|---|---|---|---|
| *In millions of dollars* | Repurchase agreements | Securities lending agreements | Total |
| U.S. Treasury and federal agency securities | $ 177,658 | $ — | $ 177,658 |
| State and municipal securities | 664 | 1 | 665 |
| Foreign government securities | 124,836 | 194 | 125,030 |
| Corporate bonds | 20,121 | 78 | 20,199 |
| Equity securities | 23,439 | 24,277 | 47,716 |
| Mortgage-backed securities | 44,678 | — | 44,678 |
| Asset-backed securities | 3,307 | — | 3,307 |
| Other trading assets | 3,844 | 266 | 4,110 |
| Total | $ 398,547 | $ 24,816 | $ 423,363 |

| | As of December 31, 2019 | | |
|---|---|---|---|
| *In millions of dollars* | Repurchase agreements | Securities lending agreements | Total |
| U.S. Treasury and federal agency securities | $ 128,259 | $ 27 | $ 128,286 |
| State and municipal securities | 1,938 | 5 | 1,943 |
| Foreign government securities | 83,478 | 272 | 83,750 |
| Corporate bonds | 18,391 | 249 | 18,640 |
| Equity securities | 11,927 | 19,429 | 31,356 |
| Mortgage-backed securities | 27,805 | — | 27,805 |
| Asset-backed securities | 4,872 | — | 4,872 |
| Other trading assets | 3,063 | 154 | 3,217 |
| Total | $ 279,733 | $ 20,136 | $ 299,869 |

## 6. DEBT

### Short-Term Borrowings

| | 2020 | | 2019 | |
|---|---|---|---|---|
| *In millions of dollars* | Balance | Weighted average | Balance | Weighted average |
| Commercial paper | $ 7,988 | 0.3% | $ 6,321 | 2.1% |
| Other borrowings | 17,092 | 0.8% | 21,904 | 2.2% |
| Total | $ 25,080 | | $ 28,225 | |

*Short-term borrowings* with affiliates totaled $12.8 billion and $17.1 billion at December 31, 2020 and 2019, respectively.

CGMHI has borrowing agreements consisting of facilities that CGMHI has been advised are available, but where no contractual lending obligation exists. These arrangements are reviewed on an ongoing basis to ensure flexibility in meeting CGMHI's short-term requirements.

**Long-Term Debt**

*Long-term debt* consists of issues with original maturities in excess of one year. The Company's long-term debt at December 31, 2020 was as follows:

| *In millions of dollars* | Weighted average coupon (1) | Maturities | Balances at December 31, 2020 | 2019 |
|---|---|---|---|---|
| Senior notes | 1.6% | 2021-2070 | $ 99,671 | $ 93,117 |
| Subordinated notes | 2.1% | 2022-2039 | 15,503 | 13,252 |
| Total | | | $ 115,174 | $ 106,369 |

(1) The weighted average coupon excludes structured notes accounted for at fair value.

*Long-term debt* with affiliates totaled $67.3 billion and $66.8 billion at December 31, 2020 and 2019, respectively. The debt with affiliates matures on various dates from 2021 to 2039.

The Company issues both fixed- and variable-rate debt in a range of currencies. It uses interest rate swaps to effectively convert a portion of its fixed-rate debt to variable-rate debt. The maturity structure of the interest rate swaps corresponds to the maturity structure of the debt being hedged. At December 31, 2020, the Company's overall weighted average interest rate for long-term debt, excluding structured notes accounted for at fair value, was 1.7% on a contractual basis.

Aggregate annual maturities of long-term debt obligations (based on final maturity dates) are as follows:

| *In millions of dollars* | |
|---|---|
| 2021 | $ 8,434 |
| 2022 | 13,239 |
| 2023 | 11,706 |
| 2024 | 7,032 |
| 2025 | 9,676 |
| Thereafter | 65,087 |
| Total | $ 115,174 |

## 7. CAPITAL REQUIREMENTS

Certain U.S. and non-U.S. broker/dealer subsidiaries 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.

Citigroup Global Markets Inc. (CGMI), a U.S. broker-dealer registered with the SEC that is an indirect wholly owned subsidiary of CGMHI, has elected to compute net capital in accordance with the provisions of Appendix E of the Net Capital Rule. This methodology allows CGMI to compute market risk capital charges using internal value-at-risk models. Under Appendix E of the Net Capital Rule, CGMI is required to hold tentative net capital in excess of $1 billion and net capital in excess of $500 million. CGMI is also required to notify the SEC in the event that its tentative net capital is less than $5 billion. As of December 31, 2020, CGMI had tentative net capital in excess of both the minimum and the notification requirements. At December 31, 2020, CGMI had regulatory net capital of $12.7 billion, which was $9.1 billion in excess of the minimum net capital requirement of $3.6 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 capital of $23.5 billion at December 31, 2020, 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 December 31, 2020.

## 8. SECURITIZATIONS AND VARIABLE INTEREST ENTITIES

**Uses of Special Purpose Entities**

A special purpose entity (SPE) is an entity designed to fulfill a specific limited need of the company that organized it. The principal uses of SPEs by the Company are to obtain liquidity and favorable capital treatment by securitizing certain financial assets, to assist clients in securitizing their financial assets and to create investment products for clients. SPEs may be organized in various legal forms, including trusts, partnerships or corporations. In a securitization, through the SPE's issuance of debt and equity instruments, certificates, commercial paper or other notes of indebtedness, the company transferring assets to the SPE converts all (or a portion) of those assets into cash before they would have been realized in the normal course of business. These issuances are recorded on the balance sheet of the SPE, which may or may not be consolidated onto the balance sheet of the company that organized the SPE.

Investors usually have recourse only to the assets in the SPE, but may also benefit from other credit enhancements, such as a collateral account, a line of credit or a liquidity facility, such as a liquidity put option or asset purchase agreement. Because of these enhancements, the SPE issuances typically obtain a more favorable credit rating than the transferor could obtain for its own debt issuances. This results in less expensive financing costs than unsecured debt. The SPE may also enter into derivative contracts in order to convert the yield or currency of the underlying assets to match the needs of the SPE investors or to limit or change the credit risk of the SPE. The Company may be the provider of certain credit enhancements as well as the counterparty to any related derivative contracts.

Most of the Company's SPEs are variable interest entities (VIEs), as described below.

***Variable Interest Entities***

VIEs are entities that have either a total equity investment that is insufficient to permit the entity to finance its activities without additional subordinated financial support or whose equity investors lack the characteristics of a controlling financial interest (i.e., ability to make significant decisions through voting rights or similar rights and a right to receive the expected residual returns of the entity or an obligation to absorb the expected losses of the entity). Investors that finance the VIE through debt or equity interests or other counterparties providing other forms of support, such as guarantees, certain fee arrangements or certain types of derivative contracts, are variable interest holders in the entity.

The variable interest holder, if any, that has a controlling financial interest in a VIE is deemed to be the primary beneficiary and must consolidate the VIE. The Company would be deemed to have a controlling financial interest and be the primary beneficiary if it has both of the following characteristics:

- power to direct the activities of the VIE that most significantly impact the entity's economic performance; and
- an obligation to absorb losses of the entity that could potentially be significant to the VIE, or a right to receive benefits from the entity that could potentially be significant to the VIE.

The Company must evaluate each VIE to understand the purpose and design of the entity, the role the Company had in the entity's design and its involvement in the VIE's ongoing activities. The Company then must evaluate which activities most significantly impact the economic performance of the VIE and who has the power to direct such activities.

For those VIEs where the Company determines that it has the power to direct the activities that most significantly impact the VIE's economic performance, the Company must then evaluate its economic interests, if any, and determine whether it could absorb losses or receive benefits that could potentially be significant to the VIE. When evaluating whether the Company has an obligation to absorb losses that could potentially be significant, it considers the maximum exposure to such loss without consideration of probability. Such obligations could be in various forms, including, but not limited to, debt and equity investments, guarantees, liquidity agreements and certain derivative contracts.

In various other transactions, the Company may (i) act as a derivative counterparty (for example, interest rate swap, cross-currency swap or 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), (ii) act as underwriter or placement agent, (iii) provide administrative, trustee or other services or (iv) make a market in debt securities or other instruments issued by VIEs. The Company generally considers such involvement, by itself, not to be variable interests and thus not an indicator of power or potentially significant benefits or losses.

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

| | As of December 31, 2020 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total involvement with SPE assets | Consolidated VIE / SPE assets | Significant unconsolidated VIE assets (2) | Maximum exposure to loss in significant unconsolidated VIEs (1) | | | |
| *In millions of dollars* | | | | Debt investments (3) | Funding commitments | Derivatives | Total |
| Mortgage securitizations (4) | | | | | | | |
| U.S. agency-sponsored | $ 83,579 | $ — | $ 83,579 | $ 1,642 | $ — | $ — | $ 1,642 |
| Non-agency-sponsored | 27,125 | — | 27,125 | 497 | — | — | 497 |
| Collateralized loan obligations | 9,990 | — | 9,990 | 126 | — | — | 126 |
| Other | 736 | 181 | 555 | — | — | 56 | 56 |
| Total | $ 121,430 | $ 181 | $ 121,249 | $ 2,265 | $ — | $ 56 | $ 2,321 |

| | As of December 31, 2019 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total involvement with SPE assets | Consolidated VIE / SPE assets | Significant unconsolidated VIE assets (2) | Maximum exposure to loss in significant unconsolidated VIEs (1) | | | |
| *In millions of dollars* | | | | Debt investments (3) | Funding commitments | Derivatives | Total |
| Mortgage securitizations (4) | | | | | | | |
| U.S. agency-sponsored | $ 73,483 | $ — | $ 73,483 | $ 2,196 | $ — | $ — | $ 2,196 |
| Non-agency-sponsored | 25,836 | — | 25,836 | 408 | — | — | 408 |
| Collateralized loan obligations | 8,021 | — | 8,021 | 270 | — | — | 270 |
| Other | 560 | 27 | 533 | 4 | 4 | 1 | 9 |
| Total | $ 107,900 | $ 27 | $ 107,873 | $ 2,878 | $ 4 | $ 1 | $ 2,883 |

(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 December 31, 2020 and 2019 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 (for more information on these positions, see Note 11 to the Consolidated Financial Statements); and
- certain representations and warranties exposures in legacy CGMHI-sponsored mortgage- and asset-backed securitizations in which the Company has no variable interest or continuing involvement as servicer. The outstanding balance of mortgage loans securitized during 2005 to 2008 in which the Company has no variable interest or continuing involvement as servicer was approximately $5.22 billion and $6 billion at December 31, 2020 and 2019, respectively.

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 special purpose entity.

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 | |
|---|---|---|---|---|---|---|
| *In millions of dollars* | 2020 | 2019 | 2020 | 2019 | 2020 | 2019 |
| Residential mortgages | $ 3,307 | $ 1,067 | $ 158 | $ 33 | $ — | $ — |

*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 years ended December 31, 2020 and 2019. These securities are backed by either residential or commercial mortgages and are often structured on behalf of clients. As of December 31, 2020 and December 31, 2019, 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 years ended December 31, 2020 and 2019, CGMHI transferred agency securities with a fair value of approximately $42.8 billion and $31.9 billion, respectively, to re-securitization entities.

As of December 31, 2020, the fair value of CGMHI-retained interests in agency re-securitization transactions structured by CGMHI totaled approximately $1.6 billion (including $916 million related to re-securitization transactions executed in 2020) compared to $2.2 billion as of December 31, 2019 (including $1.3 billion related to re-securitization transactions executed in 2019), which is recorded in *Trading account assets*. The original fair value of agency re-securitization transactions in which CGMHI holds a retained interest as of December 31, 2020 and 2019 was approximately $83.6 billion and $73.5 billion, respectively.

As of December 31, 2020 and 2019, the Company did not consolidate any private label or agency re-securitization entities.

***Collateralized Loan Obligations (CLOs)***
A collateralized loan obligation (CLO) is a VIE that purchases a portfolio of assets consisting primarily of non-investment grade corporate loans. CLOs issue multiple tranches of debt and equity to investors to fund the asset purchases and pay upfront expenses associated with forming the CLO. A third-party asset manager is contracted by the CLO to purchase the underlying assets from the open market and monitor the credit risk associated with those assets. Over the term of a CLO, the asset manager directs purchases and sales of assets in a manner consistent with the CLO's asset management agreement and indenture. In general, the CLO asset manager will have the power to direct the activities of the entity that most significantly impact the economic performance of the CLO. Investors in a CLO, through their ownership of debt and/or equity in it, can also direct certain activities of the CLO, including removing its asset manager under limited circumstances, optionally redeeming the notes, voting on amendments to the CLO's operating documents and other activities. A CLO has a finite life, typically 12 years.

The Company serves as a structuring and placement agent with respect to the CLOs. Typically, the debt and equity of the CLOs are sold to third-party investors. On occasion, certain CGMHI entities may purchase some portion of a CLO's liabilities for investment purposes. In addition, CGMHI may purchase, typically in the secondary market, certain securities issued by the CLOs to support its market making activities.

The Company generally does not have the power to direct the activities that most significantly impact the economic performance of the CLOs, as this power is generally held by a third-party asset manager of the CLO. As such, those CLOs are not consolidated.

## 9. DERIVATIVES

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. Futures contracts and other option contracts are standardized contracts that are traded on an exchange with a central counterparty 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 a party's becoming a materially weaker credit 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.

Information pertaining to the Company’s derivative 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. All derivatives are recorded in *Trading account assets/Trading account liabilities* on the Consolidated Statement of Financial Condition.

**Derivative Notionals**

| | Hedging instruments under ASC 815 | | Trading derivative instruments | |
|---|---|---|---|---|
| *In millions of dollars* | December 31, 2020 | December 31, 2019 | December 31, 2020 | December 31, 2019 |
| **Interest rate contracts** | | | | |
| Swaps | $ 291 | $ 276 | $ 6,813,992 | $ 5,277,764 |
| Futures and forwards | — | — | 2,405,667 | 1,171,365 |
| Written options | — | — | 521,959 | 701,157 |
| Purchased options | — | — | 496,653 | 672,318 |
| **Total interest rate contracts** | 291 | 276 | 10,238,271 | 7,822,604 |
| **Foreign exchange contracts** | | | | |
| Swaps | — | — | 1,034,458 | 713,844 |
| Futures, forwards and spot | — | — | 291,416 | 542,261 |
| Written options | — | — | 92,708 | 90,334 |
| Purchased options | — | — | 94,574 | 91,152 |
| **Total foreign exchange contracts** | — | — | 1,513,156 | 1,437,591 |
| **Equity contracts** | | | | |
| Swaps | — | — | 194,066 | 160,127 |
| Futures and forwards | — | — | 52,590 | 54,159 |
| Written options | — | — | 314,827 | 386,068 |
| Purchased options | — | — | 315,281 | 413,532 |
| **Total equity contracts** | — | — | 876,764 | 1,013,886 |
| **Commodity and other contracts** | | | | |
| Swaps | — | — | 79,342 | 64,064 |
| Futures and forwards | 924 | 1,195 | 66,850 | 61,650 |
| Written options | — | — | 15,153 | 22,216 |
| Purchased options | — | — | 14,727 | 18,586 |
| **Total commodity and other contracts** | 924 | 1,195 | 176,072 | 166,516 |
| **Credit derivatives** (1) | | | | |
| Protection sold | — | — | 530,469 | 863,633 |
| Protection purchased | — | — | 539,691 | 886,178 |
| **Total credit derivatives** | — | — | 1,070,160 | 1,749,811 |
| **Total derivative notionals** | $ 1,215 | $ 1,471 | $ 13,874,423 | $ 12,190,408 |

(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 December 31, 2020 and 2019. 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. As a result, the table reflects a reduction of approximately $16.5 billion and $12.5 billion as of December 31, 2020 and 2019, respectively, of derivative assets and derivative liabilities that previously would have been reported on a gross basis, but are now legally settled and not subject to collateral. 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) | | | |
|---|---|---|---|---|
| | December 31, 2020 | | December 31, 2019 | |
| *In millions of dollars* | Assets | Liabilities | Assets | Liabilities |
| **Derivatives instruments designated as ASC 815 hedges** | | | | |
| Over-the-counter interest rate contracts | $ 26 | $ — | $ 30 | $ — |
| **Total derivatives instruments designated as ASC 815 hedges** | 26 | — | 30 | — |
| **Derivatives instruments not designated as ASC 815 hedges** | | | | |
| Over-the-counter | 224,801 | 221,885 | 168,642 | 163,541 |
| Cleared | 5,062 | 7,072 | 3,965 | 4,292 |
| Exchange traded | 10 | 19 | 2 | 5 |
| **Interest rate contracts** | 229,873 | 228,976 | 172,609 | 167,838 |
| Over-the-counter | 26,445 | 27,059 | 20,080 | 20,009 |
| Cleared | — | — | 210 | 210 |
| **Foreign exchange contracts** | 26,445 | 27,059 | 20,290 | 20,219 |
| Over-the-counter | 16,410 | 21,995 | 19,849 | 19,312 |
| Cleared | 1 | 18 | — | — |
| Exchange traded | 17,430 | 17,549 | 5,787 | 6,597 |
| **Equity contracts** | 33,841 | 39,562 | 25,636 | 25,909 |
| Over-the-counter | 10,079 | 13,878 | 10,796 | 13,174 |
| Exchange traded | 295 | 184 | 51 | 21 |
| **Commodity and other contracts** | 10,374 | 14,062 | 10,847 | 13,195 |
| Over-the-counter | 10,818 | 10,964 | 20,981 | 20,902 |
| Cleared | 1,897 | 2,113 | 1,483 | 1,688 |
| **Credit derivatives** | 12,715 | 13,077 | 22,464 | 22,590 |
| **Total derivatives instruments not designated as ASC 815 hedges** | 313,248 | 322,736 | 251,846 | 249,751 |
| **Total derivatives** | 313,274 | 322,736 | 251,876 | 249,751 |
| Cash collateral paid/received (3) | 6,491 | 9,956 | 4,592 | 7,700 |
| Less: Netting agreements (4) | (275,608) | (275,608) | (220,100) | (220,100) |
| Less: Netting cash collateral received/paid (5) | (21,702) | (25,953) | (20,597) | (17,846) |
| **Net receivables / payables included on the Consolidated Statement of Financial Condition** | $ 22,455 | $ 31,131 | $ 15,771 | $ 19,505 |
| **Additional amounts subject to an enforceable master netting agreement, but not offset on the Consolidated Statement of Financial Condition** | | | | |
| Less: Cash collateral received/paid | (78) | (41) | (14) | (3) |
| Less: Non-cash collateral received/paid | (2,547) | (1,270) | (2,402) | (1,600) |
| **Total net receivables/payables** | $ 19,830 | $ 29,820 | $ 13,355 | $ 17,902 |

(1) The derivatives fair values are also presented in Note 11 to the Consolidated Financial Statements.

(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) At December 31, 2020, reflects the net amount of the $32,444 million and $31,658 million of gross cash collateral paid and received, respectively. Of the gross cash collateral paid, $25,953 million was used to offset trading derivative liabilities and, of the gross cash collateral received, $21,702 million was used to offset trading derivative assets. At December 31, 2019, reflects the net amount of the $22,438 million and $28,297 million of gross cash collateral paid and received, respectively. Of the gross cash collateral paid, $17,846 million was used to offset trading derivative liabilities and, of the gross cash collateral received, $20,597 million was used to offset trading derivative assets.

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

(5) Represents the netting of cash collateral paid and received by counterparty under enforceable credit support agreements.

For the years ended December 31, 2020, 2019 and 2018, 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 to the Consolidated Financial Statements for further information.

**Accounting for Derivative Hedging**

The Company accounts for its hedging activities in accordance with ASC 815, *Derivatives and Hedging*. As a general rule, hedge accounting is permitted where the Company is exposed to a particular risk, such as interest rate or price risk, that causes changes in the fair value of an asset or liability that may affect earnings. Derivative contracts hedging the risks associated with changes in fair value are referred to as fair value hedges.

To qualify as an accounting hedge under the hedge accounting rules, a hedging relationship must be highly effective in offsetting the risk designated as being hedged. The hedging relationship must be formally documented at inception, detailing the particular risk management objective and strategy for the hedge. This includes the item and risk(s) being hedged, the hedging instrument being used and how effectiveness will be assessed. The effectiveness of these hedging relationships is evaluated at hedge inception and on an ongoing basis both on a retrospective and prospective basis, typically using quantitative measures of correlation, with hedge ineffectiveness measured and recorded in current earnings. Hedge effectiveness assessment methodologies are performed in a similar manner for similar hedges, and are used consistently throughout the hedging relationships.

**Fair Value Hedges**

***Hedging of Benchmark Interest Rate Risk***

CGMHI hedges exposure to changes in the fair value of fixed-rate long-term debt. For qualifying fair value hedges of interest rate risk, the changes in the fair value of the derivative and the change in the fair value of the long-term debt are presented within *Interest expense*.

***Hedging of Commodity Price Risk***

The Company hedges the change in fair value attributable to spot price movements in physical commodities inventories. The hedging instrument is a futures contract to sell the underlying commodity. In this hedge, the change in the value of the hedged inventory is reflected in earnings, which offsets the change in the fair value of the futures contract that is also reflected in earnings. Although the change in the fair value of the hedging instrument recorded in earnings includes changes in forward rates, CGMHI excludes the differential between the spot and the contractual forward rates under the futures contract from the assessment of hedge effectiveness, and it is generally reflected directly in earnings over the life of the hedge.

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

| | Gains / (losses) on fair value hedges Year ended December 31, | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | | 2019 | | 2018 | |
| *In millions of dollars* | Other revenue | Interest expense | Other revenue | Interest expense | Other revenue | Interest expense |
| Loss on the hedging derivatives included in assessment of the effectiveness of fair value hedges: | | | | | | |
| Interest rate hedges | $ — | $ (4) | $ — | $ (7) | $ — | $ (4) |
| Commodity hedges | (164) | — | (33) | — | (137) | — |
| Total loss on the hedging derivatives included in assessment of the effectiveness of fair value hedges | (164) | (4) | (33) | (7) | (137) | (4) |
| Gain on the hedged item in designated and qualifying fair value hedges: | | | | | | |
| Interest rate hedges | — | 4 | — | 7 | — | 4 |
| Commodity hedges | 164 | — | 33 | — | 122 | — |
| Total gain on the hedged item in designated and qualifying fair value hedges | 164 | 4 | 33 | 7 | 122 | 4 |
| Net gain on the hedging derivatives excluded from assessment of the effectiveness of fair value hedges: | | | | | | |
| Interest rate hedges | — | — | — | — | — | — |
| Commodity hedges | 131 | — | 41 | — | 5 | — |
| Total net gain on the hedging derivatives excluded from assessment of the effectiveness of fair value hedges | $ 131 | $ — | $ 41 | $ — | $ 5 | $ — |

**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 hedge basis adjustment becomes part of the carrying value of the hedged item until the hedged item is derecognized from the balance sheet. The table below presents the carrying amount of CGMHI's hedged assets and liabilities under qualifying fair value hedges at December 31, 2020 and 2019, along with the cumulative hedge 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 (decreasing) the carrying amount | |
|---|---|---|---|
| | | Active | De-designated |
| As of December 31, 2020 | | | |
| Trading account assets | $ 281 | $ 17 | $ — |
| Long-term debt | 316 | 26 | — |
| As of December 31, 2019 | | | |
| Trading account assets | $ 230 | $ 12 | $ — |
| Long-term debt | 306 | 30 | — |

**Credit Derivatives**

The Company is a market maker and trades a range of credit derivatives. Through these contracts, CGMHI either purchases or writes protection on either a single name or a portfolio of reference credits. CGMHI also uses credit derivatives to help mitigate credit risk in its trading account portfolios and other cash positions and to facilitate client transactions.

CGMHI monitors its counterparty credit risk in credit derivative contracts. As of both December 31, 2020 and 2019, over 99% of the gross receivables are from counterparties with which CGMHI maintains collateral agreements. A majority of CGMHI's top 15 counterparties (by receivable balance owed to CGMHI) are central clearing houses, banks, financial institutions or other dealers. Contracts with these counterparties do not include ratings-based termination events. However, counterparty ratings downgrades may have an incremental effect by lowering the threshold at which CGMHI may call for additional collateral.

The range of credit derivatives entered into includes credit default swaps, total return swaps, credit options and credit-linked notes.

A credit default swap is a contract in which, for a fee, a protection seller agrees to reimburse a protection buyer for any losses that occur due to a predefined credit event on a reference entity. These credit events are defined by the terms of the derivative contract and the reference credit and are generally limited to the market standard of failure to pay on indebtedness and bankruptcy of the reference credit and, in a more limited range of transactions, debt restructuring. Credit derivative transactions that reference emerging market entities also typically include additional credit events to cover the acceleration of indebtedness and the risk of repudiation or a payment moratorium. In certain transactions, protection may be provided on a portfolio of reference entities or asset-backed securities. If there is no credit event, as defined by the specific derivative contract, then the protection seller makes no payments to the protection buyer and receives only the contractually specified fee. However, if a credit event occurs as defined in the specific derivative contract sold, the protection seller will be required to make a payment to the protection buyer. Under certain contracts, the seller of protection may not be required to make a payment until a specified amount of losses has occurred with respect to the portfolio and/or may only be required to pay for losses up to a specified amount.

A total return swap typically transfers the total economic performance of a reference asset, which includes all associated cash flows, as well as capital appreciation or depreciation. The protection buyer receives a floating rate of interest and any depreciation on the reference asset from the protection seller and, in return, the protection seller receives the cash flows associated with the reference asset plus any appreciation. Thus, according to the total return swap agreement, the protection seller will be obligated to make a payment any time the floating interest rate payment plus any depreciation of the reference asset exceeds the cash flows associated with the underlying asset. A total return swap may terminate upon a default of the reference asset or a credit event with respect to the reference entity, subject to the provisions of the related total return swap agreement between the protection seller and the protection buyer.

A credit option is a credit derivative that allows investors to trade or hedge changes in the credit quality of a reference entity. For example, in a credit spread option, the option writer assumes the obligation to purchase or sell credit protection on the reference entity at a specified "strike" spread level. The option purchaser buys the right to sell credit default protection on the reference entity to, or purchase it from, the option writer at the strike spread level. The payments on credit spread options depend either on a particular credit spread or the price of the underlying credit-sensitive asset or other reference entity. The options usually terminate if a credit event occurs with respect to the underlying reference entity.

A credit-linked note is a form of credit derivative structured as a debt security with an embedded credit default swap. The purchaser of the note effectively provides credit protection to the issuer by agreeing to receive a return that could be negatively affected by credit events on the underlying reference credit. If the reference entity defaults, the note may be cash settled or physically settled by delivery of a debt security of the reference entity. Thus, the maximum amount of the note purchaser's exposure is the amount paid for the credit-linked note.

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 December 31, 2020* | **Receivable** | **Payable** | **Protection purchased** | **Protection sold** |
| By industry of counterparty: | | | | |
| Banks | $ 7,584 | $ 7,651 | $ 288,486 | $ 294,674 |
| Broker-dealers | 1,145 | 555 | 22,746 | 19,648 |
| Non-financial | 30 | 87 | 4,068 | 776 |
| Insurance and other financial institutions | 3,956 | 4,784 | 224,391 | 215,371 |
| Total by industry of counterparty | 12,715 | 13,077 | 539,691 | 530,469 |
| By instrument: | | | | |
| Credit default swaps and options | 12,127 | 12,324 | 532,472 | 521,409 |
| Total return swaps and other | 588 | 753 | 7,219 | 9,060 |
| Total by instrument | 12,715 | 13,077 | 539,691 | 530,469 |
| By rating of reference entity: | | | | |
| Investment grade | 5,707 | 5,509 | 415,254 | 406,027 |
| Non-investment grade | 7,008 | 7,568 | 124,437 | 124,442 |
| Total by rating of reference entity | 12,715 | 13,077 | 539,691 | 530,469 |
| By maturity: | | | | |
| Within 1 year | 807 | 1,185 | 99,422 | 102,023 |
| From 1 to 5 years | 9,021 | 9,180 | 387,495 | 383,496 |
| After 5 years | 2,887 | 2,712 | 52,774 | 44,950 |
| Total by maturity | $ 12,715 | $ 13,077 | $ 539,691 | $ 530,469 |

| | Fair values | | Notionals | |
|---|---|---|---|---|
| *In millions of dollars at December 31, 2019* | **Receivable** | **Payable** | **Protection purchased** | **Protection sold** |
| By industry of counterparty: | | | | |
| Banks | $ 18,740 | $ 18,565 | $ 647,813 | $ 643,050 |
| Broker-dealers | 669 | 617 | 25,558 | 22,956 |
| Non-financial | 20 | 42 | 1,796 | 246 |
| Insurance and other financial institutions | 3,035 | 3,366 | 211,011 | 197,381 |
| Total by industry of counterparty | 22,464 | 22,590 | 886,178 | 863,633 |
| By instrument: | | | | |
| Credit default swaps and options | 21,737 | 21,790 | 875,722 | 851,148 |
| Total return swaps and other | 727 | 800 | 10,456 | 12,485 |
| Total by instrument | 22,464 | 22,590 | 886,178 | 863,633 |
| By rating of reference entity: | | | | |
| Investment grade | 12,466 | 12,385 | 715,059 | 691,049 |
| Non-investment grade | 9,998 | 10,205 | 171,119 | 172,584 |
| Total by rating of reference entity | 22,464 | 22,590 | 886,178 | 863,633 |
| By maturity: | | | | |
| Within 1 year | 1,533 | 1,581 | 160,323 | 144,948 |
| From 1 to 5 years | 19,388 | 19,567 | 660,021 | 659,855 |
| After 5 years | 1,543 | 1,442 | 65,834 | 58,830 |
| Total by maturity | $ 22,464 | $ 22,590 | $ 886,178 | $ 863,633 |

Fair values included in the above tables are prior to application of any netting agreements and cash collateral. For notional amounts, CGMHI generally has a mismatch between the total notional amounts of protection purchased and sold, and it may hold the reference assets directly rather than entering into offsetting credit derivative contracts as and when desired.

The open risk exposures from credit derivative contracts are largely matched after certain cash positions in reference assets are considered and after notional amounts are adjusted, either to a duration-based equivalent basis or to reflect the level of subordination in tranched structures. The ratings of the credit derivatives portfolio presented in the tables and used to evaluate payment/performance risk are based on the assigned internal or external ratings of the reference asset or entity. Where external ratings are used, investment-grade ratings are considered to be “Baa/BBB” and above, while anything below is considered non-investment grade. CGMHI’s internal ratings are in line with the related external rating system.

The Company evaluates the payment/performance risk of the credit derivatives for which it stands as a protection seller based on the credit rating assigned to the underlying reference credit. Credit derivatives written on an underlying non-investment grade reference credit represent greater payment risk to the Company. The non-investment grade category in the table above also includes credit derivatives where the underlying reference entity has been downgraded subsequent to the inception of the derivative.

The maximum potential amount of future payments under credit derivative contracts presented in the table above is based on the notional value of the derivatives. The Company believes that the notional amount for credit protection sold is not representative of the actual loss exposure based on historical experience. This amount has not been reduced by the value of the reference assets and the related cash flows. In accordance with most credit derivative contracts, should a credit event occur, the Company usually is liable for the difference between the protection sold and the value of the reference assets. Furthermore, the notional amount for credit protection sold has not been reduced for any cash collateral paid to a given counterparty, as such payments would be calculated after netting all derivative exposures, including any credit derivatives with that counterparty in accordance with a related master netting agreement. Due to such netting processes, determining the amount of collateral that corresponds to credit derivative exposures alone is not possible. The Company actively monitors open credit-risk exposures and manages this exposure by using a variety of strategies, including purchased credit derivatives, cash collateral or direct holdings of the referenced assets. This risk mitigation activity is not captured in the table above.

**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 both December 31, 2020 and 2019 was $8.7 billion and $7.3 billion, respectively. The Company posted $7.3 billion and $4.8 billion as collateral for this exposure in the normal course of business as of December 31, 2020 and 2019, 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 December 31, 2020, the Company could be required to post an additional $337 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 $238 million upon the single notch downgrade, resulting in aggregate cash obligations and collateral requirements of approximately $575 million.

**Derivatives Accompanied by Financial Asset Transfers**

The Company executes total return swaps that provide it with synthetic exposure to substantially all of the economic return of the securities or other financial assets referenced in the contract. In certain cases, the derivative transaction is accompanied by the Company’s transfer of the referenced financial asset to the derivative counterparty, most typically in response to the derivative counterparty’s desire to hedge, in whole or in part, its synthetic exposure under the derivative contract by holding the referenced asset in funded form. In certain jurisdictions these transactions qualify as sales, resulting in derecognition of the securities transferred (see Note 1 to the Consolidated Financial Statements for further discussion of the related sale conditions for transfers of financial assets). For a significant portion of the transactions, the Company has also executed another total return swap where the Company passes on substantially all of the economic return of the referenced securities to a different third party seeking the exposure. In those cases, the Company is not exposed, on a net basis, to changes in the economic return of the referenced securities.

These transactions generally involve the transfer of the Company’s liquid government bonds, convertible bonds or publicly traded corporate equity securities from the trading portfolio and are executed with third-party financial institutions. The accompanying derivatives are typically total return swaps. The derivatives are cash settled and subject to ongoing margin requirements.

When the conditions for sale accounting are met, the Company reports the transfer of the referenced financial asset as a sale and separately reports the accompanying derivative transaction. These transactions generally do not result in a gain or loss on the sale of the security, because the transferred security was held at fair value in the Company's trading portfolio. 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), both the asset amounts derecognized and the gross cash proceeds received as of the date of derecognition were $1.9 billion and $5.8 billion as of December 31, 2020 and 2019, respectively.

At December 31, 2020, the fair value of these previously derecognized assets was $2.0 billion. The fair value of the total return swaps as of December 31, 2020 was $131 million recorded as gross derivative assets and $6 million recorded as gross derivative liabilities. At December 31, 2019, the fair value of these previously derecognized assets was $5.8 billion, and the fair value of the total return swaps was $116 million recorded as gross derivative assets and $42 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.

## 10. CONCENTRATIONS OF CREDIT RISK

Concentrations of credit risk exist when changes in economic, industry or geographic factors similarly affect groups of counterparties whose aggregate credit exposure is material in relation to the Company's total credit exposure. Although the Company's portfolio of financial instruments is broadly diversified along product and geographic lines, material transactions are completed with other financial institutions, particularly in the securities trading, derivatives and foreign exchange businesses.

In connection with the Company's efforts to maintain a diversified portfolio, the Company limits its exposure to any one geographic region, country or individual creditor and monitors this exposure on a continuous basis. At December 31, 2020, the Company's most significant concentration of credit risk was with the U.S. government and its agencies. The Company's exposure, which primarily results from trading assets issued by the U.S. government and its agencies, amounted to $84.9 billion and $45.5 billion at December 31, 2020 and 2019, respectively. With the addition of U.S. government and U.S. government agency securities pledged as collateral by counterparties in connection with collateralized financing activity, the Company's total holdings of U.S. government securities were approximately $273 billion or 34% of the Company's total assets before netting at December 31, 2020, and approximately $200 billion or 33% of the Company's total assets before netting at December 31, 2019. Concentrations with foreign governments totaled approximately $226 billion and $156 billion at December 31, 2020 and 2019, respectively. These consist predominantly of securities issued by the governments of major industrialized nations.

## 11. FAIR VALUE MEASUREMENT

ASC 820-10, *Fair Value Measurement*, defines fair value, establishes a consistent framework for measuring fair value and requires disclosures about fair value measurements. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, and therefore represents an exit price. Among other things, the standard requires the Company to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value.

Under ASC 820-10, the probability of default of a counterparty is factored into the valuation of derivative and other positions as well as the impact of the Company's own credit risk on derivatives and other liabilities measured at fair value.

### 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 active markets.
- 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 frequency of transactions, the size of the bid-ask spread and the amount of adjustment necessary when comparing similar transactions are all factors in determining the relevance of observed prices in those markets.

**Determination of Fair Value**
For assets and liabilities carried at fair value, the Company measures fair value using the procedures set out below, irrespective of whether the assets and liabilities are measured at fair value as a result of an election or whether they are required to be measured at fair value.

When available, the Company uses quoted market prices from active markets to determine fair value and classifies such items as Level 1. In some specific cases where a market price is available, the Company will make use of acceptable practical expedients (such as matrix pricing) to calculate fair value, in which case the items are classified as Level 2.

The Company may also apply a price-based methodology, which utilizes, where available, quoted prices or other market information obtained from recent trading activity in positions with the same or similar characteristics to the position being valued. The frequency and size of transactions are among the factors that are driven by the liquidity of markets and determine the relevance of observed prices in those markets. If relevant and observable prices are available, those valuations may be classified as Level 2. When that is not the case, and there are one or more significant unobservable “price” inputs, then those valuations will be classified as Level 3. Furthermore, when a quoted price is stale, a significant adjustment to the price of a similar security is necessary to reflect differences in the terms of the actual security or loan being valued, or prices from independent sources are insufficient to corroborate the valuation, the “price” inputs are considered unobservable and the fair value measurements are classified as Level 3.

If quoted market prices are not available, fair value is based upon internally developed valuation techniques that use, where possible, current market-based parameters, such as interest rates, currency rates and option volatilities. Items valued using such internally generated valuation techniques are classified according to the lowest level input or value driver that is significant to the valuation. Thus, an item may be classified as Level 3 even though there may be some significant inputs that are readily observable.

Fair value estimates from internal valuation techniques are verified, where possible, to prices obtained from independent vendors or brokers. Vendors’ and brokers’ valuations may be based on a variety of inputs ranging from observed prices to proprietary valuation models, and the Company assesses the quality and relevance of this information in determining the estimate of fair value. The following section describes the valuation methodologies used by the Company to measure various financial instruments at fair value, including an indication of the level in the fair value hierarchy in which each instrument is generally classified. Where appropriate, the description includes details of the valuation models, the key inputs to those models and any significant assumptions.

***Market Valuation Adjustments***
Generally, the unit of account for a financial instrument is the individual financial instrument. The Company applies market valuation adjustments that are consistent with the unit of account, which does not include adjustment due to the size of the Company’s position, except as follows. ASC 820-10 permits an exception, through an accounting policy election, to measure the fair value of a portfolio of financial assets and financial liabilities on the basis of the net open risk position when certain criteria are met. CGMHI has elected to measure certain portfolios of financial instruments that meet those criteria, such as derivatives, on the basis of the net open risk position. The Company applies market valuation adjustments, including adjustments to account for the size of the net open risk position, consistent with market participant assumptions.

Valuation adjustments are applied to items classified as Level 2 or Level 3 in the fair value hierarchy to ensure that the fair value reflects the price at which the net open risk position could be exited. These valuation adjustments are based on the bid/offer spread for an instrument in the market. When CGMHI has elected to measure certain portfolios of financial investments, such as derivatives, on the basis of the net open risk position, the valuation adjustment may take into account the size of the position.

Credit valuation adjustments (CVA) and funding valuation adjustments (FVA) are applied to the relevant population of over-the-counter (OTC) derivative instruments where adjustments to reflect counterparty credit risk, own credit risk and term funding risk are required to estimate fair value. This principally includes derivatives with a base valuation (e.g., discounted using overnight indexed swap (OIS)) requiring adjustment for these effects, such as uncollateralized interest rate swaps. The CVA represents a portfolio-level adjustment to reflect the risk premium associated with the counterparty's (assets) or CGMHI's (liabilities) non-performance risk.

The FVA represents a market funding risk premium inherent in the uncollateralized portion of a derivative portfolio and in certain collateralized derivative portfolios that do not include standard credit support annexes (CSAs), such as where the CSA does not permit the reuse of collateral received. CGMHI's FVA methodology leverages the existing CVA methodology to estimate a funding exposure profile. The calculation of this exposure profile considers collateral agreements in which the terms do not permit the Company to reuse the collateral received, including where counterparties post collateral to third-party custodians.

CGMHI's CVA and FVA methodology consists of two steps:

- First, the exposure profile for each counterparty is determined using the terms of all individual derivative positions and a Monte Carlo simulation or other quantitative analysis to generate a series of expected cash flows at future points in time. The calculation of this exposure profile considers the effect of credit risk mitigants and sources of funding, including pledged cash or other collateral and any legal right of offset that exists with a counterparty through arrangements such as netting agreements. Individual derivative contracts that are subject to an enforceable master netting agreement with a counterparty are aggregated as a netting set for this purpose, since it is those aggregate net cash flows that are subject to nonperformance risk. This process identifies specific, point-in-time future cash flows that are subject to nonperformance risk and unsecured funding, rather than using the current recognized net asset or liability as a basis to measure the CVA and FVA.
- Second, for CVA, market-based views of default probabilities derived from observed credit spreads in the credit default swap (CDS) market are applied to the expected future cash flows determined in step one. CGMHI's own-credit CVA is determined using Citi-specific CDS spreads for the relevant tenor. Generally, counterparty CVA is determined using CDS spread indices for each credit rating and tenor. For certain identified netting sets where individual analysis is practicable (e.g., exposures to counterparties with liquid CDSs), counterparty-specific CDS spreads are used. For FVA, a term structure of future liquidity spreads is applied to the expected future funding requirement.

The CVA and FVA are designed to incorporate a market view of the credit and funding risk, respectively, inherent in the derivative portfolio. However, most unsecured derivative instruments are negotiated bilateral contracts and are not commonly transferred to third parties. Derivative instruments are normally settled contractually or, if terminated early, are terminated at a value negotiated bilaterally between the counterparties. Thus, the CVA and FVA may not be realized upon a settlement or termination in the normal course of business. In addition, all or a portion of these adjustments may be reversed or otherwise adjusted in future periods in the event of changes in the credit or funding risk associated with the derivative instruments.

The table below summarizes the CVA and FVA applied to the fair value of derivative instruments at December 31, 2020 and 2019:

| | Credit and funding valuation adjustments contra-liability (contra-asset) | |
|---|---|---|
| *In millions of dollars* | December 31, 2020 | December 31, 2019 |
| Counterparty CVA | $ (134) | $ (128) |
| Asset FVA | (54) | (51) |
| CGMHI (own-credit) CVA [1] | 150 | 136 |
| Liability FVA | 12 | 15 |
| Total CVA—derivative instruments [2] | $ (26) | $ (28) |

(1) Determined using Citi-specific CDS spreads.
(2) FVA is included with CVA for presentation purposes.

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) | | |
|---|---|---|---|
| *In millions of dollars* | 2020 | 2019 | 2018 |
| Counterparty CVA | $ — | $ 10 | $ (17) |
| Asset FVA | (2) | 2 | (18) |
| Own-credit CVA [(1)] | (7) | (63) | 82 |
| Liability FVA | (3) | (11) | 14 |
| Total CVA—derivative instruments | (12) | (62) | 61 |
| DVA related to own FVO liabilities | (446) | (819) | 630 |
| Total CVA and DVA [(2)] | $ (458) | $ (881) | $ 691 |

(1) Determined using Citi-specific CDS spreads.
(2) FVA is included with CVA for presentation purposes.

***Securities Borrowed and Purchased Under Agreements to Resell and Securities Loaned and Sold Under Agreements to Repurchase***

No quoted prices exist for these instruments, so fair value is determined using a discounted cash flow technique. Cash flows are estimated based on the terms of the contract, taking into account any embedded derivative or other features. These cash flows are discounted using interest rates appropriate to the maturity of the instrument as well as the nature of the underlying collateral. Generally, when such instruments are recorded at fair value, they are classified within Level 2 of the fair value hierarchy, as the inputs used in the valuation are readily observable. However, certain long-dated positions are classified within Level 3 of the fair value hierarchy.

***Trading Account Assets and Liabilities—Trading Securities and Trading Loans***

When available, the Company uses quoted market prices in active markets to determine the fair value of trading securities; such items are classified as Level 1 of the fair value hierarchy. Examples include government securities and exchange-traded equity securities.

For bonds and secondary market loans traded over the counter, the Company generally determines fair value utilizing valuation techniques, including discounted cash flows, price-based and internal models. Fair value estimates from these internal valuation techniques are verified, where possible, to prices obtained from independent sources, including third-party vendors. Vendors compile prices from various sources and may apply matrix pricing for similar bonds or loans where no price is observable. A price-based methodology utilizes, where available, quoted prices or other market information obtained from recent trading activity of assets with similar characteristics to the bond or loan being valued. The yields used in discounted cash flow models are derived from the same price information. Trading securities and loans priced using such methods are generally classified as Level 2. However, when a quoted price is stale, a significant adjustment to the price of a similar security or loan is necessary to reflect differences in the terms of the actual security or loan being valued, or prices from independent sources are insufficient to corroborate valuation, a loan or security is generally classified as Level 3. The price input used in a price-based methodology may be zero for a security, such as a subprime collateralized debt obligation (CDO), that is not receiving any principal or interest and is not expected to receive any in the future.

When the Company's principal exit market for a portfolio of loans is through securitization, the Company uses the securitization price as a key input into the fair value of the loan portfolio. The securitization price is determined from the assumed proceeds of a hypothetical securitization within the current market environment, with adjustments made to account for various costs associated with the process of securitization. Where such a price verification is possible, loan portfolios are typically classified as Level 2 in the fair value hierarchy.

For most of the subprime mortgage backed security (MBS) exposures, fair value is determined utilizing observable transactions where available, or other valuation techniques such as discounted cash flow analysis utilizing valuation assumptions derived from similar, more observable securities as market proxies. The valuation of certain asset-backed security (ABS) CDO positions are inferred through the net asset value of the underlying assets of the ABS CDO.

***Trading Account Assets and Liabilities—Derivatives***
Exchange-traded derivatives, measured at fair value using quoted (i.e., exchange) prices in active markets, where available, are classified as Level 1 of the fair value hierarchy.

Derivatives without a quoted price in an active market and derivatives executed over the counter are valued using internal valuation techniques. These derivative instruments are classified as either Level 2 or Level 3 depending on the observability of the significant inputs to the model.

The valuation techniques depend on the type of derivative and the nature of the underlying instrument. The principal techniques used to value these instruments are discounted cash flows and internal models, such as derivative pricing models (e.g., Black-Scholes and Monte Carlo simulations).

The key inputs depend upon the type of derivative and the nature of the underlying instrument and include interest rate yield curves, foreign exchange rates, volatilities and correlation. The Company typically uses OIS curves as fair value measurement inputs for the valuation of certain derivatives.

***Investments***
The investments category includes nonpublic investments in private equity and real estate entities. Determining the fair value of nonpublic securities involves a significant degree of management judgment, as no quoted prices exist and such securities do not generally trade. In addition, there may be transfer restrictions on private equity securities. The Company's process for determining the fair value of such securities utilizes commonly accepted valuation techniques, including guideline public company analysis and comparable transactions. In determining the fair value of nonpublic securities, the Company also considers events such as a proposed sale of the investee company, initial public offerings, equity issuances or other observable transactions. Private equity securities are generally classified as Level 3 of the fair value hierarchy.

***Short-Term Borrowings and Long-Term Debt***
Where fair value accounting has been elected, the fair value of non-structured liabilities is determined by utilizing internal models using the appropriate discount rate for the applicable maturity. Such instruments are generally classified as Level 2 of the fair value hierarchy when all significant inputs are readily observable.

The Company determines the fair value of hybrid financial instruments, including structured liabilities, using the appropriate derivative valuation methodology (described above in "Trading Account Assets and Liabilities—Derivatives") given the nature of the embedded risk profile. Such instruments are classified as Level 2 or Level 3 depending on the observability of significant inputs to the model.

**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 December 31, 2020 and December 31, 2019. 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 of the fair value hierarchy. The effects of these hedges are presented gross in the following tables.

**Fair Value Levels**

| *In millions of dollars at December 31, 2020* | **Level 1** | **Level 2** | **Level 3** | **Gross inventory** | **Netting [1]** | **Net balance** |
|---|---|---|---|---|---|---|
| **Assets** | | | | | | |
| **Securities borrowed and purchased under agreements to resell** | $ — | $ 333,577 | $ 93 | $ 333,670 | $ (149,747) | $ 183,923 |
| **Trading non-derivative assets** | | | | | | |
| Trading mortgage-backed securities | | | | | | |
| U.S. government-sponsored agency guaranteed | — | 42,827 | 27 | 42,854 | — | 42,854 |
| Residential | 2 | 391 | 338 | 731 | — | 731 |
| Commercial | — | 894 | 136 | 1,030 | — | 1,030 |
| Total trading mortgage-backed securities | 2 | 44,112 | 501 | 44,615 | — | 44,615 |
| U.S. Treasury and federal agency securities | 40,435 | 1,626 | — | 42,061 | — | 42,061 |
| State and municipal securities | — | 631 | 36 | 667 | — | 667 |
| Foreign government securities | 41,200 | 3,652 | 34 | 44,886 | — | 44,886 |
| Corporate | 1,314 | 18,199 | 393 | 19,906 | — | 19,906 |
| Equity securities | 50,284 | 2,164 | 40 | 52,488 | — | 52,488 |
| Asset-backed securities | — | 608 | 1,594 | 2,202 | — | 2,202 |
| Other trading assets | 1 | 2,181 | 218 | 2,400 | — | 2,400 |
| **Total trading non-derivative assets** | 133,236 | 73,173 | 2,816 | 209,225 | — | 209,225 |
| **Trading derivatives** | | | | | | |
| Interest rate contracts | 15 | 228,718 | 1,166 | 229,899 | | |
| Foreign exchange contracts | 2 | 26,147 | 296 | 26,445 | | |
| Equity contracts | 64 | 33,155 | 622 | 33,841 | | |
| Commodity contracts | — | 9,527 | 847 | 10,374 | | |
| Credit derivatives | — | 11,857 | 858 | 12,715 | | |
| **Total trading derivatives** | 81 | 309,404 | 3,789 | 313,274 | | |
| Cash collateral paid [2] | | | | 6,491 | | |
| Netting agreements | | | | | (275,608) | |
| Netting of cash collateral received | | | | | (21,702) | |
| **Total trading derivatives** | 81 | 309,404 | 3,789 | 319,765 | (297,310) | 22,455 |
| Securities received as collateral | 6,309 | 49 | — | 6,358 | — | 6,358 |
| Investments - Non-marketable equity securities | — | 139 | 206 | 345 | — | 345 |
| Other financial assets measured on a recurring basis | — | 2,526 | 16 | 2,542 | — | 2,542 |
| **Total assets** | $ 139,626 | $ 718,868 | $ 6,920 | $ 871,905 | $ (447,057) | $ 424,848 |
| Total as a percentage of gross assets [3] | 16.1% | 83.1% | 0.8% | | | |

See footnotes on the next page.

**Fair Value Levels**

| *In millions of dollars at December 31, 2020* | Level 1 | Level 2 | Level 3 | Gross inventory | Netting (1) | Net balance |
|---|---|---|---|---|---|---|
| **Liabilities** | | | | | | |
| **Securities loaned and sold under agreements to repurchase** | $ — | $ 156,203 | $ 631 | $ 156,834 | $ (96,628) | $ 60,206 |
| **Trading account liabilities** | | | | | | |
| **Securities sold, not yet purchased** | 76,771 | 13,753 | 36 | 90,560 | — | 90,560 |
| **Trading derivatives** | | | | | | |
| Interest rate contracts | 13 | 227,755 | 1,208 | 228,976 | | |
| Foreign exchange contracts | 2 | 26,559 | 498 | 27,059 | | |
| Equity contracts | 45 | 38,561 | 956 | 39,562 | | |
| Commodity contracts | — | 13,408 | 654 | 14,062 | | |
| Credit derivatives | — | 12,232 | 845 | 13,077 | | |
| **Total trading derivatives** | 60 | 318,515 | 4,161 | 322,736 | | |
| Cash collateral received (4) | | | | 9,956 | | |
| Netting agreements | | | | | (275,608) | |
| Netting of cash collateral paid | | | | | (25,953) | |
| **Total trading derivatives** | 60 | 318,515 | 4,161 | 332,692 | (301,561) | 31,131 |
| Obligations to return securities received as collateral | 6,766 | 49 | — | 6,815 | — | 6,815 |
| Short-term borrowings | — | 3,878 | 208 | 4,086 | — | 4,086 |
| Long-term debt | — | 35,070 | 11,957 | 47,027 | — | 47,027 |
| **Total liabilities** | $ 83,597 | $ 527,468 | $ 16,993 | $ 638,014 | $ (398,189) | $ 239,825 |
| Total as a percentage of gross liabilities (3) | 13.3% | 84.0% | 2.7% | | | |

(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) Reflects the net amount of $32,444 million of gross cash collateral paid, of which $25,953 million was used to offset trading derivative liabilities.

(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.

(4) Reflects the net amount of $31,658 million of gross cash collateral received, of which $21,702 million was used to offset trading derivative assets.

**Fair Value Levels**

| *In millions of dollars at December 31, 2019* | Level 1 | Level 2 | Level 3 | Gross inventory | Netting [(1)] | Net balance |
|---|---|---|---|---|---|---|
| **Assets** | | | | | | |
| **Securities borrowed and purchased under agreements to resell** | $ — | $ 252,465 | $ 117 | $ 252,582 | $ (101,362) | $ 151,220 |
| **Trading non-derivative assets** | | | | | | |
| Trading mortgage-backed securities | | | | | | |
| U.S. government-sponsored agency guaranteed | — | 27,589 | 9 | 27,598 | — | 27,598 |
| Residential | 1 | 573 | 122 | 696 | — | 696 |
| Commercial | — | 1,632 | 61 | 1,693 | — | 1,693 |
| Total trading mortgage-backed securities | 1 | 29,794 | 192 | 29,987 | — | 29,987 |
| U.S. Treasury and federal agency securities | 14,660 | 3,273 | — | 17,933 | — | 17,933 |
| State and municipal securities | — | 1,975 | 4 | 1,979 | — | 1,979 |
| Foreign government securities | 30,795 | 4,227 | 4 | 35,026 | — | 35,026 |
| Corporate | 611 | 16,273 | 268 | 17,152 | — | 17,152 |
| Equity securities | 33,975 | 1,271 | 69 | 35,315 | — | 35,315 |
| Asset-backed securities | 5 | 1,464 | 1,163 | 2,632 | — | 2,632 |
| Other trading assets | 1 | 2,168 | 9 | 2,178 | — | 2,178 |
| **Total trading non-derivative assets** | 80,048 | 60,445 | 1,709 | 142,202 | — | 142,202 |
| **Trading derivatives** | | | | | | |
| Interest rate contracts | 6 | 172,298 | 335 | 172,639 | | |
| Foreign exchange contracts | — | 20,158 | 132 | 20,290 | | |
| Equity contracts | 80 | 25,206 | 350 | 25,636 | | |
| Commodity contracts | — | 10,056 | 791 | 10,847 | | |
| Credit derivatives | — | 22,178 | 286 | 22,464 | | |
| **Total trading derivatives** | 86 | 249,896 | 1,894 | 251,876 | | |
| Cash collateral paid [(2)] | | | | 4,592 | | |
| Netting agreements | | | | | (220,100) | |
| Netting of cash collateral received | | | | | (20,597) | |
| **Total trading derivatives** | 86 | 249,896 | 1,894 | 256,468 | (240,697) | 15,771 |
| Securities received as collateral | 5,764 | 108 | — | 5,872 | — | 5,872 |
| Investments - Non-marketable equity securities | — | 293 | 217 | 510 | — | 510 |
| Other financial assets measured on a recurring basis | — | 2,243 | 3 | 2,246 | — | 2,246 |
| **Total assets** | $ 85,898 | $ 565,450 | $ 3,940 | $ 659,880 | $ (342,059) | $ 317,821 |
| Total as a percentage of gross assets [(3)] | 13.1% | 86.3% | 0.6% | | | |

See footnotes on the next page.

**Fair Value Levels**

| *In millions of dollars at December 31, 2019* | Level 1 | Level 2 | Level 3 | Gross inventory | Netting [1] | Net balance |
|---|---|---|---|---|---|---|
| **Liabilities** | | | | | | |
| **Securities loaned and sold under agreements to repurchase** | $ — | $ 111,415 | $ 757 | $ 112,172 | $ (71,673) | $ 40,499 |
| **Trading account liabilities** | | | | | | |
| **Securities sold, not yet purchased** | 55,592 | 10,073 | 39 | 65,704 | — | 65,704 |
| **Trading derivatives** | | | | | | |
| Interest rate contracts | 8 | 167,350 | 480 | 167,838 | | |
| Foreign exchange contracts | 2 | 20,082 | 135 | 20,219 | | |
| Equity contracts | 4 | 25,408 | 497 | 25,909 | | |
| Commodity contracts | — | 12,478 | 717 | 13,195 | | |
| Credit derivatives | — | 22,323 | 267 | 22,590 | | |
| **Total trading derivatives** | 14 | 247,641 | 2,096 | 249,751 | | |
| Cash collateral received [4] | | | | 7,700 | | |
| Netting agreements | | | | | (220,100) | |
| Netting of cash collateral paid | | | | | (17,846) | |
| **Total trading derivatives** | 14 | 247,641 | 2,096 | 257,451 | (237,946) | 19,505 |
| Obligations to return securities received as collateral | 6,226 | 108 | — | 6,334 | — | 6,334 |
| Short-term borrowings | — | 3,985 | 13 | 3,998 | — | 3,998 |
| Long-term debt | — | 31,611 | 7,318 | 38,929 | — | 38,929 |
| **Total liabilities** | $ 61,832 | $ 404,833 | $ 10,223 | $ 484,588 | $ (309,619) | $ 174,969 |
| Total as a percentage of gross liabilities [3] | 13.0% | 84.9% | 2.1% | | | |

(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) Reflects the net amount of $22,438 million of gross cash collateral paid, of which $17,846 million was used to offset trading derivative liabilities.
(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.
(4) Reflects the net amount of $28,297 million of gross cash collateral received, of which $20,597 million was used to offset trading derivative assets.

**Changes in Level 3 Fair Value Category**

The following tables present the changes in the Level 3 fair value category for the years ended December 31, 2020 and 2019. 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, 2019 | Net realized/unrealized gains (losses) incl. in (1) Principal transactions | Other | Transfers into Level 3 | Transfers out of Level 3 | Purchases | Issuances | Sales | Settlements | Dec. 31, 2020 | Unrealized gains (losses) still held (2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Assets** | | | | | | | | | | | |
| Securities borrowed and purchased under agreements to resell | $ 117 | $ (17) | $ — | $ — | $ — | $ 194 | $ — | $ — | $ (201) | $ 93 | $ 5 |
| **Trading non-derivative assets** | | | | | | | | | | | |
| Trading mortgage-backed securities | | | | | | | | | | | |
| U.S. government-sponsored agency guaranteed | 9 | (80) | — | 21 | (11) | 393 | — | (306) | 1 | 27 | (1) |
| Residential | 122 | 75 | — | 234 | (67) | 486 | — | (512) | — | 338 | (11) |
| Commercial | 61 | — | — | 161 | (35) | 174 | — | (225) | — | 136 | (14) |
| Total trading mortgage-backed securities | 192 | (5) | — | 416 | (113) | 1,053 | — | (1,043) | 1 | 501 | (26) |
| U.S. Treasury and federal agency securities | — | — | — | — | — | — | — | — | — | — | — |
| State and municipal | 4 | 4 | — | 32 | (4) | 62 | — | (62) | — | 36 | 4 |
| Foreign government | 4 | (5) | — | 9 | (2) | 95 | — | (67) | — | 34 | (6) |
| Corporate debt | 268 | 196 | — | 211 | (67) | 679 | — | (888) | (6) | 393 | (4) |
| Equity securities | 69 | (20) | — | 43 | (3) | 240 | — | (289) | — | 40 | (15) |
| Asset-backed securities | 1,163 | (106) | — | 677 | (130) | 1,407 | — | (1,417) | — | 1,594 | (248) |
| Other trading assets | 9 | 280 | — | 180 | (163) | 128 | — | (216) | — | 218 | (50) |
| **Total trading non-derivative assets** | 1,709 | 344 | — | 1,568 | (482) | 3,664 | — | (3,982) | (5) | 2,816 | (345) |
| Investments in non-marketable equity securities | 217 | — | 39 | — | (2) | — | — | (3) | (45) | 206 | 8 |
| Other financial assets measured on a recurring basis | 3 | — | 11 | 5 | (6) | 3 | — | — | — | 16 | 12 |
| **Liabilities** | | | | | | | | | | | |
| Securities loaned and sold under agreements to repurchase | $ 757 | $ 5 | $ — | $ — | $ — | $ — | $ — | $ — | $ (121) | $ 631 | $ (18) |
| **Trading account liabilities** | | | | | | | | | | | |
| Securities sold, not yet purchased | 39 | (153) | — | 36 | (3) | — | — | 1 | (190) | 36 | (107) |
| **Derivatives, net** (3) | | | | | | | | | | | |
| Interest rate contracts | 145 | 120 | — | (1) | (472) | (11) | — | 1 | 500 | 42 | 231 |
| Foreign exchange contracts | 3 | (203) | — | 6 | 21 | — | — | — | (31) | 202 | (169) |
| Equity contracts | 147 | (180) | — | 119 | (216) | (35) | — | 23 | 116 | 334 | (155) |
| Commodity contracts | (74) | (88) | — | 89 | 33 | (98) | — | 61 | (292) | (193) | 325 |
| Credit derivatives | (19) | 98 | — | 22 | 3 | — | — | — | 79 | (13) | 59 |
| **Total derivatives, net** (3) | 202 | (253) | — | 235 | (631) | (144) | — | 85 | 372 | 372 | 291 |
| Short-term borrowings | 13 | 78 | — | 209 | (6) | — | 86 | — | (16) | 208 | 13 |
| Long-term debt | 7,318 | (569) | — | 4,810 | (2,216) | — | 5,690 | — | (4,214) | 11,957 | (964) |

(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 December 31, 2020.
(3) Total Level 3 trading derivative assets and liabilities have been netted in these tables for presentation purposes only.

## Level 3 Fair Value Rollforward

| | | Net realized/unrealized gains (losses) incl. in[1] | | Transfers | | | | | | | Unrealized gains |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *In millions of dollars* | Dec. 31, 2018 | Principal transactions | Other | into Level 3 | out of Level 3 | Purchases | Issuances | Sales | Settlements | Dec. 31, 2019 | (losses) still held[2] |
| **Assets** | | | | | | | | | | | |
| Securities borrowed and purchased under agreements to resell | $ 115 | $ (1) | $ — | $ 3 | $ — | $ 195 | $ — | $ — | $ (195) | $ 117 | $ 4 |
| **Trading non-derivative assets** | | | | | | | | | | | |
| Trading mortgage-backed securities | | | | | | | | | | | |
| U.S. government-sponsored agency guaranteed | 156 | — | — | 53 | (72) | 168 | — | (295) | (1) | 9 | 1 |
| Residential | 268 | 18 | — | 84 | (73) | 213 | — | (388) | — | 122 | 15 |
| Commercial | 77 | 13 | — | 149 | (109) | 137 | — | (206) | — | 61 | (4) |
| Total trading mortgage-backed securities | 501 | 31 | — | 286 | (254) | 518 | — | (889) | (1) | 192 | 12 |
| U.S. Treasury and federal agency securities | — | (10) | — | — | — | 21 | — | (11) | — | — | — |
| State and municipal | 26 | (1) | — | 1 | (20) | 1 | — | (3) | — | 4 | (2) |
| Foreign government | 31 | 1 | — | — | (8) | 12 | — | (32) | — | 4 | — |
| Corporate debt | 417 | 378 | — | 67 | (211) | 325 | — | (698) | (10) | 268 | 181 |
| Equity securities | 133 | (9) | — | 15 | (20) | 61 | — | (111) | — | 69 | (47) |
| Asset-backed securities | 1,479 | (66) | — | 48 | (122) | 732 | — | (908) | — | 1,163 | 29 |
| Other trading assets | 2 | (8) | — | 2 | (110) | 124 | — | (1) | — | 9 | (1) |
| **Total trading non-derivative assets** | 2,589 | 316 | — | 419 | (745) | 1,794 | — | (2,653) | (11) | 1,709 | 172 |
| Investments in non-marketable equity securities | 141 | — | 37 | 30 | (1) | 11 | — | (1) | — | 217 | 25 |
| Other financial assets measured on a recurring basis | 5 | — | — | 3 | (5) | — | — | — | — | 3 | 3 |
| **Liabilities** | | | | | | | | | | | |
| Securities loaned and sold under agreements to repurchase | $ 983 | $ 60 | $ — | $ 3 | $ — | $ — | $ — | $ (169) | $ — | $ 757 | $ (26) |
| **Trading account liabilities** | | | | | | | | | | | |
| Securities sold, not yet purchased | 174 | (11) | — | 37 | (180) | 18 | — | (2) | (19) | 39 | 3 |
| **Derivatives, net**[2] | | | | | | | | | | | |
| Interest rate contracts | 97 | 27 | — | (53) | 50 | (15) | — | — | 93 | 145 | 34 |
| Foreign exchange contracts | 77 | 32 | — | (4) | 24 | — | — | — | (62) | 3 | (12) |
| Equity contracts | 256 | 23 | — | 155 | (152) | (23) | 15 | 18 | (99) | 147 | (235) |
| Commodity contracts | (258) | (503) | — | 36 | (8) | (282) | — | 133 | (198) | (74) | (152) |
| Credit derivatives | (3) | (104) | — | 76 | 53 | — | — | (14) | (235) | (19) | (6) |
| **Total derivatives, net**[2] | 169 | (525) | — | 210 | (33) | (320) | 15 | 137 | (501) | 202 | (371) |
| Short-term borrowings | 37 | 33 | — | 14 | (42) | — | 168 | — | (131) | 13 | (1) |
| Long-term debt | 4,302 | (407) | — | 2,564 | (2,467) | — | 4,718 | — | (2,206) | 7,318 | (2,482) |

(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 December 31, 2019.
(3) Total Level 3 trading derivative assets and liabilities have been netted in these tables for presentation purposes only.

**Level 3 Fair Value Rollforward**

The following were the significant Level 3 transfers for the period December 31, 2019 to December 31, 2020:

- During the 12 months ended December 31, 2020, $4.8 billion of *Long-term debt* containing embedded derivatives was transferred from Level 2 to Level 3, as a result of interest rate option volatility, equity correlation and credit derivative inputs becoming unobservable and/or significant input relative to the overall valuation of certain structured long-term debt products. In other instances, market changes resulted in unobservable volatility inputs becoming insignificant to the overall valuation of the instrument (e.g., when an option becomes deep-in or deep-out of the money). This has resulted in $2.2 billion of certain structured long-term debt products being transferred from Level 3 to Level 2 during the 12 months ended December 31, 2020.

The following were the significant Level 3 transfers for the period December 31, 2018 to December 31, 2019:

- Transfers of *Long-Term Debt* of $2.6 billion from Level 2 to Level 3, and of $2.5 billion from Level 3 to Level 2, mainly related to structured debt, reflecting changes in the significance of unobservable inputs as well as certain underlying market inputs becoming less or more observable.

**Valuation Techniques and Inputs for Level 3 Fair Value Measurements**

The Company's Level 3 inventory consists of both cash instruments and derivatives of varying complexity. The valuation methodologies used to measure the fair value of these positions include discounted cash flow analysis, internal models and comparative analysis. A position is classified within Level 3 of the fair value hierarchy when one or more unobservable inputs are used that are considered significant to its valuation. The specific reason an input is deemed unobservable varies; for example, at least one significant input to the pricing model is not observable in the market, at least one significant input has been adjusted to make it more representative of the position being valued or the price quote available does not reflect sufficient trading activities.

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 represent individually immaterial items that have been measured using a variety of valuation techniques other than those listed.

| *As of December 31, 2020* | **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 | $ 93 | Model-based | Interest rate | 0.30 % | 0.35 % | 0.32 % |
| Mortgage-backed securities | $ 334 | Price-based | Price | $ 24 | $ 108 | $ 78 |
| | 167 | Yield analysis | Yield | 2.63 % | 21.80 % | 10.16 % |
| State and municipal, foreign government, corporate and other debt securities | $ 562 | Price-based | Price | $ — | $ 2,265 | $ 106 |
| Equity securities [5] | $ 36 | Price-based | Price | $ — | $ 31,000 | $ 5,132 |
| Asset-backed securities | $ 861 | Price-based | Price | $ 2 | $ 157 | $ 59 |
| | 733 | Yield analysis | Yield | 3.77 % | 21.77 % | 9.06 % |
| Non-marketable equity | $ 120 | Price-based | Price | $ 136 | $ 2,041 | $ 1,856 |
| | | | EBITDA multiples | 6.50x | 36.70x | 22.41x |
| | | | Appraised value | $ 35,886 | $39,744,558 | $24,495,140 |
| | | | Revenue multiple | 6.40x | 28.00x | 10.05x |
| | 86 | Comparables analysis | Illiquidity discount | 20.00 % | 40.00 % | 34.32 % |
| | | | PE ratio | 20.60x | 20.60x | 20.60x |
| Derivatives – Gross [6] | | | | | | |
| Interest rate contracts (gross) | $ 2,322 | Model-based | IR normal volatility | 0.11 % | 0.52 % | 0.46 % |
| | | | Inflation volatility | 0.27 % | 2.36 % | 0.75 % |
| Foreign exchange contracts (gross) | $ 794 | Model-based | FX volatility | 1.70 % | 12.63 % | 7.08 % |
| | | | IR normal volatility | 0.11 % | 0.52 % | 0.45 % |
| | | | IR-FX correlation | (31.90)% | 73.77 % | 48.19 % |
| | | | IR-IR correlation | (10.00)% | 56.13 % | 39.25 % |

| *As of December 31, 2020* | **Fair Value** [1] *(in millions)* | **Methodology** | **Input** | **Low** [2] [3] | **High** [2] [3] | **Weighted Average** [4] |
|---|---|---|---|---|---|---|
| Equity contracts (gross) [7] | $ 1,515 | Model-based | Forward price | 65.88 % | 105.20 % | 89.60 % |
| | | | Equity volatility | 5.00 % | 91.43 % | 24.71 % |
| | | | Equity-FX correlation | (84.83)% | 47.31 % | (30.44)% |
| | | | Equity-Equity correlation | (75.00)% | 98.77 % | 75.24 % |
| Commodity contracts (gross) | $ 1,447 | Model-based | Commodity correlation | (44.92)% | 95.91 % | 70.60 % |
| | | | Commodity volatility | 0.16 % | 80.17 % | 23.72 % |
| | | | Forward price | 15.40 % | 262.00 % | 99.43 % |
| Credit derivatives (gross) | $ 1,452 | Model-based | Credit spread | 6.25 bps | 385.00 bps | 104.17 bps |
| | 251 | Price-based | | | | |
| Other financial assets measured on a recurring basis | $ 14 | Model-based | Forward price | 59.40 % | 106.13 % | 92.56 % |
| | 2 | Price-based | Commodity correlation | (44.92)% | 95.91 % | 70.60 % |
| | | | Commodity volatility | 0.16 % | 80.17 % | 23.72 % |
| **Liabilities** | | | | | | |
| Securities loaned and sold under agreements to repurchase | $ 631 | Model-based | Interest rate | 0.08 % | 1.86 % | 0.71 % |
| Trading account liabilities | | | | | | |
| Securities sold, not yet purchased | $ 36 | Price-based | Price | $ — | $ 866 | $ 66 |
| Short-term borrowings and long-term debt | $11,541 | Model-based | Forward price | 15.40 % | 262.00 % | 92.43 % |
| | | | IR normal volatility | 0.11 % | 0.73 % | 0.47 % |
| | | | Equity volatility | 5.00 % | 91.43 % | 18.93 % |
| | | | Credit spread | 144.68 bps | 1,782.30 bps | 714.19 bps |
| | | | IR-IR correlation | 40.00 % | 40.00 % | 40.00 % |

| *As of December 31, 2019* | **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 | $ 117 | Model-based | Interest rate | 1.59 % | 3.67 % | 2.72 % |
| Mortgage-backed securities | $ 183 | Price-based | Price | $ 36 | $ 524 | $ 104 |
| State and municipal, foreign government, corporate and other debt securities | $ 199 | Price-based | Price | $ — | $ 1,238 | $ 105 |
| | 85 | Model-based | | | | |
| Equity securities [5] | $ 66 | Price-based | Price | $ — | $ 38,500 | $ 3,169 |
| Asset-backed securities | $ 809 | Price-based | Price | $ 4 | $ 103 | $ 60 |
| | 354 | Yield analysis | Yield | 0.61 % | 23.38 % | 9.06 % |
| Non-marketable equity | $ 136 | Comparables analysis | Price | $ 3 | $ 2,019 | $ 1,020 |
| | 53 | Price-based | Appraised value | $317,192 | $33,245,976 | $11,161,570 |
| | 28 | Model-based | PE ratio | 20.00x | 20.00x | 20.00x |
| | | | Price to book ratio | 1.50x | 3.00x | 1.88x |
| Derivatives – Gross [6] | | | | | | |
| Interest rate contracts (gross) | $ 789 | Model-based | IR normal volatility | 0.09 % | 0.56 % | 0.48 % |
| | | | Inflation volatility | 0.21 % | 2.74 % | 0.77 % |
| | | | IR-IR correlation | (51.00)% | 40.00 % | 24.12 % |
| | | | Forward price | 37.62 % | 362.57 % | 104.12 % |
| | | | FX volatility | 3.35 % | 11.30 % | 9.93 % |
| | | | IR-FX correlation | 40.00 % | 60.00 % | 50.00 % |

| *As of December 31, 2019* | **Fair Value** [1] *(in millions)* | **Methodology** | **Input** | **Low** [2] [3] | **High** [2] [3] | **Weighted Average** [4] |
|---|---|---|---|---|---|---|
| Foreign exchange contracts (gross) | $ 267 | Model-based | IR normal volatility | 0.27 % | 0.66 % | 0.57 % |
| | | | FX volatility | 3.35 % | 12.16 % | 10.63 % |
| | | | IR-IR correlation | 40.00 % | 40.00 % | 40.00 % |
| | | | IR-FX correlation | 40.00 % | 60.00 % | 50.00 % |
| Equity contracts (gross) [7] | $ 846 | Model-based | Forward price | 37.62 % | 362.57 % | 97.51 % |
| | | | Equity volatility | 3.16 % | 48.90 % | 19.27 % |
| | | | Equity-FX correlation | (94.48)% | 60.00 % | (17.08)% |
| | | | Equity-Equity correlation | (45.00)% | 99.61 % | 46.75 % |
| | | | Equity-IR correlation | 15.00 % | 44.00 % | 32.66 % |
| Commodity contracts (gross) | $ 1,508 | Model-based | Forward price | 37.62 % | 362.57 % | 119.26 % |
| | | | Commodity volatility | 5.25 % | 93.63 % | 23.55 % |
| | | | Commodity correlation | (39.65)% | 87.81 % | 41.80 % |
| Credit derivatives (gross) | $ 346 | Model-based | Price | $ 9 | $ 100 | $ 92 |
| | 207 | Price-based | Upfront points | 0.99 % | 98.34 % | 53.60 % |
| | | | Credit spread | 10 bps | 362 bps | 100 bps |
| Other financial assets measured on a recurring basis | $ 3 | Model-based | Forward price | 58.73 % | 200.19 % | 118.42 % |
| Liabilities | | | | | | |
| Securities loaned and sold under agreements to repurchase | $ 757 | Model-based | Interest rate | 1.59 % | 2.38 % | 1.95 % |
| Trading account liabilities | | | | | | |
| Securities sold, not yet purchased | $ 39 | Price-based | Price | $ — | $ 866 | $ 95 |
| Short-term borrowings and long-term debt | $ 7,330 | Model-based | Forward price | 37.62 % | 362.57 % | 97.34 % |
| | | | Equity-IR correlation | 15.00 % | 44.00 % | 32.66 % |
| | | | IR normal volatility | 0.09 % | 0.66 % | 0.49 % |
| | | | Mean reversion | 1.00 % | 20.00 % | 10.50 % |
| | | | Equity volatility | 3.16 % | 21.94 % | 12.76 % |

(1) The fair value amounts presented in these tables represent the primary valuation technique or techniques for each class of assets or liabilities.
(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.

## Uncertainty of Fair Value Measurements Relating to Unobservable Inputs

Valuation uncertainty arises when there is insufficient or disperse market data to allow a precise determination of the exit value of a fair-valued position or portfolio in today’s market. This is especially prevalent in Level 3 fair value instruments, where uncertainty exists in valuation inputs that may be both unobservable and significant to the instrument’s (or portfolio’s) overall fair value measurement. The uncertainties associated with key unobservable inputs on the Level 3 fair value measurements may not be independent of one another. In addition, the amount and direction of the uncertainty on a fair value measurement for a given change in an unobservable input depends on the nature of the instrument as well as whether the Company holds the instrument as an asset or a liability. For certain instruments, the pricing, hedging and risk management are sensitive to the correlation between various inputs rather than on the analysis and aggregation of the individual inputs.

The following section describes some of the most significant unobservable inputs used by the Company in Level 3 fair value measurements.

### *Correlation*

Correlation is a measure of the extent to which two or more variables change in relation to each other. A variety of correlation-related assumptions are required for a wide range of instruments, including equity and credit baskets, foreign exchange options, CDOs backed by loans or bonds, mortgages, subprime mortgages and many other instruments. For almost all of these instruments, correlations are not directly observable in the market and must be calculated using alternative sources, including historical information. Estimating correlation can be especially difficult where it may vary over time, and calculating correlation information from market data requires significant assumptions regarding the informational efficiency of the market (e.g., swaption markets). Uncertainty therefore exists when an estimate of the appropriate level of correlation as an input into some fair value measurements is required.

Changes in correlation levels can have a substantial impact, favorable or unfavorable, on the value of an instrument, depending on its nature. A change in the default correlation of the fair value of the underlying bonds comprising a CDO structure would affect the fair value of the senior tranche. For example, an increase in the default correlation of the underlying bonds would reduce the fair value of the senior tranche, because highly correlated instruments produce greater losses in the event of default and a portion of these losses would become attributable to the senior tranche. That same change in default correlation would have a different impact on junior tranches of the same structure.

***Volatility***

Volatility represents the speed and severity of market price changes and is a key factor in pricing options. Volatility generally depends on the tenor of the underlying instrument and the strike price or level defined in the contract. Volatilities for certain combinations of tenor and strike are not observable and need to be estimated using alternative methods, such as using comparable instruments, historical analysis or other sources of market information. This leads to uncertainty around the final fair value measurement of instruments with unobservable volatilities.

The general relationship between changes in the value of a portfolio to changes in volatility also depends on changes in interest rates and the level of the underlying index. Generally, long option positions (assets) benefit from increases in volatility, whereas short option positions (liabilities) will suffer losses. Some instruments are more sensitive to changes in volatility than others. For example, an at-the-money option would experience a greater percentage change in its fair value than a deep-in-the-money option. In addition, the fair value of an option with more than one underlying security (e.g., an option on a basket of bonds) depends on the volatility of the individual underlying securities as well as their correlations.

***Yield***

In some circumstances, the yield of an instrument is not observable in the market and must be estimated from historical data or from yields of similar securities. This estimated yield may need to be adjusted to capture the characteristics of the security being valued. In other situations, the estimated yield may not represent sufficient market liquidity and must be adjusted as well. Whenever the amount of the adjustment is significant to the value of the security, the fair value measurement is classified as Level 3.

Adjusted yield is generally used to discount the projected future principal and interest cash flows on instruments, such as asset-backed securities. Adjusted yield is impacted by changes in the interest rate environment and relevant credit spreads.

***Prepayment***

Voluntary unscheduled payments (prepayments) change the future cash flows for the investor and thereby change the fair value of the security. The effect of prepayments is more pronounced for residential mortgage-backed securities. An increase in prepayments—in speed or magnitude—generally creates losses for the holder of these securities. Prepayment is generally negatively correlated with delinquency and interest rate. A combination of low prepayment and high delinquencies amplifies each input's negative impact on a mortgage securities' valuation. As prepayment speeds change, the weighted average life of the security changes, which impacts the valuation either positively or negatively, depending upon the nature of the security and the direction of the change in the weighted average life.

***Recovery***

Recovery is the proportion of the total outstanding balance of a bond or loan that is expected to be collected in a liquidation scenario. For many credit securities (such as asset-backed securities), there is no directly observable market input for recovery, but indications of recovery levels are available from pricing services. The assumed recovery of a security may differ from its actual recovery that will be observable in the future. The recovery rate impacts the valuation of credit securities. Generally, an increase in the recovery rate assumption increases the fair value of the security. An increase in loss severity, the inverse of the recovery rate, reduces the amount of principal available for distribution and, as a result, decreases the fair value of the security.

***Credit Spread***

Credit spread is a component of the security representing its credit quality. Credit spread reflects the market perception of changes in prepayment, delinquency and recovery rates, therefore capturing the impact of other variables on the fair value. Changes in credit spread affect the fair value of securities differently depending on the characteristics and maturity profile of the security. For example, credit spread is a more significant driver of the fair value measurement of a high yield bond as compared to an investment grade bond. Generally, the credit spread for an investment grade bond is also more observable and less volatile than its high yield counterpart.

**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.

The disclosure also excludes leases, affiliate investments and tax-related items. Also, as required, the disclosure excludes the effect of taxes, any premium or discount that could result from offering for sale at one time the entire holdings of a particular instrument and other expenses that would be incurred in a market transaction. In addition, the tables exclude the values of non-financial assets and liabilities, as well as intangible values, which are integral to a full assessment of the Company's financial position and the value of its net assets.

Fair values vary from period to period based on changes in a wide range of factors, including interest rates, credit quality and market perceptions of value, and as existing assets and liabilities run off and new transactions are entered into.

| | December 31, 2020 | | 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 | $ 79.1 | $ 79.1 | $ — | $ 79.1 | $ — |
| Receivables | 93.4 | 93.4 | — | 65.0 | 28.4 |
| Other financial assets (1) | 23.9 | 23.9 | 20.1 | — | 3.8 |
| **Liabilities** | | | | | |
| Securities loaned and sold under agreements to repurchase | $ 201.1 | $ 201.1 | $ — | $ 201.1 | $ — |
| Long-term debt | 68.1 | 68.2 | — | 65.1 | 3.1 |
| Other financial liabilities (2) | 79.0 | 79.0 | — | 21.0 | 58.0 |

| | December 31, 2019 | | 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 | $ 65.8 | $ 65.8 | $ — | $ 65.8 | $ — |
| Receivables | 81.9 | 81.9 | — | 56.1 | 25.8 |
| Other financial assets (1) | 20.1 | 20.1 | 16.4 | — | 3.7 |
| **Liabilities** | | | | | |
| Securities loaned and sold under agreements to repurchase | $ 141.6 | $ 141.6 | $ — | $ 141.6 | $ — |
| Long-term debt | 67.4 | 67.5 | — | 64.4 | 3.1 |
| Other financial liabilities (2) | 72.3 | 72.3 | — | 24.2 | 48.1 |

(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), payables to customers and brokers, dealers and clearing organizations, and other financial instruments included in *Other payables and accrued liabilities* on the Consolidated Statement of Financial Condition, for all of which the carrying value is a reasonable estimate of fair value.

## 12. 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 or 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 the applicable areas in which fair value elections were made is presented in Note 11 to the Consolidated Financial Statements.

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 for the years ended December 31, | |
|---|---|---|
| *In millions of dollars* | **2020** | **2019** |
| **Assets** | | |
| Securities borrowed and purchased under agreements to resell | $ 13 | $ 17 |
| Trading account assets | 3 | — |
| Other financial assets | 1,006 | (633) |
| **Total assets** | $ 1,022 | $ (616) |
| **Liabilities** | | |
| Securities loaned and sold under agreements to repurchase | $ (558) | $ 386 |
| Trading account liabilities | — | (2) |
| Short-term borrowings (1) | 715 | (30) |
| Long-term debt (1) | (1,674) | (2,577) |
| **Total liabilities** | $ (1,517) | $ (2,223) |

(1) Includes DVA that is included in *AOCI*. See Note 11 to the Consolidated Financial Statements.

### 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 Citi's credit spreads observed in the bond market. Changes in fair value of the Company's 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 $446 million and a loss of $819 million for the years ended December 31, 2020 and 2019, 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 Non-Collateralized 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 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 also elected the fair value option for certain securities financing agreements with embedded derivatives. Changes in fair value for these transactions are recorded in *Principal transactions*.

***Certain Structured Liabilities***

The Company has elected the fair value option for certain structured liabilities whose performance is linked to structured interest rates, inflation, currency, equity, referenced credit or commodity risks. The Company elected the fair value option 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* on the Company's Consolidated Statement of Financial Condition.

The following table provides information about the carrying value of structured notes, disaggregated by type of embedded derivative instrument:

| *In millions of dollars* | December 31, 2020 | December 31, 2019 |
|---|---|---|
| Equity linked | $ 27,127 | $ 21,019 |
| Interest rate linked | 10,179 | 9,918 |
| Credit linked | 2,379 | 2,412 |
| Commodity linked | 1,404 | 1,766 |
| Foreign exchange linked | 638 | 292 |
| Total | $ 41,727 | $ 35,407 |

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 structured liabilities include accrued interest, which is also included in the change in fair value reported in *Principal transactions*.

***Certain Non-Structured Liabilities***

The Company has elected the fair value option for certain non-structured liabilities with fixed and floating interest rates. The Company has elected the fair value option where the interest rate risk of such liabilities may be economically hedged with derivative contracts or the proceeds are used to purchase financial assets that will also be accounted for at fair value through earnings. The elections have been made to mitigate accounting mismatches and to achieve operational simplifications. These positions are reported in *Short-term borrowings* and *Long-term debt* on the Company's Consolidated Statement of Financial Condition. 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*.

Interest expense on non-structured liabilities is measured based on the contractual interest rates and reported as *Interest expense* in the Consolidated Statement of Income.

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

| *In millions of dollars* | December 31, 2020 | December 31, 2019 |
|---|---|---|
| Carrying amount reported on the Consolidated Statement of Financial Condition | $ 47,027 | $ 38,929 |
| Aggregate unpaid principal balance in excess of (less than) fair value | (1,200) | (2,316) |

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

| *In millions of dollars* | December 31, 2020 | December 31, 2019 |
|---|---|---|
| Carrying amount reported on the Consolidated Statement of Financial Condition | $ 4,086 | $ 3,998 |
| Aggregate unpaid principal balance in excess of fair value | 68 | 1,316 |

## 13. COLLATERAL, COMMITMENTS AND GUARANTEES

### Collateral

At December 31, 2020 and 2019, the approximate fair value of collateral received by the Company that may be resold or repledged, excluding the impact of allowable netting, was $640 billion and $537 billion, respectively. This collateral was received in connection with resale agreements, securities borrowings and loans, securities for securities lending transactions, derivative transactions and margined broker loans.

At December 31, 2020 and 2019, a substantial portion of the collateral received by the Company had been sold or repledged in connection with repurchase agreements, securities sold, not yet purchased, securities lendings, pledges to clearing organizations, segregation requirements under securities laws and regulations, derivative transactions and bank loans.

### 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 the options. These leases have a weighted-average remaining lease term of approximately 16 years and 17 years as of December 31, 2020 and 2019, respectively. The operating lease ROU asset was $820 million and $828 million, as of December 31, 2020 and 2019, respectively. The operating lease ROU liability was $653 million and $660 million, as of December 31, 2020 and 2019, respectively. 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. The total operating lease expense was $177 million and $186 million for the years ended December 31, 2020 and 2019, respectively.

CGMHI's cash outflows related to operating leases were $177 million for the year ended December 31, 2020, while the future lease payments are as follows:

| *In millions of dollars* | |
|---|---|
| 2021 | $ 62 |
| 2022 | 59 |
| 2023 | 51 |
| 2024 | 48 |
| 2025 | 48 |
| Thereafter | 549 |
| Total future lease payments | 817 |
| Less imputed interest (based on weighted-average discount rate of 2.8%) | (164) |
| Total future lease payments | $ 653 |

Operating lease expense was $216 million for the year ended December 31, 2018.

### Guarantees

CGMHI provides a variety of guarantees and indemnifications to its customers to enhance their credit standing and enable them to complete a wide variety 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.

#### *Derivative Instruments Considered to Be Guarantees*

Derivatives are financial instruments whose cash flows are based on a notional amount and an underlying instrument, reference credit or index, where there is little or no initial investment, and whose terms require or permit net settlement. For a discussion of CGMHI's derivatives activities, see Note 9 to the Consolidated Financial Statements.

Derivative instruments considered to be guarantees include only those instruments that require CGMHI to make payments to the counterparty based on changes in an underlying instrument that is related to an asset, a liability or an equity security held by the guaranteed party. More specifically, derivative instruments considered to be guarantees include certain over-the-counter written put options where the counterparty is not a bank, hedge fund or broker-dealer (such counterparties are considered to be dealers in these markets and may, therefore, not hold the underlying instruments). Credit derivatives sold by CGMHI are excluded from the guarantees disclosure as they are disclosed separately in Note 9 to the Consolidated Financial Statements. In instances where CGMHI's maximum potential future payment is unlimited, the notional amount of the contract is disclosed.

As of December 31, 2020, the maximum potential amount of future payments on derivative instruments considered to be guarantees was $12.6 billion, including $3.6 billion expiring within one year. As of December 31, 2019, the maximum potential amount of future payments on derivative instruments considered to be guarantees was $16.6 billion, including $7.7 billion expiring within one year. The carrying amount of the liabilities related to these derivative instruments considered to be guarantees was $281 million and $65 million at December 31, 2020 and 2019, respectively, and is recorded at fair value in *Trading account liabilities*.

***Other Guarantees and Indemnifications***

*Other Representation and Warranty Indemnifications*
In the normal course of business, the Company provides standard representations and warranties to counterparties in contracts in connection with numerous transactions and also provides indemnifications, including indemnifications that protect the counterparties to the contracts in the event that additional taxes are owed, due either to a change in the tax law or an adverse interpretation of the tax law. Counterparties to these transactions provide the Company with comparable indemnifications. While such representations, warranties and indemnifications are essential components of many contractual relationships, they do not represent the underlying business purpose for the transactions. The indemnification clauses are often standard contractual terms related to the Company's own performance under the terms of a contract and are entered into in the normal course of business based on an assessment that the risk of loss is remote. Often these clauses are intended to ensure that terms of a contract are met at inception. No compensation is received for these standard representations and warranties, and it is not possible to determine their fair value because they rarely, if ever, result in a payment. In many cases, there are no stated or notional amounts included in the indemnification clauses, and 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 December 31, 2020 or December 31, 2019 for potential obligations that could arise from these indemnifications provided by the Company.

*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 December 31, 2020 and December 31, 2019, CGMHI had $9.0 billion and $14.3 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 December 31, 2020 or December 31, 2019 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 (CCPs) 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 9 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 *Payables to customers* and *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 $11.0 billion and $11.5 billion as of December 31, 2020 and December 31, 2019, 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 $0.8 billion and $0.7 billion at December 31, 2020 and December 31, 2019, 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 December 31, 2020 or December 31, 2019 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 December 31, 2020 and 2019, the Company had approximately $13.6 billion and $14.7 billion in unsettled reverse repurchase and securities borrowing agreements, and $64.4 billion and $41.7 billion in unsettled repurchase and securities lending agreements, respectively. 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, see Note 5 to the Consolidated Financial Statements.

***Other Financing Commitments***

Other CGMHI financing commitments of $3.0 billion and $28 million at December 31, 2020 and December 31, 2019, respectively, include commitments to enter into collateralized financing transactions.

## 14. 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.

**INCOME STATEMENT ITEMS**

| | Years ended December 31, | | |
|---|---|---|---|
| *In millions of dollars* | 2020 | 2019 | 2018 |
| **Revenues** | | | |
| Principal transactions [1] | $ 9,064 | $ 2,464 | $ 1,328 |
| Investment banking | 293 | 354 | 237 |
| All other revenues [2] | 20 | 102 | 165 |
| **Total non-interest revenues** | 9,377 | 2,920 | 1,730 |
| Interest revenue | 921 | 1,942 | 1,659 |
| Interest expense | 2,170 | 4,243 | 3,539 |
| **Net interest revenue (expense)** | (1,249) | (2,301) | (1,880) |
| **Total revenues, net of interest expense** | $ 8,128 | $ 619 | $ (150) |
| **Operating expenses** | | | |
| Communications | $ 412 | $ 566 | $ 464 |
| Occupancy and equipment | 190 | 173 | 100 |
| All other expenses [3] | 1,715 | 1,671 | 1,748 |
| **Total non-interest expenses** | $ 2,317 | $ 2,410 | $ 2,312 |

(1) Includes mark-to-market valuation adjustments for derivatives or hedges executed with non-consolidated CGMHI affiliates, but does not include mark-to-market valuation adjustments related to any offsetting derivatives executed with third parties external to CGMHI.

(2) Includes trade management and intermediation fees charged to affiliates.

(3) 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* | December 31, 2020 | December 31, 2019 |
|---|---|---|
| **Assets** | | |
| Cash and cash equivalents | $ 7,355 | $ 5,483 |
| Cash segregated under federal and other regulations | 6,904 | 6,322 |
| Securities borrowed and purchased under agreements to resell | 24,309 | 21,446 |
| Derivatives | 9,400 | 5,858 |
| Loans to affiliates | 50,701 | 44,617 |
| Brokerage and other receivables and other assets | 789 | 590 |
| Total assets | $ 99,458 | $ 84,316 |
| **Liabilities** | | |
| Short-term borrowings | $ 12,757 | $ 17,129 |
| Securities loaned and sold under agreements to repurchase | 76,589 | 36,581 |
| Derivatives | 8,591 | 5,109 |
| Payables and accrued liabilities: | | |
| Customers and brokers, dealers and clearing organizations | 14,392 | 6,902 |
| Other | 986 | 1,131 |
| Long-term debt | 67,322 | 66,791 |
| Total liabilities | $180,637 | $133,643 |

**Stock-Based Compensation and Retirement Benefits**

As discussed in Note 3 to the Consolidated Financial Statements, the Company participates in various Citigroup stock-based compensation programs under which Citigroup stock or stock options are granted to certain of the Company's employees. The Company has no stock-based compensation programs in which its own stock is granted. The Company pays Citigroup directly for participation in certain of its stock-based compensation programs, but receives a capital contribution for those awards related to participation in the employee incentive stock option program.

As discussed in Note 3 to the Consolidated Financial Statements, the Company participates in several non-contributory defined-benefit pension plans and a defined-contribution plan sponsored by Citigroup covering certain eligible employees.

**CGMHI Tax-Sharing Agreement**
As discussed in Note 4 to the Consolidated Financial Statements, the Company is included in the Citigroup consolidated federal tax return and is a party to a tax-sharing agreement with Citigroup. Under such agreement, the Company is entitled to a tax benefit for its losses and credits that are recognized in Citigroup's Consolidated Financial Statements. Settlements between the Company and Citigroup of current taxes occur throughout the year. The Company also files its consolidated and combined state income tax returns with Citigroup and/or others of its subsidiaries.

**Other Intercompany Agreements**
Citigroup and its subsidiaries engage in other transactions and servicing activities with the Company, including cash management, data processing, telecommunications, payroll processing and administration, facilities procurement, underwriting and others.

The Company recognized payroll tax and other payroll expenses related to CGMHI employees of approximately $98 million, $99 million, and $100 million for the years ended December 31, 2020, 2019 and 2018, respectively, whereby affiliates manage CGMHI’s payroll processes and CGMHI reimburses the affiliates for these payroll expenses.

## 15. 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 the litigation, regulatory and 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.

*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 Asset Forfeiture and Money Laundering 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 an 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 accruals ultimately incurred for the matters as to 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 of 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 legal or other 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.

**ANZ Underwriting Matter**
In 2018, the Australian Commonwealth Director of Public Prosecutions (CDPP) filed charges against Citigroup Global Markets Australia Pty Limited (CGMA) for alleged criminal cartel offenses following a referral by the Australian Competition and Consumer Commission. CDPP alleges that the cartel conduct took place following an institutional share placement by Australia and New Zealand Banking Group Limited (ANZ) in August 2015, where CGMA acted as joint underwriter and lead manager with other banks. CDPP also charged other banks and individuals, including current and former Citi employees. Separately, the Australian Securities and Investments Commission is conducting an investigation, and CGMA is cooperating with the investigation. Charges relating to CGMA are captioned R v. CITIGROUP GLOBAL MARKETS AUSTRALIA PTY LIMITED. The matter is before the Federal Court in New South Wales, Australia. Additional information concerning this action is publicly available in court filings under the docket number NSD 1316 - NSD 1324/2020.

**Facilitation Trading Matters**
Regulatory agencies in Asia Pacific countries and elsewhere are conducting investigations or making inquiries regarding Citigroup affiliates' equity sales trading desks in connection with facilitation trades, which are securities transactions in which Citigroup trades fully or partially as principal. Citigroup is cooperating with these investigations and inquiries.

**Foreign Exchange Matters**
*Regulatory Actions*: Government and regulatory agencies in the U.S. and in 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. Plaintiffs assert claims under the Sherman Act and unjust enrichment claims, and seek consequential and punitive damages and other forms of relief. On July 28, 2020, plaintiffs filed a third amended complaint. Additional information concerning this action is publicly available in court filings under the docket number 18 Civ. 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. Additional information concerning this action is publicly available in court filings under the case number CL-2018-000840.

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. Additional information concerning this action is publicly available in court filings under the docket numbers 15 Civ. 2290 (N.D. Cal.) (Chhabria, J.) and 15 Civ. 9300 (S.D.N.Y.) (Schofield, J.).

In 2017, putative classes of indirect purchasers of certain foreign exchange instruments filed an action against Citigroup, Citibank, Citicorp, CGMI and other defendants, captioned CONTANT, 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 engaged in a conspiracy to fix currency prices. Plaintiffs assert claims under the Sherman Act and various state antitrust laws, and seek compensatory damages and treble damages. On November 19, 2020, the court granted final approval of a settlement between plaintiffs and Citigroup, Citibank, Citicorp and CGMI. Additional information concerning this action is publicly available in court filings under the docket number 17 Civ. 3139 (S.D.N.Y.) (Schofield, J.).

In 2019, an application, captioned MICHAEL O'HIGGINS FX CLASS REPRESENTATIVE LIMITED v. BARCLAYS BANK PLC AND OTHERS, was made to the U.K.'s Competition Appeal Tribunal requesting permission to commence collective proceedings against Citigroup, Citibank and other defendants. The application seeks 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). Additional information concerning this action is publicly available in court filings under the case number 1329/7/7/19.

In 2019, an application, captioned PHILLIP EVANS v. BARCLAYS BANK PLC AND OTHERS, was made to the U.K.'s Competition Appeal Tribunal requesting permission to commence collective proceedings against Citigroup, Citibank and other defendants. The application seeks compensatory damages similar to those in the Michael O'Higgins FX Class Representative Limited application. Additional information concerning this action is publicly available in court filings under the case number 1336/7/7/19.

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. A hearing on Citibank's motion to dismiss plaintiffs' petition for certification is scheduled for April 12, 2021. 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**

*Antitrust and Other Litigation*: In 2016, a putative class action was filed against Citibank, Citigroup and other defendants, now captioned FUND LIQUIDATION HOLDINGS LLC, AS ASSIGNOR AND SUCCESSOR-IN-INTEREST TO FRONTPOINT ASIAN EVENT DRIVEN FUND L.P., ET AL. v. CITIBANK, N.A., ET AL., in the United States District Court for the Southern District of New York. Plaintiffs allege that defendants manipulated the Singapore Interbank Offered Rate and Singapore Swap Offer Rate. Plaintiffs assert claims under the Sherman Act, the Clayton Act, the RICO Act and state law. In 2018, plaintiffs entered into a settlement with Citigroup and Citibank, under which Citigroup and Citibank agreed to pay approximately $10 million. In July 2019, the court found that it lacked subject-matter jurisdiction over the non-settling defendants and dismissed the case. The court also found that it lacked jurisdiction to approve the settlement and denied plaintiffs' motion for preliminary approval of the settlement. In August 2019, plaintiffs filed an appeal with 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 16 Civ. 5263 (S.D.N.Y.) (Hellerstein, J.) and 19-2719 (2d Cir.).

In 2016, Banque Delubac filed an action against Citigroup, Citigroup Global Markets Limited (CGML) and Citigroup Europe Plc, captioned SCS BANQUE DELUBAC & CIE v. CITIGROUP INC., ET AL., in the Commercial Court of Aubenas in France. Plaintiff alleges that defendants suppressed LIBOR submissions between 2005 and 2012 and that Banque Delubac's EURIBOR-linked lending activity was negatively impacted as a result. Plaintiff asserts a claim under tort law, and seeks compensatory damages and consequential damages. In November 2018, the Commercial Court of Aubenas referred the case to the Commercial Court of Marseille. In March 2019, the Court of Appeal of Nîmes held that neither the Commercial Court of Aubenas nor any other court of France has territorial jurisdiction over Banque Delubac's claims. In May 2019, plaintiff filed an appeal before the Cour de cassation of France challenging the Court of Appeal of Nîmes's decision. Additional information concerning this action is publicly available in court filings under docket numbers RG no. 2018F02750 in the Commercial Court of Marseille and 19-16.931 in the *Cour de cassation*.

In May 2019, three putative class actions filed against Citigroup, Citibank, CGMI and other defendants were consolidated, under the caption IN RE ICE LIBOR ANTITRUST LITIGATION, in the United States District Court of the Southern District of New York. In July 2019, plaintiffs filed a consolidated amended complaint. Plaintiffs allege that defendants suppressed ICE LIBOR. Plaintiffs assert claims under the Sherman Act, the Clayton Act, and unjust enrichment, and seek compensatory damages, disgorgement, and treble damages. In March 2020, the court granted defendants' motion to dismiss the action for failure to state a claim, which plaintiffs appealed to the United States Court of Appeals for the Second Circuit. On December 28, 2020, DYJ Holdings, LLC filed a motion to intervene as a plaintiff, given that the existing plaintiffs intended to withdraw from the case, which defendants opposed and separately moved to dismiss for lack of subject matter jurisdiction. Additional information concerning this action is publicly available in court filings under the docket numbers 19 Civ. 439 (S.D.N.Y.) (Daniels, J.) and 20-1492 (2d Cir.).

On August 18, 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 November 11, 2020, defendants filed a motion to transfer the case 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 20 Civ. 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 all of 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.).

**Shareholder Derivative and Securities Litigation**

Beginning on October 16, 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 Citigroup's current directors and certain former directors. On December 3, 2020, the actions were consolidated under the caption IN RE CITIGROUP INC. SHAREHOLDER DERIVATIVE LITIGATION. On December 24, 2020, plaintiffs filed a consolidated complaint asserting 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. Additional information concerning this action is publicly available in court filings under the docket number 1:20-cv-09438 (S.D.N.Y.) (Nathan, J.).

Beginning on December 4, 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 Citigroup's current directors, certain former directors, and certain current and former officers. The actions are captioned P. ALEXANDER ATAII v. CORBAT, ET AL. and ASHLEY IKEDA v. CORBAT, ET AL. The complaints assert claims for breach of fiduciary duty and unjust enrichment in connection with defendants' alleged failures to implement adequate internal controls. Additional information concerning these actions is publicly available in court filings under the docket numbers 656759/2020 (N.Y. Sup. Ct.) and 657086/2020 (N.Y. Sup. Ct.).

Beginning on October 30, 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 are captioned CITY OF SUNRISE FIREFIGHTERS' PENSION FUND v. CITIGROUP INC., ET AL., CITY OF STERLING HEIGHTS GENERAL EMPLOYEES' RETIREMENT SYSTEM v. CITIGROUP INC., ET AL., and TIMOTHY LIM v. CITIGROUP INC., ET AL. Additional information concerning these actions is publicly available in court filings under the docket numbers 1:20-CV-9132 (S.D.N.Y.) (Nathan, J.), 1:20-CV-09573 (S.D.N.Y.) (Nathan, J.), and 1:20-CV-10360 (S.D.N.Y.) (Nathan, J.).

**Sovereign Securities Matters**

*Regulatory Actions*: Government and regulatory agencies in the U.S. and in other jurisdictions 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.

*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. In 2017, a consolidated amended complaint was filed, alleging 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. The complaint asserts claims under antitrust laws, and seeks damages, including treble damages where authorized by statute, and injunctive relief. In February 2018, defendants moved to dismiss the complaint. 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 2016 and 2017, actions by putative classes of direct purchasers of supranational, sub-sovereign and agency (SSA) bonds filed against Citigroup, Citibank, CGMI, CGML and other defendants were consolidated, under the caption IN RE SSA BONDS ANTITRUST LITIGATION, in the United States District Court for the Southern District of New York. In 2018, a second amended consolidated complaint was filed, alleging that defendants, as market makers and traders of SSA bonds, colluded to fix the price at which they bought and sold SSA bonds in the secondary market. The complaint asserts claims under the antitrust laws and unjust enrichment, and seeks damages, including treble damages where authorized by statute, and disgorgement. In 2019, the court granted defendants' motion to dismiss certain defendants, including CGML. On June 1, 2020, plaintiffs appealed to the United States Court of Appeals for the Second Circuit from the district court's grant of defendants' remaining motion to dismiss the second amended consolidated complaint. Additional information concerning this action is publicly available in court filings under the docket numbers 16 Civ. 3711 (S.D.N.Y.) (Ramos, J.) and 20-1759 (2d Cir.).

In 2017, purchasers of SSA bonds filed a proposed class action on behalf of direct and indirect purchasers of SSA 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. In October 2019, plaintiffs filed an amended claim. The complaint alleges that 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 2019, the State of Louisiana filed an action against CGMI and other defendants, captioned STATE OF LOUISIANA v. BANK OF AMERICA, N.A., ET AL., in the United States District Court for the Middle District of Louisiana. The complaint alleges that defendants conspired to manipulate the market for bonds issued by U.S. government-sponsored agencies. The complaint asserts a claim for a violation of the Sherman Act, and seeks treble damages and injunctive relief. Additional information concerning this action is publicly available in court filings under the docket number 19 Civ. 638 (M.D. La.) (Dick, C.J.).

In 2019, the City of Baton Rouge and related plaintiffs filed a substantially similar action against CGMI and other defendants, captioned CITY OF BATON ROUGE, ET AL. v. BANK OF AMERICA, N.A., ET AL., in the United States District Court for the Middle District of Louisiana. Additional information concerning this action is publicly available in court filings under the docket number 19 Civ. 725 (M.D. La.) (Dick, C.J.).

On April 1, 2020, the Louisiana Asset Management Pool filed a substantially similar action against CGMI and other defendants, captioned LOUISIANA ASSET MANAGEMENT POOL v. BANK OF AMERICA CORPORATION, ET AL., in the United States District Court for the Eastern District of Louisiana, which was subsequently transferred to the United States District Court for the Middle District of Louisiana. Additional information concerning this action is publicly available in court filings under the docket number 21 Civ. 0003 (M.D. La.) (Dick, C.J.).

On September 21, 2020, the City of New Orleans and related entities filed a substantially similar action against CGMI and other defendants, captioned CITY OF NEW ORLEANS, ET AL. v. BANK OF AMERICA CORPORATION, ET AL., in the United States District Court for the Eastern District of Louisiana. Additional information concerning this action is publicly available in court filings under the docket number 20 Civ. 2570 (E.D. La.) (Vitter, J.).

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 and any other U.S. Citi affiliates. The amended complaint alleges a conspiracy to fix prices in the Mexican sovereign bond market from January 1, 2006 to April 19, 2017, and asserts antitrust and unjust enrichment claims, and seeks treble damages, restitution and injunctive relief. On February 21, 2020, certain defendants, including Citibanamex, moved to dismiss the amended, which the court later granted. Additional information concerning this action is publicly available in court filings under the docket number 18 Civ. 2830 (S.D.N.Y.) (Oetken, J.).

**Transaction Tax Matters**
Citigroup and Citibank are engaged in litigation or examinations with non-U.S. tax authorities, including in the U.K., India, and Germany, concerning the payment of transaction taxes and other non-income tax matters.

**Tribune Company Bankruptcy**
Certain Citigroup affiliates (along with numerous other parties) have been named as defendants in adversary proceedings related to the Chapter 11 cases of Tribune Company (Tribune) filed in the United States Bankruptcy Court for the District of Delaware, asserting claims arising out of the approximately $11 billion leveraged buyout of Tribune in 2007. The actions were consolidated as IN RE TRIBUNE COMPANY FRAUDULENT CONVEYANCE LITIGATION and transferred to the United States District Court for the Southern District of New York.

In the adversary proceeding captioned KIRSCHNER v. FITZSIMONS, ET AL., the litigation trustee, as successor plaintiff to the unsecured creditors committee, seeks to avoid and recover as actual fraudulent transfers the transfers of Tribune stock that occurred as a part of the leveraged buyout. Several Citigroup affiliates, along with numerous other parties, were named as shareholder defendants and were alleged to have tendered Tribune stock to Tribune as a part of the buyout. In 2017, the United States District Court for the Southern District of New York dismissed the actual fraudulent transfer claim against the shareholder defendants, including the Citigroup affiliates. In 2019, the litigation trustee filed an appeal to the United States Court of Appeals for the Second Circuit.

Several Citigroup affiliates, along with numerous other parties, are named as defendants in certain actions brought by Tribune noteholders, which seek to recover the transfers of Tribune stock that occurred as a part of the leveraged buyout, as state-law constructive fraudulent conveyances. The noteholders' claims were previously dismissed and the dismissal was affirmed on appeal. In 2018, the United States Court of Appeals for the Second Circuit withdrew its 2016 transfer of jurisdiction to the district court to reconsider its decision in light of a recent United States Supreme Court decision. In 2019, the Court of Appeals issued an amended decision again affirming the dismissal. In January 2020, the noteholders filed a petition for rehearing. On July 6, 2020, the noteholders filed a petition for a writ of certiorari in the United States Supreme Court. On October 5, 2020, the Supreme Court called for the views of the Acting Solicitor General on whether the petition should be granted.

CGMI was named as a defendant in a separate action, KIRSCHNER v. CGMI, in connection with its role as advisor to Tribune. In 2019, the court dismissed the action, which the litigation trustee has appealed to the United States Court of Appeals for the Second Circuit.

Additional information concerning these actions is publicly available in court filings under the docket numbers 08-13141 (Bankr. D. Del.) (Carey, J.), 11 MD 02296 (S.D.N.Y.) (Cote, J.), 12 MC 2296 (S.D.N.Y.) (Cote, J.), 13-3992 (2d Cir.), 19-0449 (2d Cir.), 19-3049 (2d Cir.), 16-317 (U.S.), and 20-8 (U.S. Supreme Court).

**Variable Rate Demand Obligation Litigation**
In 2019, 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. Additional information concerning this action is publicly available in court filings under the docket numbers 19-CV-1608 (S.D.N.Y.) (Furman, J.) and 19-CV-2667 (S.D.N.Y.) (Furman, J.).

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

## 16. SUBSEQUENT EVENTS

The Company has evaluated whether events or transactions have occurred after December 31, 2020 that would require recognition or disclosure in these financial statements through April 30, 2021, which is the date these financial statements were available to be issued. No such transactions required recognition or disclosure in the financial statements for the year ended December 31, 2020.