CITIGROUP GLOBAL MARKETS LIMITED

(Registered Number: 01763297)

ANNUAL REPORT AND FINANCIAL STATEMENTS

for the year ended 31 December 2021

CITIGROUP GLOBAL MARKETS LIMITED

STRATEGIC REPORT

for the year ended 31 December 2021

The Directors present their strategic report on Citigroup Global Markets Limited (CGML or the Company) on a standalone basis for the year ended 31 December 2021.

1. Introduction

CGML is a wholly owned, indirect subsidiary of Citigroup Inc, limited by shares. It is Citi's international broker dealer, providing products and services for institutional clients. It is a market maker in equity, fixed income and commodity products across cash, over-the-counter (OTC) derivatives and exchange-traded markets, as well as a provider of investment banking, capital markets and advisory services. CGML operates globally, generating the majority of its business from the Europe, Middle East and Africa (EMEA) region with the remainder coming from Asia and the Americas.

CGML is authorised by the Prudential Regulation Authority (PRA) and regulated by the PRA and Financial Conduct Authority (FCA). CGML is also a Commodity Futures Trading Commission (CFTC) registered swap dealer, and United States Securities Exchange Commission (SEC) registered security-based swap dealer, and is considered a Risk-Taking Operating Material Legal Entity in Citi's Global Resolution Plan. As at 31 December 2021, it had five branch offices and four subsidiaries, listed below. These are not materially active except for the Israel branch, Citigroup Global Markets Europe AG, and Citigroup Global Markets Funding Luxembourg SCA. The Italy branch of CGML is currently in liquidation, which is expected to be completed in 2022. Changes after the reporting period are discussed in the Strategic and Directors' Reports and in Note 34 'Events after the reporting period'.

EU Branches	**Subsidiaries**
Czech Republic	Citigroup Global Markets Europe AG (Germany)
Italy (in liquidation)	Citigroup Global Markets Funding Luxembourg SCA (Luxembourg)
Non-EU Branches	Citigroup Global Markets Funding Luxembourg GP S.a.R.L. (Luxembourg)
Israel	Citi Global Wealth Management S.A.M. (Monaco)
Switzerland	Citigroup Global Markets Luxembourg S.a.R.L. (Luxembourg) (liquidated on 7
UAE	December 2021)

CGML's business supports the Institutional Clients Group (ICG) segment of Citi's operations and is almost entirely wholesale in nature, with a client base that encompasses corporates, financial institutions, institutional and other investors, as well as governments and public sector entities. CGML's principal business activities are summarised below:

Business	*Activities*
Global Rates and Currencies	Makes markets and facilitates client activity across interest rate products in traded markets, including sovereign and supranational bonds, inflation bonds, and interest rate, cross currency and inflation derivatives. The business conducts much of its client facing activity on CGML with some market risk transferred to other Citi affiliates. Facilitates local and international client demand for flow foreign exchange (FX) products, such as spot and forward contracts, short term interest rate products, and interest rate and currency derivatives. FX risk is largely warehoused on other affiliated Citi entities, with CGML acting in a client facing capacity. In particular, the business utilises CGML to access non-US primary market liquidity pools in non-deliverable forward contracts and FX options.
Global Spread Products	Provides clients with access to investment grade, high yield and distressed bond markets, as well as credit derivatives and structured credit products.

1. Introduction (continued)

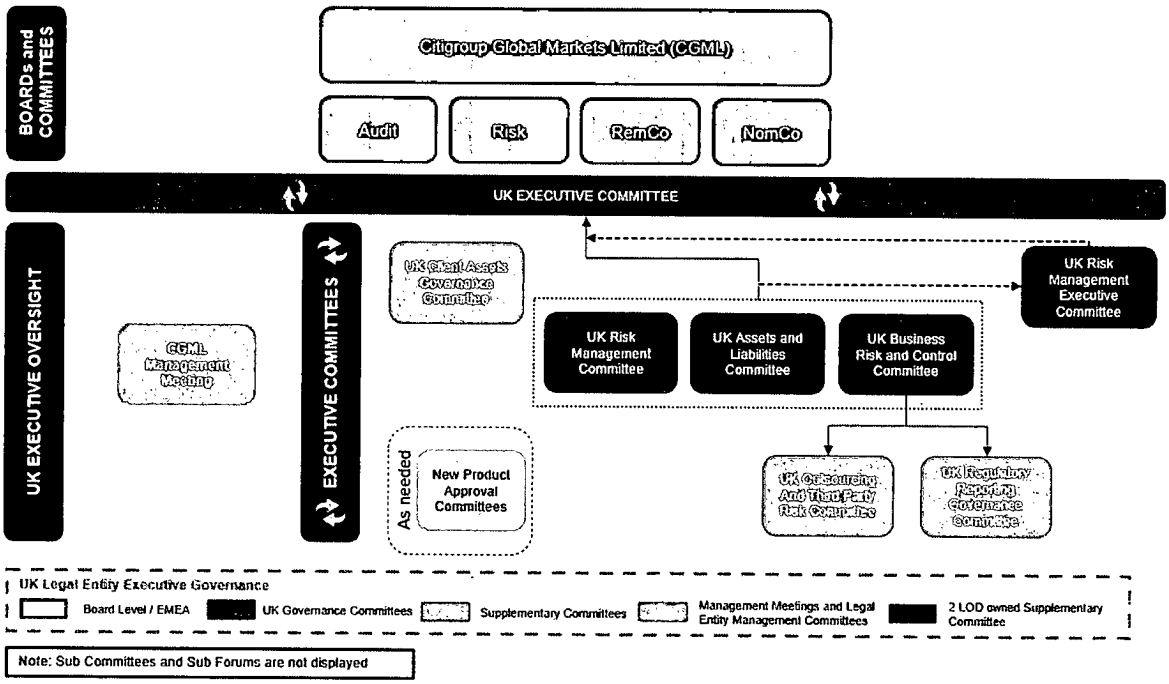
Business	*Activities*
Global Equities Markets	Comprises: • Equity Markets, undertakes market making in, and provides clients with exposure to, equities, convertible bonds, listed and OTC derivatives, structured products, securities financing, and electronic trading. • Multi Asset Group develops asset-based investment and hedging solutions for distributors and institutional investors, with a particular focus on insurance companies, asset managers (including hedge funds) and pension funds. • Prime Finance, provides globally co-ordinated prime brokerage services to clients, including securities lending, margin financing, reporting, clearing, custody and structured financing solutions. • Delta One, which provides access, financing, and investment solutions to a broad spectrum of clients (institutional, corporates and hedge funds) via synthetic products such as swaps, exchange-traded funds (ETFs) and access products.
Securities Services	Futures and OTC Clearing, which provides clients with access to global liquidity venues, global execution on all major futures exchanges, multi-asset clearing services on global central counterparties (CCPs) and delivery of collateral solutions.
Global Commodities	Acts as a principal in commodity markets worldwide, providing risk management services to clients, acting as a liquidity provider and providing investor solutions and working capital facilities for commodity inventories.
Banking, Capital Markets and Advisory (BCMA)	BCMA provides structuring and syndication of securities and financing transactions in the bond capital markets and delivers equity and equity-linked solutions in financing acquisitions, funding capital expenditures, managing liabilities, monetising assets, and hedging exposures. The business also provides advisory services to clients in relation to mergers and acquisitions, corporate broking and the raising and restructuring of capital.

A number of CGML's functional operations are carried out in locations outside London, including at Citi Service Centres in Belfast, Budapest, and Warsaw. In addition, CGML makes use of a number of affiliated and third party outsourcing arrangements within and outside EMEA.

2. CGML Corporate Governance Report and Principal Risks

For the year ended 31 December 2021, under The Companies (Miscellaneous Reporting) Regulations 2018, the Company has applied the Wates Corporate Governance Principles for Large Private Companies (published by the Financial Reporting Council (FRC) in December 2018 and available on the FRC website).

The chart below highlights the main components of CGML's governance structure, within Citi's regional and UK management and governance framework during 2021:



Principle 1 – Purpose and Leadership

Purpose

CGML's purpose, in line with that of Citi, is to serve as a trusted partner to its clients by responsibly providing financial services that enable growth and economic progress. CGML's core activities are being a dealer, market maker and underwriter and providing advisory services. Whilst carrying out these activities, it ensures that actions are always in its clients' interests, create economic value and are systemically responsible.

Strategy

CGML's strategic purpose was formalised with the adoption of an annual Strategy Day, under the direction of the Board of Directors (the Board). The Strategy Day looks at the year ahead and drives the Board agenda setting. The Strategy Day is an example of ensuring good dialogue with the CGML workforce and wider stakeholders. The key strategic priorities for CGML for the year ended 31 December 2021 were as follows:

- Deliver client excellence as Citi's international broker-dealer;
- Improve infrastructure to drive resilience, efficiency and a great client experience;
- Make strong governance and controls a cornerstone of CGML's success;
- Attract, retain and develop talent and shape good culture and conduct; and
- Efficient utilisation of financial resources.

The CGML Strategic and Financial Plan 2021-2023 was documented and approved by the CGML Board following the Strategy Day and is used to clearly articulate the CGML strategic priorities internally.

2. CGML Corporate Governance Report and Principal Risks (continued)

Principle 1 – Purpose and Leadership (continued)

Values and Culture

The Board and senior management are instrumental in shaping good culture and conduct for the Company. The Company's Leadership Principles (take ownership, deliver with pride, and succeed together), represent the qualities, behaviours and expectations employees must exhibit to deliver on the mission of enabling growth and economic progress. Employees contribute to creating a culture that drives client excellence, controls excellence and operational excellence.

Diversity and Inclusion are recognised as part of CGML's core values and the Company needs a culture in which employees hold themselves accountable for managing risk and where they continue to take pride in always doing the right thing. Doing the right thing includes taking ownership and showing empathy for colleagues, clients and communities, treating others with respect and civility, and continuing to invest in colleagues from all backgrounds, valuing and learning from different perspectives and breaking down barriers. CGML monitors and measures its 'cultural health' and conduct at governance and management meetings and uses a range of measures to help adjust and improve itself.

Citi's Code of Conduct prohibits discrimination and harassment and highlights procedures for speaking up and reporting concerns about conduct or situations that may put the Company or its customers at risk. For further details please see the Mission and Strategy section on page 11.

Principle 2 – Board Composition

The details of each member of the Board during the year ended 31 December 2021 can be found in the Directors' Report on page 21.

Chair

To ensure that the balance of responsibilities, accountabilities and decision making across the Company are effectively maintained, CGML has appointed a separate Chair and Chief Executive.

Size and Structure

As at 31 December 2021, the Board consisted of six Executive Directors and four Independent Non-Executive Directors.

The Executive Directors are:

- James Bardrick - CGML Chief Executive Officer (CEO)
- Frank Mannion - EMEA Chief Financial Officer (CFO)
- Leonardo Arduini - EMEA Head of Markets
- Anne-Maree Tassell - EMEA Head of Operations and Technology (O&T) and Chief Information Officer
- Zoe Wimborne - EMEA Chief Risk Officer (CRO)
- Deepak Jain - Global Head of Independent Compliance Risk Management (ICRM) Special Projects

The Independent Non-Executive Directors are:

- Jonathan Moulds - Chair of CGML Board, Chair of CGML Nomination Committee and Interim Chair of Remuneration Committee
- William Fall - Chair of CGML Risk Committee
- Sally Clark - Chair of CGML Audit Committee
- Diana Taylor - Group representative from Citigroup, Inc. Board

2. CGML Corporate Governance Report and Principal Risks (continued)

Principle 2 – Board Composition (continued)

During Q3 2020 the CGML Board carried out an external Board Effectiveness Review to ensure the Board is focused on preparation for the future and has in place a long-term roadmap for development. The composition of the Board changed during 2021 to ensure that the size and composition was appropriate for the scale, complexity, regulatory oversight, and systemic importance of CGML within Citi. The EMEA Chief Risk Officer, Zoe Wimborne, and EMEA Head of O&T and Chief Information Officer, Anne-Maree Tassell, joined the Board as Executive Directors. Jonathan Moulds, William Fall and Sally Clark joined the Board in February 2021 as Independent Non-Executive Directors (see their respective titles above). Each new Board Director brings a wealth of experience in the financial services industry and subsidiary governance. Jonathan Moulds joined as the Senior Independent Director taking over as Chair when Cyrus Ardalan resigned in November 2021.

The Independent Non-Executive Directors bring experience in risk, finance and audit, in addition to perspectives and challenge from their roles within the industry and also outside the sectors in which CGML operates. All Directors have access to the advice and services of the Company Secretary's office and may, if they wish, take professional advice at the Company's expense. The duties of the Board are executed partially through committees. The Independent Non-Executive Directors attend and act as chair to relevant committees (as noted on page 6) so that they are able to challenge and influence a broad range of areas affecting CGML. One Non-Executive Director, Diana Taylor, is also a Non-Executive Director of the ultimate parent, Citigroup Inc.

The Board comprises and is supported by nine of Citi's UK Senior Managers (as defined under the Senior Manager and Certification Regime (SM&CR) from the PRA and the FCA) including the relevant EMEA business heads together with the Regional heads of Finance, O&T and Risk. Three of the four Non-Executive Directors are Senior Managers and they are subject to all aspects of the SM&CR, including regulatory pre-approval, conduct rules and the statutory duty of responsibility.

The SM&CR focuses on a small number of individuals (Senior Managers) who hold key roles or have overall responsibility for whole areas of relevant UK entities and branches. Senior Managers require regulatory pre-approval to perform a Senior Management Function (SMF). The SM&CR requires Senior Managers to take reasonable steps to avoid a breach occurring or continuing. As part of the Individual Accountability Regime (of which the SM&CR is a part), CGML maintains a Management Responsibilities Map which documents the firm's governance arrangements.

Balance and diversity

There has been significant improvement in the gender diversity of the Board with the percentage of female Directors increasing from 12.5% in 2020 to 40% during 2021. We acknowledge that there is a relative lack of diversity on the Board for other categories beyond gender and recognise that this is a challenge across the financial services industry. Citi is committed to making the Company an ever-more inclusive environment, thereby fostering a more diverse workforce which should increase diversity at the most senior levels. We will be demonstrating our commitment to this area with various initiatives and ensuring CGML is increasingly viewed as an employer of choice

Effectiveness

The Board operates on a quarterly meeting cycle every year together with two additional days for Board Strategy, and more often as required. The Committees meet more frequently with six to eight meetings per year. In addition to the quarterly meetings, the Board receives technical training in the form of in-depth and targeted education sessions that cover a variety of topics including Technology, Cyber, Operational Resilience, and Resolution.

The Board ensures it has the relevant knowledge and skills to fulfil its responsibilities and keep pace with growth and innovation. The Board undertakes an annual a skills assessment exercise and has used the resulting gap analysis to inform its succession planning and continuing education programme for the year ahead.

2. CGML Corporate Governance Report and Principal Risks (continued)

Principle 2 – Board Composition (continued)

The Board considers these exercises important in order to identify key areas for future opportunities and improvements. The Board of CGML is focused on being equipped to meet tomorrow's challenges, opportunities and emerging risks, the rapidly changing market, the evolution of competition, trends in its clients' business models and experience expectations, and the effect of new technologies.

Principle 3 – Director Responsibilities

Accountability

CGML adheres to and seeks to exceed the corporate governance standards expected from a regulated firm of its size and structure. It recognises that success is measured in large part by its ability to deliver a progressive and effective governance model that is both adaptive to the pace of change and robust enough to withstand the challenges it faces. The governance model also reflects the need to demonstrate influence and oversight of areas where the Board relies on other parts of the group to achieve the outcomes needed to deliver its own strategies. It requires the senior executives of CGML to design and operate an effective governance environment coupled with a strong culture of risk management and controls to support good decision-making.

To maintain a progressive and leading governance culture the Board will develop alongside the business it governs. As outlined in Principle 2, the Board welcomed the independent reviews for both board and executive governance throughout 2020 which helped benchmark and evaluate its performance and relevant skills, and assess its suitability to fulfil its duties towards its shareholder and key stakeholders. The Board expects executive management to undertake regular self-assessments for themselves, designed to support and enhance improvements and adopt a culture of continuous development.

The Board delegates authority for oversight of the day-to-day management of the Company to the UK Executive Committee which meets monthly. It is chaired by the Citi EMEA Chief Executive Officer and SMF 7 Group Entity Manager and membership includes the key UK Senior Managers. CGML also has a dedicated monthly management meeting, chaired by the CEO of CGML to discuss specific legal entity focused matters.

Committees

The Independent Non-Executive Directors are independent and have no material business or other relationships with the Company that might influence their independence or judgement. Certain governance responsibilities are delegated to other Board committees: Audit, Remuneration, Nomination and Risk. Each of these Board committees are chaired by Non-Executive Directors and have a separate charter, which include the authorities delegated to them by the Board.

Integrity of Information

The Board receives regular and timely information (at least monthly via calls or meetings with the CGML CEO on all key aspects of the business including its financial performance, risk management, control environment, market and competitive conditions, Citi Global and EMEA developments and global and local governance and regulatory priorities. CGML's management are responsible for the integrity of this information and individuals are provided with the necessary training to keep up to date with regulatory changes. The Company's financial statements are subject to an external audit by KPMG LLP on an annual basis, and controls are periodically reviewed by CGML's internal audit function. Other key information is prepared by the relevant internal function.

Opportunity

Long-term strategic opportunities are identified in the CGML Strategic and Financial Plan process which is reviewed, discussed and challenged by the Board annually.

2. CGML Corporate Governance Report and Principal Risks (continued)

Principle 4 – Opportunity and Risk

Risk

CGML's principal risk types arise from the nature of the services provided to its clients and include both financial and non-financial elements. The principal risk types identified by management and covered by CGML's Risk Management Framework are noted as follows:

- reputational risk;
- strategic risk;
- market risk;
- liquidity risk;
- credit risk (mainly in the form of counterparty credit risk);
- operational risk (including conduct risk); and
- compliance risk.

The Risk Committee ensures that the principal financial and non-financial risks and emerging risks are identified and managed appropriately and in a timely manner. The Committee meets at least quarterly and updates the risk register for any changes in underlying conditions. The Committee continues to refine and enhance the Company's Risk Management Framework and risk registers and works to ensure consistency across operations. The Risk Committee reports to the Board on a quarterly basis.

Responsibilities

The Board and the Risk Committee are responsible for ensuring that senior management consider the external factors and dependencies on group-wide initiatives that may impact CGML's strategic opportunities. CGML's most valuable resource is its staff, so it closely monitors the impact of its strategy on the capability and resources availability within its talent pool. Risks are managed and mitigation plans designed and executed using CGML's detailed Risk Management Framework. The key external factors that the Board monitors are as follows:

- Geopolitical and economic factors that impact growth opportunities and financial returns. CGML took steps to minimise client and market disruption that might arise as a result of the UK's withdrawal from the European Union and the direct and indirect consequences of COVID-19 and the conflict in Ukraine;
- Rapid technological development that presents opportunities to improve client service but also creates the potential for industry wide change and exposes CGML to high impact risk (Cyber, IT resilience, Data Management). Operations & Technology have a critical role to enable CGML both to enhance offerings and to protect against negative disruption and to manage a significant pace of change; and
- The global and local regulatory environment, which requires governance and a strong compliance function to have oversight and collaboration with the first line and is capable of managing multiple priorities across a range of regulatory initiatives, including the timely completion of remediation and targeted improvements, addressing LIBOR transition, the finalisation of Basel III, Operational Resilience Third Party and inter affiliate outsourcing and Climate Risks, amongst others.

Principle 5 – Remuneration

The Remuneration Committee aims to set remuneration at a level that will enable it to secure and retain executives who can deliver the Company's strategy.

The Remuneration Committee is responsible for making recommendations to the Board concerning the Company's remuneration strategy, recruitment framework and long-term incentive plans for senior executives. Pay is aligned with performance and taking into account fair pay and conditions across the Company's workforce.

2. CGML Corporate Governance Report and Principal Risks (continued)

Principle 5 – Remuneration (continued)

The Company completed its fifth annual UK Gender Pay Gap Report based on 2021 remuneration. These Reports have highlighted areas which the Company can improve on and the Company is continuing to take steps to reduce the gender pay gap. Citi have signed the UK's Women in Finance Charter, and committed to a target to achieve at least 30% female representation among its director and managing director level staff throughout EMEA by 2025. As of the date of the 2021 Report, it was at 26%, up from 19% in 2017. The 2021 Gender Pay Report was published ahead of the UK Government's April 2022 deadline.

In fulfilling its role, the Remuneration Committee has regard to the responsibilities set out under the PRA and FCA Remuneration Codes and takes into account, where applicable, relevant guidance and the long-term interests of shareholders, investors and other stakeholders in CGML.

Principle 6 – Stakeholders

As set out above in Principle 3, the Board is clear that progressive and effective governance is essential to deliver its purpose and to protect CGML and Citi's reputation and relationships with all its stakeholder community including clients, employees, shareholders, suppliers, regulators and the local communities in which it operates.

Details of our key stakeholders and our engagement with them are set out in our Section 172(1) Statement below and are incorporated into this statement.

As at 31 December 2021 CGML had 30 approved UK Senior Managers, of whom 3 were CGML Non-Executive Directors and 6 more CGML Executive Directors. CGML had 3 outgoing UK Senior Managers, subject to the final handover with the incoming UK Senior Manager.

Section 172(1) Statement

Section 172(1) of the Companies Act 2006 requires each Director of the Company to act in a way in which he/she considers, in good faith, would be most likely to promote the success of the Company for the benefit of its members as a whole, and in doing so have regard to a range of matters including:

- the likely consequences of any decision in the long-term;
- the interests of the Company's employees;
- the need to foster the Company's business relationships with suppliers, customers and others;
- the impact of the Company's operations on the community and the environment;
- the desirability of the Company maintaining a reputation for high standards of business conduct; and
- the need to act fairly as between the Company's members.

The Directors of the Company give careful consideration to the matters referred to in section 172(1) when discharging their legal duties. The Board believes in taking decisions for the long-term benefit of the Company and looks to safeguard the Company's reputation by upholding the highest standards of business conduct. Depending on the issue in question, the relevance of each stakeholder group and other relevant factors may vary. As such, the Board strives to understand the needs and priorities of each stakeholder group and the other factors relevant to the issue in question during its deliberations and as part of its decision-making.

Board members receive periodic refresher training on their legal duties and may seek advice about the implications of these duties at any time from our Company Secretary. New Directors are offered a comprehensive induction programme which includes information on their statutory duties.

2. CGML Corporate Governance Report and Principal Risks (continued)

Principle 6 – Stakeholders (continued)

To ensure the most efficient and effective approach, stakeholder engagement is led by Citigroup, in particular where matters are of group-wide significance or have an impact on Citigroup's reputation including our clients, shareholders, staff and global regulators.

The CGML Board considers and discusses information from across the organisation to help it understand the impact on CGML's operations and the interests and views of its key stakeholders. The Board also reviews strategy and financial performance as well as operational and financial risks and regulator priorities. The Board receives this information in advance of each quarterly meeting, during monthly calls with the CGML Chief Executive Officer and by holding an annual Strategy Day. The CGML Board receives regular reports from the Citigroup parent Board Non-Executive Director and from the Citigroup EMEA Regional CEO at its Board meetings.

Using all of the above actions, the Board has an overview of engagement with stakeholders which enables the Directors to comply with their legal duty under section 172 of the Companies Act 2006.

Key stakeholder engagement

Clients

The CGML Board receives regular reporting of client performance and themes, allowing an understanding and oversight of the direction of client sentiment. Citi performs a Voice of the Client survey which provides in-depth understanding of our corporate clients' needs and expectations, alongside regular client performance and service benchmarking, leveraging external reporting and analysis where appropriate. The businesses within CGML operate a globally coordinated client-centric sales and relationship management organisation focussed on generating profitable and responsible growth and building market share with some of the most important organisations across the globe.

Employees

CGML embraces Citi's mission of enabling growth and economic progress, while adhering to the highest ethical standards. We ask our colleagues to ensure their decisions pass three tests: they are in our clients' interests, create economic value, and are always systemically responsible. An informed and engaged workforce is critical to delivering positive outcomes for all our stakeholders. The physical and mental health and safety of CGML's employees and their families, as well as its clients and the communities it serves, are of the utmost importance. As the COVID-19 pandemic continued in 2021, CGML and Citi took proactive measures to support colleagues' well-being, while maintaining their ability to serve clients. As always, colleagues are encouraged to present their suggestions and views to CGML through various channels, including an employee representative body and the Voice of the Employee survey, the results of which are presented to the Board each year by Human Resources. The Board has requested and received presentations on areas such as employee resilience and mental health in response to identified areas of focus.

Suppliers

CGML works to maintain fair, resilient and professional working relationships with its suppliers. CGML has a well-established framework for the engagement with and on-going relationship management and controls relating to risks of its key suppliers, ensuring shared values in the conduct of their business. The Modern Slavery Act 2015 ("the Act") obliges the CGML Board to make an annual statement on the reasonable steps taken to ensure that its own operations and supply chains are free of human trafficking and modern slavery. CGML has made annual statements of this nature since the Act came into force. The Board reviews and challenges the due diligence which underpins the statement each year and is kept informed of any improvements made by Citigroup.

The information relating to the Modern Slavery Act, as required by the Modern Slavery Act 2015, will be published at https://www.citibank.co.uk/personal/home.do.

2. CGML Corporate Governance Report and Principal Risks (continued)

Key stakeholder engagement (continued)

Regulators

CGML maintains an open and regular engagement with regulators to ensure clarity and transparency over its strategy and plan, key risks and opportunities, and progress on ongoing initiatives. Regulatory engagement is maintained both at the Board as well as the Executive Management level to ensure regulatory requirements and expectations are consistently understood and met. Primary regulatory engagement for CGML is with the PRA/Bank of England and FCA supervisory teams and senior management, in addition to engaging with the CFTC and SEC internationally. Further, CGML is providing ongoing updates to the regulators on the impact of COVID-19 on its clients, markets, employees, financials, liquidity, risk measures and operational/technology capabilities and resilience.

Communities

In pursuit of Citi's mission, CGML is committed to enabling growth and progress in the communities where we operate. Citi is in regular dialogue with charities and non-governmental organisations (NGOs), as part of its philanthropic commitment and mission to support the communities in which it operates. Citi works closely with community partners to understand the issues local communities are facing so that it can respond appropriately by providing funding, volunteers or other support as required. Specifically Citi has a focus on supporting disadvantaged young people into employment whether they are from less privileged backgrounds, refugees, young people affected by youth violence or young people with disabilities. The CGML workforce dedicate time through the annual Global Community Day and the London Charity Partner programme, which in 2021, Citi raised over £100,000 for the Guide Dogs charity, in addition to supporting other Citi charitable initiatives in the UK and overseas. Many of these are also supported financially by the Citi Foundation including Career Ready and Teach First. Engagement with local communities allows CGML to understand better the needs and requirements of society enabling it to innovate for the future.

Environment

Citi recognises the importance of its environmental responsibilities, monitors its impact on the environment, and designs and implements policies to reduce any damage that might be caused by its activities. Initiatives designed to minimise CGML's impact on the environment include safe disposal of waste, recycling and reducing energy consumption. The Board has been actively engaged regarding the implementation of the CGML response to the Prudential Regulation Authority's Supervisory Statement on Climate Change SS3/19 on managing the risks from climate change. CGML continues to make progress on embedding the entity's approaches to strengthening governance, incorporating climate change into risk management frameworks, conducting scenario analysis, and enhancing disclosures for climate change-related risks.

Government and Policymakers

CGML engages regularly with a wide range of external stakeholders including policymakers, media, clients and NGOs. CGML follows Citigroup's approach that responsible corporate citizenship includes holding an ongoing dialogue with its stakeholders, and contributing insights, information and thought leadership towards the public policy environment that CGML operates within.

As part of Citi, CGML engages with policymakers both directly and as part of industry efforts, as a member of a number of financial services trade associations. As part of Citi, CGML complies with all relevant transparency requirements, at both the European Union and various individual country level. Details of Citi's entry in the EU's Transparency Register can be found at: https://ec.europa.eu/transparencyregister/public/consultation/displaylobbyist.do?id=00353757573-57.

2. CGML Corporate Governance Report and Principal Risks (continued)

Key stakeholder engagement (continued)

CGML takes its responsibilities as a corporate citizen seriously, using its corporate voice to take a stand on issues that matter to its clients, employees and other stakeholders. These range from a continued commitment to the Paris Agreement, to the support of immigrants from around the world in the workforce and in our communities, to the importance of pay equity. Part of meeting these commitments requires communicating actively with a wide range of stakeholders to inform them of what Citi and CGML is doing and engaging in dialogue to understand what more can be done. CGML is committed to increasing the transparency of its efforts on these issues, and supports Citi's efforts to supplement its annual Environment, Social and Governance Report with articles, reports, surveys, and other relevant perspectives throughout the year.

Decision making in action

The Board's approach to stakeholder engagement was illustrated during the transition of the European Government Bond business from CGML to Citibank Europe plc as part of the target operating model planning following the UK's withdrawal from the EU. The Board received regular updates from the UK Executive Committee and working groups set up within the firm to oversee and manage the project. The Board provided challenge and oversight particularly concerning the risk and financial impact on CGML. To ensure CGML remains a sustainable and profitable entity whilst enabling it to continue serving clients throughout the EEA with minimal disruption. The Board has continued to be actively engaged in target operating model planning throughout 2021 and into 2022.

3. Mission and Strategy

CGML's mission, in line with that of Citi, is to serve as a trusted partner to its clients by responsibly providing financial services that enable growth and economic progress. CGML's core activities are being a dealer, market maker and underwriter and providing advisory services. Whilst carrying out these activities, it ensures that actions are always in its clients' interests, create economic value and are systemically responsible.

The strategic priorities set out in CGML's 2021 - 2023 Strategic and Financial plan which was approved by the Board during the period are as follows:

- *Deliver client excellence as Citi's international broker-dealer.*

  CGML continues to maintain a strong client franchise and competitive position in the client segments, countries and products by capturing growth opportunities and through innovative electronic and digital offerings, despite volatile markets and geo-political uncertainties. CGML will continue to remain one of Citigroup's four major global booking and risk management hubs, serving international clients from its registered headquarters in the UK or its international subsidiaries and branches.

- *Improve infrastructure to drive resilience, efficiency and a great client experience.*

  CGML continues to maintain focus on investment in core platforms and infrastructure to enhance client experience through delivery of electronic and digital execution capabilities, improve stability and operational resilience, improve data quality and data insights, simplification and automation of manual processes, and strengthening of cyber and third party risk management. CGML's priorities remain aligned to Citi's objectives and CGML will continue to benefit from enhancements to operational and technology infrastructure capabilities.

- *Make strong governance and controls a cornerstone of CGML's success.*

  CGML has taken positive steps to strengthen the design, operations and effectiveness of the legal entity governance, both at the Executive and the Board levels. CGML remains committed to demonstrate and embed continuous improvements in the control environment, and strong and decisive governance. Active identification and timely remediation of underlying issues, analysis of root causes, establishment of compensating or preventative controls, and broader application of improvements remain key areas of focus.

3. **Mission and Strategy** (continued)

- *Attract, retain and develop talent and shape good culture and conduct.*

  CGML's priority is to be an employer of choice and to provide a great place to work. Commitment to Diversity and Inclusion is core to Citi's values. As part of Citi's pledge to the Women in Finance Charter, CGML has set a goal to increase the number of senior management roles held by women. These developments are further supported by wider diversity initiatives including measures to identify and retain high performing employees. CGML continues to focus on embedding a sustainable culture that encourages good conduct and high ethical and performance standards, and monitors positive momentum through the Voice of Employee survey results.

- *Deliver sustained future profitability and efficient management of financial and capital resources.*

  CGML continues to focus on sustainable returns, improved financial resource efficiency, and effective forward-assessment and management of its financial, capital and liquidity resources to support growth opportunities, and to ensure that it maintains adequate capital and liquidity both in business-as-usual activities and managing periods of stress.

In addition to the above key priorities, CGML will continue to ensure that its capital strategy and financial resources provide a strong foundation for meeting its current actual requirements while supporting strategic growth.

4. **Financial Highlights**

Key Financial Performance Metrics

	2021	2020
Operating Efficiency *(operating expense as a percentage of gross profit)*	88.1%	70.6%
Return on Assets *(Net income as a proportion of total assets)*	0.09%	0.20%
Return on Tangible Common Equity (TCE) *(Net income as a proportion of TCE)*	1.7%	5.8%
Return on Tier 1 Capital *(Net income as a proportion of Tier 1 capital)*	1.4%	5.1%

The year on year decrease in financial performance was a result of the substantial out-performance in 2020 driven by the high levels of client and trading activity and the market volatility surrounding the COVID-19 pandemic. 2021 performance metrics are more closely aligned with a pre-COVID-19 environment with the exception of returns on tangible common equity and Tier 1 capital. These returns reflect a decrease compared to 2019 (2.0% and 1.7% respectively) as a result of increased capital as part of the Company's 2021 capital plan.

4. Financial Highlights (continued)

4.1 Income Statement Summary

	2021 $ Million	2020 $ Million
Commission income and fees	1,470	1,128
Net dealing income	2,834	3,807
Interest receivable	280	267
Interest payable	(1,087)	(1,111)
Gross profit	**3,497**	**4,091**
Operating expenses	(3,082)	(2,889)
Impairment release /(loss) of investments	—	88
Other income and expenses	19	28
Operating profit on ordinary activities before taxation	**434**	**1,318**
Tax on profits on ordinary activities	(31)	(295)
Profit after taxation for the financial year	**403**	**1,023**

Gross Profit

Gross profit decreased by $594 million, a 15% decrease on 2020. In the first quarter of 2020, following the start of the COVID-19 pandemic, markets saw an increase in volatility resulting in a significant increase in trading activity. This led to all businesses across the Markets segment exceeding plan for the year. Furthermore a gain of $510 million was recognised in 2020 following the termination of long-term debt which was borrowed during peak market volatility and returned after volatility had subsided but while credit spreads remained wide. In contrast, while new variants of the virus led to some additional uncertainties in the market, the distribution of vaccines and easing of lockdowns were followed by an economic rebound resulting in 2021 gross profit largely aligning with plan and reverting to pre-COVID-19 levels. Gross profit in 2019 was $3,189 million, indicating a growth 10% over the two-year period with driven by growth in both Markets and BCMA.

Commission income and fees

Commission income and fees result from the BCMA business, from Equity Cash activity and from inter-company fees which are calculated on an arm's length basis. Uncertainty surrounding the pandemic in 2020 lead to a decrease in Mergers and Acquisition (M&A) activity, with a number of plans put on hold while the uncertainties remained. In 2021, however, M&A activity surpassed record levels as markets recovered and businesses looked to take advantage of the low interest rates which led to a $342 million increase.

Net Dealing Income

The foremost contributors to net dealing income were the Fixed Income and Equities businesses. Net dealing income declined by $973 million including a $544 million decrease on the prior year early termination of long-term debt with the remainder driven by the heightened levels of trading activity in 2020 as referenced above.

Interest Receivable and Payable

Interest receivable and payable mainly reflects income and expense from collateralised financing transactions measured at amortised cost. It also includes amounts paid relating to inter-company funding and subordinated debt. Interest receivable and payable remained largely in line with 2020. A decrease in interest payable as a result of lower subordinated debt following the increase in CGML's capital during 2021 was largely offset by interest payable due to increasing yields over 2021.

4. Financial Highlights (continued)

4.1 Income Statement Summary (continued)

Operating Expenses

Operating expenses were $3,082 million, an increase of $193 million compared to 2020, with the largest costs relating to compensation and benefits of $1,644 million (2020: $1,528 million). The increase in compensation and benefits was largely driven by increased headcount in CGML which increased by 347 over the year, particularly in risk and control.

In December 2020, the Company released the prior year impairment of its investment in Citigroup Global Markets Europe AG resulting in an $88 million gain in accordance with principal accounting policy 1(c). There were no subsequent impairment gains/(losses) of investments in 2021.

4.2 Balance Sheet

	31 December 2021 $ Million	31 December 2020 $ Million
Total Assets	451,281	506,059
Total Liabilities	422,762	485,292
Shareholders' funds	28,519	20,767

CGML's assets consist primarily of collateralised financing transactions, derivatives and trading inventory. Collateralised financing transactions include reverse repos and stock borrows; derivatives encompass interest rate, credit, equity and commodity derivatives; whilst bonds and equities form the largest categories of trading inventory. The Company's liabilities predominantly comprise collateralised financing transactions, derivatives and securities sold not yet purchased. The decline in assets and liabilities in 2021 was mainly driven by derivatives as increasing yields led to decreasing mark to market valuations on CGML's interest rate swaps.

Shareholders' funds were $28,519 million (31 December 2020: $20,767 million) which represented an increase of $7,752 million. During the year, the Company continued to execute on its capital strategy with an incremental increase of $5.5 billion in Common Equity Tier 1 (CET1) capital, and $2.0 billion increase in Tier 1 capital in the form of an Additional Tier 1 (AT1) Note. Furthermore, on 31 December 2021, the Company issued bonus shares to its immediate parent, Citigroup Global Markets Holdings Bahamas Limited, converting $18.5 billion in Capital reserves to Share capital. The remaining increase in shareholders' funds are driven by the profit for the period partially offset by coupon payments on the AT1 notes. Further details of the current period movements are presented in the Statement of Changes in Equity.

More detailed information about the composition of CGML's balance sheet, including analyses of its derivative and inventory holdings, can be found in the Balance Sheet and the Notes to the Accounts, in particular Note 15 'Financial assets and liabilities accounting classification and fair values', Note 14: 'Financial assets at fair value through profit or loss', and Note 13 'Derivatives'.

4. Financial Highlights (continued)

4.3 Regulatory Capital (unaudited)

CGML's regulatory capital position is summarised below.

	2021 $ Million	2020 $ Million
Capital resources		
Tier 1 capital	28,380	20,077
Tier 2 capital	2,600	4,600
Deductions	(3,037)	(1,200)
Total	**27,943**	**23,477**
Capital requirements (Pillar 1)		
Market risk	4,279	3,734
Credit risk	5,853	5,663
Operational risk	1,545	1,698
Large Exposures risk	336	21
Credit Valuation Adjustment (CVA) risk	379	398
Total	**12,392**	**11,514**
Excess capital over Pillar 1	**15,551**	**11,963**

Tier 1 capital encompasses tangible shareholders' funds. Tier 2 capital comprises long-term subordinated debt that is eligible for inclusion as capital. Deductions from capital include adjustments for the value of the defined benefit pension scheme, intangible assets, other valuation adjustments and certain securitisation positions. The increase in deductions compared to 2020 is driven by further investments in Citigroup Global Markets Europe AG (CGME).

Pillar 1 prescribes the minimum capital requirements for banks and investment firms under the Basel Capital Accord and the EU Capital Requirements Directive and Regulation (CRD IV package). In addition to Pillar 1 requirements, the PRA mandates a set of Pillar 2 regulatory capital standards which CGML is required to meet in its Individual Capital Guidance and certain additional capital buffers. CGML maintains a sufficiently strong and stable capital balance, which remained in excess of these minimum regulatory requirements throughout the year. Management monitors forecast and possible future capital and liquidity requirements and manages activity and resources accordingly to ensure CGML's capital maintains a surplus above self-imposed management action triggers are maintained.

4.4 External Environment

CGML's 2021 financial results were achieved against a backdrop characterised by a number of key themes: the continued spread of COVID-19 and its impact on economic and trade activity including increased volatility in financial markets, a low, yet gradually rising interest rate environment, continued economic uncertainty, a rise in geopolitical tension, and an increasingly competitive landscape.

The UK Gross domestic product (GDP) rebounded in 2021, growing at an estimated 7-8%, after shrinking by close to 10% in 2020. Global and UK activity returned to pre-pandemic levels towards the end of 2021, with the economic impact of the Omicron variant expected to be limited and of short duration. Unemployment levels continued to fall in the UK, following the closure of the furlough scheme. Global supply chain constraints and higher energy prices have led to an up-tick in price inflation in 2021. Twelve-month UK CPI (Consumer Price Index) rose to 5.4% in December, higher than the Bank of England's expectations. In December, the Bank of England's Monetary Policy Committee (MPC) voted to increase UK Bank rate by 0.15 percentage points, to 0.25% in an attempt to control rising prices.

4. Financial Highlights (continued)

4.4 External Environment (continued)

Overall, 2021 was a strong year for Equities trading and Investment Banking. Fixed Income trading revenues decreased and normalised against a very strong 2020. Interest-generating businesses continued to be impacted by a historically low interest rate environment.

5. 2022 Future Outlook

The Company continues to monitor the evolving landscape in relation to COVID-19, elevated levels of inflation, significant disruptions and volatility in financial market as a result of geo-political developments including recent military action of Russian forces into Ukraine which has escalated tensions between Russia and the U.S., NATO, the EU and the U.K and beyond.

The Company's ability to engage in activity with certain businesses in Russia and Ukraine is dependent in part upon whether such engagement is restricted under the financial and economic sanctions imposed by the U.S., the U.K., the EU and other countries commencing from 21 February 2022. Given the volatile and evolving situation and its impact on global financial markets and economic conditions, and its impact on the Company's businesses, the Company continues to monitor and manage the relevant exposures to mitigate risks as appropriate.

The Company has a stable business model that has proven its performance and resilience through the period of stress in the last two years and places it in a strong and sustainable position to benefit from opportunities for future growth. The Company plans to continue to grow its businesses offsetting the planned reduction in the European Government bonds portfolio over the coming years.

The external regulatory environment continues to evolve, notably for CGML this includes revisions to the Capital and Liquidity frameworks. These are expected to be introduced over time, starting in 2022.

6. LIBOR Transition Risk

LIBOR has historically been used as the interest rate benchmark to price or value a wide range of financial products. The Company recognises that the ongoing transition away from and discontinuance of LIBOR presents various risks and challenges that could significantly impact financial markets and market participants. 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. Accordingly, Citi, and by extension the Company, 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.

Citigroup established a LIBOR governance and implementation programme focused on identifying and addressing the LIBOR transition impacts to Citi's legal entities, clients, operational capabilities and legal and financial contracts, among others. The programme operates globally across Citi's businesses and functions. Citi also continued to engage with regulators, financial accounting bodies and others on LIBOR transition matters.

Moreover, the Company 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 require additional negotiation with counterparties. The Company's LIBOR transition efforts include, among other things, using alternative reference rates in certain newly issued financial instruments and products. Further, the Company has also been investing in its systems and infrastructure, as client activity moves away from LIBOR to alternative reference rates.

The LIBOR administrator ceased publication of non-USD LIBOR and one week and two-month USD LIBOR on a representative basis on 31 December 2021, with plans to cease publication of all other USD LIBOR tenors on 30 June 2023. In 2021, the Company also focused on remediating existing LIBOR contracts for which publication ceased on a representative basis on 31 December 2021. Substantially all of these contracts were remediated by 31 December 2021, and the Company continues to actively engage in and track the remediation of any remaining contracts after 31 December 2021.

7. Climate Risk

Climate change presents short-term and long-term risks to Citi and to its clients and customers, with the risks expected to increase over time. Climate risk refers to the risk of loss arising from climate change and is divided into physical risk and transition risk.

- Physical risk considers how chronic and acute climate change (e.g., increased storms, drought, fires, floods) can directly damage physical assets (e.g., real estate, crops) or otherwise impact their value or productivity.
- Transition risk considers how changes in policy, technology, and market preference to address climate change (e.g., carbon price policies, power generation shifts from fossil fuels to renewable energy) can lead to changes in the value of assets, commodities and companies.

Climate risk is an overarching risk that can act as a driver of other types of risk in the Citi risk taxonomy, such as credit risk from obligors exposed to high climate risk, reputational risk from increased stakeholder concerns about financing high carbon industries, and operational risk from physical climate risks to Citi's facilities.

Citi currently identifies climate risk as an "emerging risk" within its Risk Governance Framework. Emerging risks are risks or thematic issues that are either new to the landscape, or in the case of climate risk, existing risks that are rapidly changing or evolving in an escalating fashion, which are difficult to assess due to limited data or other uncertainties.

With the increased importance and focus on climate risk, Citi has continued to enhance its governance of climate risk and integrate climate considerations into the priorities of Citigroup's and CGML's Board of Directors and senior management.

Citi, and CGML, have invested significantly in climate risk management, including a global and centralised team in Risk Management working exclusively on climate risk.

Citi has established a senior-executive level Climate Risk Steering Group to provide guidance, feedback and support with regards to the integration of climate risk management. This group receives regular updates from the Climate Risk Working Group which includes representation from UK legal entities and comprises of workstreams focused on: Scenario Analysis, Climate Risk Identification and Assessments and Data Strategy.

Citi first established its Environmental and Social Risk Management (ESRM) Policy in 2003, as part of Citi's broader credit risk management policy, applicable to all Citi entities globally. The ESRM Policy provides the framework for how Citi identifies, mitigates, and manages the potential environmental and social risks (including climate risks) associated with clients' activities that could lead to credit or reputation risks to the firm. It guides how Citi evaluates lending, underwriting and advisory in environmentally sensitive and/or high-carbon sectors, and presents opportunities for Citi to engage clients on solutions to thematic risks.

In March 2021, Citi committed to net zero greenhouse gas (GHG) emissions by 2050, which includes net zero associated with our financing by 2050 and net zero for its own operations by 2030. As part of this commitment, Citi released our initial plan for how we intend to achieve net zero by 2050, with a focus on the Energy and Power sectors. As a Citi wide commitment, CGML will participate in Citi's Net Zero implementation, and Citi has already taken significant steps to reduce its carbon footprint in the UK, such as installing solar panels on its UK data centre in 2021.

7. **Climate Risk** (continued)

Climate risk is on the regular agenda of the CGML Board and CGML Board Risk Committee. To ensure appropriate governance around financial risks from climate change, the CGML Board continues to have oversight of the integration of climate risk within CGML and receive frequent progress updates from management.

By order of the Board

J D K Bardrick
Director and Chief Executive Officer

27 April 2022

Incorporated in England and Wales
Registered office: Citigroup Centre, Canada Square, Canary Wharf, London E14 5LB
Registered Number: 01763297

CITIGROUP GLOBAL MARKETS LIMITED

DIRECTORS' REPORT

for the year ended 31 December 2021

The Directors present their Report and the audited financial statements of CGML for the year ended 31 December 2021.

Going concern basis

The financial statements are prepared on a going concern basis taking into account CGML's existing capital and liquidity resources and the level of reliance placed on support from Citi, CGML's ultimate parent. The Directors acknowledge the risk that extreme circumstances might adversely impact CGML's ability to continue trading and are satisfied that CGML has the resources to continue in business for the foreseeable future. In making this assessment, the Directors have considered a wide range of information relating to present and future conditions. As CGML is part of the Citigroup, the risks that apply to the parent also apply to all subsidiaries within the group including CGML. The risk factors impacting Citigroup Inc. are described in its 2021 annual report on form 10-K, which can be found at http://www.citigroup.com/citi/investor/sec.htm.

The Directors have reviewed the capital, liquidity and financial position of the Company including future capital, liquidity and financial plans covering a period of at least 12 months from the date of approval of these financial statements.

To assess any potential impact on the Company, the Directors reassessed the components of capital, liquidity and the financial position of the Company and have concluded that the going concern basis is still appropriate. The assessment was completed with reference to CGML's continued stress testing processes within under its Internal Capital Adequacy Assessment Process (ICAAP) and Internal Liquidity Adequacy Assessment Process (ILAAP).

CGML continues to monitor the key risks for its Liquidity and Capital position including the impact of the conflict in Ukraine and the subsequent sanctions on Russia and the Company has shown that it would maintain sufficient Capital and Liquidity under a hypothetical scenario stressing energy commodity prices that could result. The extent of the future impacts for CGML of these events, along with those of the COVID 19 pandemic, remains uncertain but may include higher inflation or interest rates and financial market volatility and the Company continues to consider as part of its ongoing evaluations.

Based on the above assessment, the Directors are confident that the Company will have sufficient funds to continue to meet its liabilities as they fall due for at least 12 months from the date of approval of the financial statements and therefore, have prepared the financial statements on a going concern basis. Further information relevant to this assessment is provided in the following sections of these financial statements:

- the principal activities, strategic direction and challenges and uncertainties are described in the Strategic Report on pages 1 to 18;
- a financial summary, including the income statement and statement of financial position, is provided in the financial results section on pages 29 to 32; and
- objectives, policies and processes for managing market, liquidity, credit and operational risk, and CGML's approach to capital management and allocation, are described in Note 29 'Financial instruments and risk management', starting on page 85.

In addition to the going concern basis, Citigroup Inc. continues to provide confirmation that it will provide sufficient funding to the Company to ensure that it maintains a sound financial situation and is in a position to meet its debt obligations for the foreseeable future.

Dividends

During the year CGML paid no dividends on its ordinary shares (2020: $nil).

CITIGROUP GLOBAL MARKETS LIMITED

DIRECTORS' REPORT

for the year ended 31 December 2021

Information included in the Strategic Report

CGML has elected to include information on financial risk management as per Schedule 7.6(1)(a) & (b) of the "Large and Medium-sized Companies and Groups Regulations 2008" in the Strategic Report as the Directors consider financial risk management to be of strategic importance to CGML. Further details about financial risk management are provided in Note 29 'Financial instruments and risk management.'

For the year ended 31 December 2021, the Company has applied the Wates Corporate Governance Principles for Large Private Companies (the Principles) (as published by the Financial Reporting Council in December 2018 and which are available on its website). Our corporate governance report, describing how CGML has applied the provisions of the Principles over the past year is presented in the Strategic Report in section 2. CGML Corporate Governance Report and Principal Risks, including employee engagement disclosure under the Section 172(1) Statement.

The Strategic Report also incorporates a discussion of likely future business developments, while important events affecting the Company since the end of the financial year are described in Note 34 'Events after the reporting period'. A summary of the Company's overseas branches and subsidiaries can be found in the Introduction to the Strategic Report.

Statement of directors' responsibilities in respect of the Strategic Report, the Directors' Report and the financial statements

The Directors are responsible for preparing the Annual Report, the Strategic Report, the Directors' Report and the financial statements in accordance with applicable law and regulations.

Company law requires the Directors to prepare financial statements for each financial year. Under that law, they have elected to prepare the financial statements in accordance with UK-adopted international accounting standards and applicable law.

Under company law the Directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Company and of the profit or loss of the Company for that period. In preparing these financial statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable, relevant and reliable;
- state whether they have been prepared in accordance with UK-adopted international accounting standards;
- assess the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and
- use the going concern basis of accounting unless they either intend to liquidate the Company or to cease operations, or have no realistic alternative but to do so.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company's transactions and disclose with reasonable accuracy at any time the financial position of the Company and enable them to ensure that the financial statements comply with the Companies Act 2006. They are responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error, and have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the Company and to prevent and detect fraud and other irregularities.

The Directors are responsible for the maintenance and integrity of the corporate and financial information included on Citi's website. Legislation in the UK governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

CITIGROUP GLOBAL MARKETS LIMITED

DIRECTORS' REPORT

for the year ended 31 December 2021

Directors

The Directors who held office during the year ended 31 December 2021 and since year end were:

Non-Executive
C Ardalan (Chairman, resigned on 4 November 2021)
S J Clark (appointed on 5 February 2021)
W M N Fall (appointed on 5 February 2021)
R F Goulding (resigned on 29 January 2021)
J P Moulds (appointed on 5 February 2021)
D L Taylor*
A R Wynaendts (appointed on 22 January 2021, resigned on 19 November 2021)

Executive
L Arduini
J D K Bardrick
D Jain
F M Mannion**
Z V Wimborne
A-M Tassell

* D L Taylor resigned as a Non-Executive Director with effect from 26 April 2022.
** F M Mannion resigned as an Executive Director with effect from 31 March 2022.

Directors' indemnity

Throughout the year and at the date of this report the Company is party to a group-wide indemnity policy which benefits all of its current directors and is a qualifying third party indemnity provision for the purpose of section 236 of the Companies Act 2006.

Employment of disabled people

CGML is committed to a policy of recruitment and promotion on the basis of aptitude and ability without discrimination of any kind. Applications for employment by disabled persons are fully and fairly considered having regard to the aptitudes and abilities of each applicant. Efforts are made to enable any employees who become disabled during employment to continue their careers within CGML. Training, career development and promotion of disabled persons are, as far as possible, identical to those applicable to other employees who are not disabled.

Political contributions

The Company made no political contributions or incurred any political expenditure during the year (2020: $nil).

Sustainable Operations at CGML

CGML, as part of Citigroup Inc., has been measuring its environmental footprint for two decades and began reporting on its direct operational impacts in 2002. In 2021, Citi continued its progress to reduce its carbon footprint by continuing to use 100% renewable electricity across its facilities globally. 2021 was a challenging year because of the COVID-19 pandemic continuing to disrupt normal operations but efforts were made to ensure that energy use was minimised on site and that carbon emissions were reduced.

To build on its existing success and reduce its operational footprint further, Citi is committed to the following goals for increasing its energy efficiency and reducing GHG emissions by 2025, from a 2010 baseline:

- a 45% reduction in location-based GHG emissions (CO2e);
- a 40% reduction in energy consumption and maintain 100% renewable electricity sourcing; and
- certifying 40% of floor area to be LEED, WELL or equivalent standard, with a focus on Citi owned building to operate at the highest level of sustainability.

Sustainable Operations at CGML (continued)

In addition to these 2025 reduction targets, in March 2021 Citi announced its commitment to net zero emissions for its global operations by 2030, which will include Scope 1 and 2 emissions. Citi is currently evaluating its emissions inventory among all Scope 3 categories to determine which are material and which it will be able to influence. This exercise will determine the areas of our supply chain that will be included in our net zero operations emissions target.

Citi reports Scope 1, Scope 2 and Scope 3 Business Travel GHG emissions in both its Environmental Impact Report and its CDP response. Citi's global energy consumption and GHG emissions can be found in the annual Environmental, Social and Governance Report. Citi's GHG emissions and environmental data are verified and assured by SGS, a leading third-party inspection, verification, testing and certification company.

Streamlined Energy and Carbon Reporting

The following tables present CGML's estimated energy consumption, greenhouse gas emissions and chosen intensity metrics for its UK-based operations for the 2020 and 2021 financial years:

Energy Consumption	**2021**	**2020**
Energy (MWh)	51,305	47,034

GHG Emissions

Scope	**Source**	**Unit**	**2021**	**2020**
1	Direct	tCO2e	4,463	3,021
2	Indirect – Location-based	tCO2e	5,735	6,157
	Indirect – Market-based	tCO2e	—	—
3	Commercial air & rail travel	tCO2e	638	1,585
	Employee expensed car mileage	tCO2e	—	4
Total	**Scope 1, 2 (location) & Scope 3 Business Travel**	**tCO2e**	**10,837**	**10,768**
	Scope 1, 2 (market) & Scope 3 Business Travel	**tCO2e**	**5,102**	**4,610**

Intensity Ratio*	**2021**	**2020**
tCO2e/Sq. Ft**	0.027	0.017
tCO2e/FTE	2.816	2.913

* these intensity metrics have been calculated using Scope 1 & 2 (location) emissions

** calculated using Citi's total Scope 1 & 2 carbon footprint from the group's UK portfolio

CGML's emissions are calculated in line with the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (revised edition). The boundaries of the GHG inventory are defined using the operational control approach and cover the emissions the Company is responsible for across Scope 1, 2 and Scope 3 business travel. The emissions are calculated using the emissions factors for 2020 and 2021 published by the Department for Business, Energy & Industrial Strategy.

Citi gathers data from its operations on an ongoing basis, with primary evidence sourced from office managers and technical team. Where Citi pay for occupancy via service charges and the share of consumption is not known, consumption is calculated by benchmarking the energy/square foot against our global portfolio. As a number of Citi-owned subsidiaries occupy the same office spaces and make use of data centres, the figures presented have been calculated using CGML's UK headcount pro-rata to the Citi UK headcount. Citi purchase 100% renewable electricity in the UK through green tariffs for electricity directly purchased. Where electricity is obtained in leased properties from landlords, guarantee of origin certificates are purchased for the equivalent amount used.

Sustainable Operations at Citigroup Global Markets Limited (continued)

***Streamlined Energy and Carbon Reporting** (continued)*

The continued impact of COVID-19 restrictions influenced employee travel where CGML saw a reduction in its Scope 3 business travel. As part of the reporting for 2021 we have also included associated fuel consumption emissions which were not reported for 2020, though this is not material in the total amount of energy consumed. Additionally, CGML's energy consumption and resultant emissions increased between 2020 and 2021. This is highlighted in table above under Scope 1 emissions and is a result of an increase in the running hours of the CHP plant.

Energy efficiency in action

The main sources of CGML's operations are from the running of data centres, offices and business travel of employees travelling for work. Whether undertaking new construction or renovating existing buildings, Citi prioritise efficiency and sustainability to minimise the environmental impact of its facilities. The below highlights the energy efficiency actions that were undertaken in 2021.

In the Citigroup Centre 1 and Citigroup Centre 2 buildings:

- Installation of an analytics software "building analytics' which monitors every asset in the building assessing whether it's running according to design/operational requirements and sending alerts to the engineering team on the specific asset that is not performing in line with expectations.
- The chilled water temperature was raised by 1.5 degrees.
- Mothballed empty floors, isolating chilled water, tech rooms, variable air volume boxes and air compartment units.

In the Riverdale Data Centre:

- Solar photovoltaic installed to supply energy for lighting.
- Temperature monitoring system called "Ekkosense" installed in the data hall on level 4 to monitor temperature at server height and send feedback to the computer room air conditioning units to adjust accordingly.

Events after the reporting period

The recent action of Russian military forces and support personnel in Ukraine has escalated tensions between Russia and the U.S., NATO, the EU and the U.K. Certain jurisdictions have imposed, and are likely to impose material additional, financial and economic sanctions and export controls against certain Russian entities and/or individuals.

Commencing from the week of 21 February 2022, the U.S., the U.K., and the EU each imposed packages of financial and economic sanctions that, in various ways, constrain transactions with numerous Russian entities and individuals; transactions in Russian sovereign debt; and investment, trade, and financing to, from, or in certain regions of Ukraine.

The Company's ability to engage in activity with certain consumer and institutional businesses in Russia and Ukraine or involving certain Russian or Ukrainian businesses and customers is dependent in part upon whether such engagement is restricted or prohibited under any current or expected U.S., EU, U.K. or other countries' sanctions and laws.

Sanctions and export controls, as well as any actions by Russia, could further adversely affect the Company's business activities and customers in and from Russia and Ukraine. Moreover, actions by Russia, and any further measures taken by the U.S. or its allies, could have negative impacts on regional and global financial markets and economic conditions. The Company continues to monitor the potential impacts from the tensions and conflict in order to manage and mitigate its exposures and risks.

Events after the reporting period (continued)

Furthermore, the geopolitical developments have had a severe impact on commodity markets, particularly across oil and gas, as prices have risen dramatically during the first quarter of 2022. To date there has been no material adverse impact to the Company as a result. The Company continues to assess the material risks and the impact of commodity prices on its clients and businesses.

At the date on which these financial statements were approved, there were no other significant events affecting the Company since the year end.

Disclosure of information to auditors

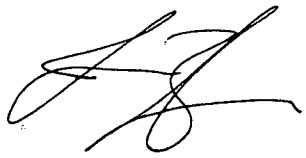
In accordance with section 418 of the Companies Act 2006 and subject to all the provisions of section 418, the Directors who held office at the date of approval of this Directors' Report confirm that:

- so far as each is aware, there is no relevant audit information of which the Company's Auditor is unaware; and
- each Director has taken all the steps that he/ she ought to have taken as a Director to make himself/ herself aware of any relevant audit information and to establish that the Company's Auditor is aware of that information.

Auditors

In accordance with Section 487 of the Companies Act 2006, the auditor will be deemed to be reappointed a KPMG LLP will therefore continue in office.

By order of the Board.



J D K Bardrick
Director and Chief Executive Officer

27 April 2022

Incorporated in England and Wales
Registered office: Citigroup Centre, Canada Square, Canary Wharf, London E14 5LB
Registered Number: 01763297

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF CITIGROUP GLOBAL MARKETS LIMITED

Opinion

We have audited the financial statements of Citigroup Global Markets Limited ("the Company") for the year ended 31 December 2021 which comprise the Income Statement, Statement of Comprehensive Income, Statement of Changes in Equity, Balance sheet, Statement of Cash Flows, and related notes, including the accounting policies in note 1.

In our opinion the financial statements:

- give a true and fair view of the state of the Company's affairs as at 31 December 2021 and of its profit for the year then ended;
- have been properly prepared in accordance with UK adopted international accounting standards; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities are described below. We have fulfilled our ethical responsibilities under, and are independent of the Company in accordance with, UK ethical requirements including the FRC Ethical Standard, as applied to other entities of public interest. We believe that the audit evidence we have obtained is a sufficient and appropriate basis for our opinion.

Going concern

The Directors have prepared the financial statements on the going concern basis as they do not intend to liquidate the Company or to cease its operations, and as they have concluded that the Company's financial position means that this is realistic. They have also concluded that there are no material uncertainties that could have cast significant doubt over its ability to continue as a going concern for at least a year from the date of approval of the financial statements ("the going concern period").

We used our knowledge of the Company, its industry, and the general economic environment to identify the inherent risks to its business model, including potential forward looking risks arising from the geopolitical tensions, and analysed how those risks might affect the Company's financial resources or ability to continue operations over the going concern period. The risks that we considered most likely to adversely affect the Company's available financial resources over this period were:

- the availability of funding and liquidity in the event of market wide and idiosyncratic stresses;
- the impact on regulatory capital requirements in the event of an increase in financial instrument price volatility or risk due to market-wide stress; and
- the impact of the geopolitical tensions due to market-wide stress.

We considered whether these risks plausibly affect the liquidity in the going concern period by assessing the Directors' sensitivities over the level of available financial resources indicated by the Company's financial forecasts taking account of severe, but plausible adverse effects that could arise from these risks individually and collectively.

Our procedures also included:

- Critically assessing assumptions in severe, but plausible scenarios relevant to liquidity and capital.. We have also assessed whether forecasts of the income statement and balance sheet are internally consistent and are consistent with our knowledge of the entity and the sector in which it operates.
- We evaluated the achievability of the actions the Directors consider they would take to improve the position should the risks materialise, which included seeking additional capital from the parent, taking into account the extent to which the Directors can control the timing and outcome of these.

We considered whether the going concern disclosure in note 1(a) to the financial statements gives a full and accurate description of the Directors' assessment of going concern, including the identified risks and dependencies.

Our conclusions based on this work:

- we consider that the Directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate;
- we have not identified, and concur with the Directors' assessment that there is not, a material uncertainty related to events or conditions that, individually or collectively, may cast significant doubt on the Company's ability to continue as a going concern for the going concern period; and
- we found the going concern disclosure in note 1(a) to be acceptable.

However, as we cannot predict all future events or conditions and as subsequent events may result in outcomes that are inconsistent with judgements that were reasonable at the time they were made, the above conclusions are not a guarantee that the Company will continue in operation.

Fraud and breaches of laws and regulations – ability to detect

Identifying and responding to risks of material misstatement due to fraud

To identify risks of material misstatement due to fraud ("fraud risks") we assessed events or conditions that could indicate an incentive or pressure to commit fraud or provide an opportunity to commit fraud. Our risk assessment procedures included:

- Enquiring of Directors, the Audit Committee, Internal Audit and inspection of policy documentation as to the Company's high-level policies and procedures to prevent and detect fraud, including the internal audit function, and the Company's channel for "whistleblowing", as well as whether they have knowledge of any actual, suspected or alleged fraud.
- Reading Board, Audit Committee and Risk Committee minutes.
- Using analytical procedures to identify any unusual or unexpected relationships.
- Using our own forensic specialists to assist us in identifying fraud risks associated with journals.

We communicated identified fraud risks throughout the audit team and remained alert to any indications of fraud throughout the audit.

As required by auditing standards, and taking into account our overall knowledge of the control environment, we perform procedures to address the risk of management override of controls, in particular the risk that the Company's management may be in a position to make inappropriate accounting entries and the risk of bias in accounting estimates and judgements such as valuation of hard to price financial instruments. On this audit we do not believe there is a fraud risk related to revenue recognition because income is automatically calculated by IT applications and there is no manual intervention which limits the opportunity for management to commit fraud through the manipulation of revenue.

We also identified a fraud risk related to existence and accuracy of unconfirmed derivatives and valuation of hard to price financial instruments in response to possible pressures to meet profit targets.

In determining the audit procedures we took into account the results of our evaluation and testing of the operating effectiveness of some of the Company-wide fraud risk management controls.

We performed procedures including:

- Identifying journal entries and other profit and loss adjustments based on risk criteria and comparing the identified entries to supporting documentation. These included those posted by senior finance management, those posted and approved by the same user and those posted to unusual accounts.
- Evaluated the business purpose of transactions resulting in significant day 1 P&L.
- Assessing significant accounting estimates relating to valuation of hard to price financial instrument for bias.
- Incorporating an element of unpredictability in the selection of the nature, timing and extent of audit procedures to be performed, including:
  - increasing the extent of substantive procedures performed on significant accounts
  - selecting items for testing that have lower amounts or are otherwise outside customary selection parameters

Identifying and responding to risks of material misstatement due to non-compliance with laws and regulations

We identified areas of laws and regulations that could reasonably be expected to have a material effect on the financial statements from our general commercial and sector experience, through discussion with the Directors (as required by auditing standards), inspection of the Company's regulatory and legal correspondence and discussed with the Directors the policies and procedures regarding compliance with laws and regulations.

As the Company is regulated, our assessment of risks involved gaining an understanding of the control environment including the entity's procedures for complying with regulatory requirements.

We communicated identified laws and regulations throughout our team and remained alert to any indications of non-compliance throughout the audit.

The potential effect of these laws and regulations on the financial statements varies considerably.

Firstly, the Company is subject to laws and regulations that directly affect the financial statements including financial reporting legislation (including related companies legislation), distributable profits legislation and taxation legislation and we assessed the extent of compliance with these laws and regulations as part of our procedures on the related financial statement items.

Secondly, the Company is subject to many other laws and regulations where the consequences of non-compliance could have a material effect on amounts or disclosures in the financial statements, for instance through the imposition of fines or litigation or the loss of the Company's licence to operate. We identified the following areas as those most likely to have such an effect: regulatory capital and liquidity, money laundering, sanctions lists and financial crime, market abuse regulations, conduct issues, certain aspects of company legislation recognising the financial and regulated nature of the Company's activities. Auditing standards limit the required audit procedures to identify non-compliance with these laws and regulations to enquiry of the Directors and other management and inspection of regulatory and legal correspondence, if any. Therefore, if a breach of operational regulations is not disclosed to us or evident from relevant correspondence, an audit will not detect that breach.

Context of the ability of the audit to detect fraud or breaches of law or regulation

Owing to the inherent limitations of an audit, there is an unavoidable risk that we may not have detected some material misstatements in the financial statements, even though we have properly planned and performed our audit in accordance with auditing standards. For example, the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely the inherently limited procedures required by auditing standards would identify it.

In addition, as with any audit, there remained a higher risk of non-detection of fraud, as these may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls. Our audit procedures are designed to detect material misstatement. We are not responsible for preventing non-compliance or fraud and cannot be expected to detect non-compliance with all laws and regulations.

Strategic report and Directors' report

The Directors are responsible for the Strategic report and the Directors' report. Our opinion on the financial statements does not cover those reports and we do not express an audit opinion thereon.

Our responsibility is to read the Strategic report and the Directors' report and, in doing so, consider whether, based on our financial statements audit work, the information therein is materially misstated or inconsistent with the financial statements or our audit knowledge. Based solely on that work:

- we have not identified material misstatements in the Strategic report and the Directors' report;
- in our opinion the information given in those reports for the financial year is consistent with the financial statements; and
- in our opinion those reports have been prepared in accordance with the Companies Act 2006.

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF CITIGROUP GLOBAL MARKETS LIMITED

Matters on which we are required to report by exception

Under the Companies Act 2006, we are required to report to you if, in our opinion:

- adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of Directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

We have nothing to report in these respects.

Directors' responsibilities

As explained more fully in their statement set out on page 20, the Directors are responsible for: the preparation of the financial statements and for being satisfied that they give a true and fair view; such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error; assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and using the going concern basis of accounting unless they either intend to liquidate the Company or to cease operations, or have no realistic alternative but to do so.

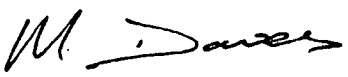
Auditor's responsibilities

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue our opinion in an auditor's report. Reasonable assurance is a high level of assurance, but does not guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

A fuller description of our responsibilities is provided on the FRC's website at www.frc.org.uk/auditorsresponsibilities.

The purpose of our audit work and to whom we owe our responsibilities

This report is made solely to the Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the Company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Company and the Company's members, as a body, for our audit work, for this report, or for the opinions we have formed.



Matthew Davies (Senior Statutory Auditor)
for and on behalf of KPMG LLP, Statutory Auditor
Chartered Accountants
15 Canada Square
London E14 5GL
27 April 2022

CITIGROUP GLOBAL MARKETS LIMITED

INCOME STATEMENT

for the year ended 31 December 2021

	Notes	2021 $ Million	2020 $ Million
Commission income and fees	4	1,470	1,128
Net dealing income	6	2,834	3,807
Interest receivable	5	280	267
Interest payable	5	(1,087)	(1,111)
Gross profit		3,497	4,091
Operating expenses	7	(3,082)	(2,889)
Impairment of investments in subsidiary	20	—	88
Net finance income on pension	8	7	9
Other income		12	19
Operating profit on ordinary activities before taxation		434	1,318
Tax on profits on ordinary activities	11	(31)	(295)
Profit after taxation for the financial year		403	1,023

The accompanying notes on pages 34 to 108 form an integral part of these financial statements.

CITIGROUP GLOBAL MARKETS LIMITED

STATEMENT OF COMPREHENSIVE INCOME

for the year ended 31 December 2021

	Notes	2021 $ Million	2020 $ Million
Profit after taxation for the financial year		403	1,023
Other Comprehensive Income			
Items that will not be reclassified subsequently to profit or loss:			
Gross gains/(losses) on remeasurement of defined benefit pension asset	8	99	(32)
Deferred tax (charge)/benefit associated with remeasurement of pension asset	8	(27)	9
Deferred tax charge associated with rate change on remeasurement of pension asset	8	(31)	(9)
Gains/(losses) on debt valuation adjustment (DVA) attributed to the change in credit risk		21	(104)
Deferred tax (charge)/benefit associated with loss on DVA		(6)	28
Deferred tax benefit associated with rate change on DVA		11	2
Total other comprehensive income/(expense)		67	(106)
Total comprehensive gain for the financial year		470	917

The net movement in the Statement of Comprehensive Income in respect of the pension scheme reflects changes in the actual and expected returns on scheme assets and liabilities and the related tax impact associated with the balance sheet valuation of the defined pension asset.

The accompanying notes on pages 34 to 108 form an integral part of these financial statements.

CITIGROUP GLOBAL MARKETS LIMITED

STATEMENT OF CHANGES IN EQUITY

for the year ended 31 December 2021

	Notes	Share Capital $ Million	Other equity instruments $ Million	Capital reserve $ Million	Equity reserve $ Million	Retained earnings $ Million	Total $ Million
At 1 January 2020		**1,500**	**2,300**	**10,999**	**1,218**	**1,954**	**17,971**
Profit after taxation for the year						1,023	1,023
Gross losses on remeasurement of defined benefit pension asset	8	—	—	—	—	(32)	(32)
Deferred tax benefit associated with remeasurement of pension asset		—	—	—	—	9	9
Deferred tax loss associated with rate change on remeasurement of pension asset		—	—	—	—	(9)	(9)
Loss on debt valuation adjustment (DVA)		—	—	—	—	(104)	(104)
Tax benefit associated with gains on DVA		—	—	—	—	28	28
Tax benefit associated with rate change on DVA		—	—	—	—	2	2
Total comprehensive expense		—	—	—	—	(106)	(106)
Share based payment transactions	9	—	—	—	62	—	62
Deferred tax charge associated with share based payment transactions		—	—	—	(16)	—	(16)
Capital contribution	28	—	—	2,000	—	—	2,000
Dividend on other equity instruments		—	—	—	—	(167)	(167)
At 31 December 2020		**1,500**	**2,300**	**12,999**	**1,264**	**2,704**	**20,767**
Profit after taxation for the year		—	—	—	—	403	403
Gross gains on remeasurement of defined benefit pension asset	8	—	—	—	—	99	99
Deferred tax loss associated with remeasurement of pension asset		—	—	—	—	(27)	(27)
Deferred tax loss associated with rate change on remeasurement of pension asset		—	—	—	—	(31)	(31)
Gain on debt valuation adjustment (DVA)		—	—	—	—	21	21
Tax loss associated with gains on DVA		—	—	—	—	(6)	(6)
Tax benefit associated with rate change on DVA		—	—	—	—	11	11
Total comprehensive income		—	—	—	—	67	67
Share based payment transactions	9	—	—	—	(3)	—	(3)
Capital contribution	28	—	—	5,500	—	—	5,500
Conversion of Capital reserve into Share capital	28	18,499	—	(18,499)	—	—	—
Other equity instruments issued	28	—	2,000	—	—	—	2,000
Dividend on other equity instruments		—	—	—	—	(195)	(195)
Loss on debt valuation adjustment (DVA) disposal		—	—	—	—	(28)	(28)
Tax benefit associated with loss on DVA disposal		—	—	—	—	8	8
At 31 December 2021		**19,999**	**4,300**	**—**	**1,261**	**2,959**	**28,519**

The other equity instruments relate to Additional Tier 1 notes. Further information is included in Note 28 'Capital and reserves'. The capital reserve includes capital contributions from the parent company, which are distributable. The Company received an additional $5.5 billion in capital contribution during the year. The equity reserve includes the fair value movement of the share based incentives issued, and other fair value movements captured in equity.

The accompanying notes on pages 34 to 108 form an integral part of these financial statements.

CITIGROUP GLOBAL MARKETS LIMITED

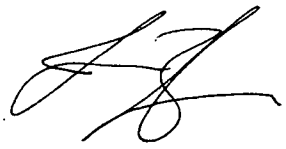
BALANCE SHEET

for the year ended 31 December 2021

	Notes	31 December 2021 $ Million	31 December 2020 $ Million	31 December 2019 $ Million
Assets				
Financial assets at amortised cost				
– cash at bank	12	8,463	5,505	3,610
– collateralised financing transactions	15	76,862	76,864	54,766
Financial assets mandatorily at fair value through profit or loss				
– derivatives	13	157,281	213,918	207,941
– inventory	14	64,751	73,752	59,498
– equity securities held for investment	16	106	99	71
Financial assets designated at fair value through profit or loss	13	81,701	77,331	53,309
Investments in subsidiary and related undertakings	20	3,830	2,125	1,399
Pension asset	8	547	449	458
Other assets	18	57,740	56,016	46,226
Total Assets		**451,281**	**506,059**	**427,278**
Liabilities and Equity				
Financial liabilities at amortised cost				
– bank loans and overdrafts	15	7,201	7,347	8,594
– collateralised financing transactions	15	63,067	75,922	51,267
Financial liabilities mandatorily at fair value through profit or loss				
– derivatives	13	161,797	229,445	222,664
– securities sold but not yet purchased	15	65,997	56,641	40,013
Financial liabilities designated at fair value through profit or loss	15	69,388	63,864	34,129
Other liabilities	23	46,712	41,473	42,540
Subordinated loans	27	8,600	10,600	10,100
Total Liabilities		**422,762**	**485,292**	**409,307**
Capital and reserves				
Called up share capital	28	19,999	1,500	1,500
Other equity instruments	28	4,300	2,300	2,300
Capital reserve	28	—	12,999	10,999
Retained earnings and other reserves		4,220	3,968	3,172
Shareholders' funds		**28,519**	**20,767**	**17,971**
Total Liabilities and Shareholders' Funds		**451,281**	**506,059**	**427,278**

The accompanying notes on pages 34 to 108 form an integral part of these financial statements.

The financial statements on pages 29 to 108 were approved by the Directors on 27 April 2022 and were signed on their behalf by:



J D K Bardrick
Director and Chief Executive Officer
Registered Number: 01763297

CITIGROUP GLOBAL MARKETS LIMITED

STATEMENT OF CASH FLOWS

for the year ended 31 December 2021

	Notes	2021 $ Million	2020 $ Million
Cash flows from operating activities:			
Profit before taxation		434	1,318
Adjustments for:			
Depreciation and amortisation	7	53	51
Provision charged and other movements during the year	24	(5)	(19)
(Income)/expense related to Pension	8	(99)	32
Net impairment charge/(release) on investment securities	20	—	(88)
Net impairment loss on loans and advances	7	6	6
Net loss/(gain) on other fair value items	16	(7)	(27)
Other non-cash movements including exchange rate movements		11	13
Net interest income	5	807	843
		1,200	2,129
Changes in:			
Financial assets at amortised cost		(4)	(22,104)
Financial assets mandatorily at fair value through profit or loss		65,639	(20,232)
Financial assets designated at fair value through profit or loss		(4,397)	(24,023)
Other assets		(5,809)	(10,524)
Financial liabilities at amortised cost		(14,416)	23,456
Financial liabilities mandatorily at fair value through profit or loss		(58,293)	23,409
Financial liabilities designated at fair value through profit or loss		5,524	29,735
Other liabilities		5,700	(1,390)
		(4,856)	456
Interest received		4,443	985
Interest paid		(1,444)	(833)
Income taxes paid		(125)	(307)
Net cash used in operating activities		**(1,982)**	**301**
Cash flows from investing activities			
Dividends received from investments		8	16
Acquisition of investment securities	20	(1,705)	(642)
Acquisition of intangible assets	19	(83)	(64)
Net cash used in investing activities		**(1,780)**	**(690)**
Cash flows from financing activities			
Issue of Additional Tier 1 capital	28	2,000	—
Capital contribution received from parent	28	5,500	2,000
Proceeds from issue of subordinated liabilities	27	(2,000)	500
Dividends paid on other equity instruments		(195)	(167)
Net cash from financing activities		**5,305**	**2,333**
Net increase in cash and cash equivalents		1,543	1,944
Cash at bank including bank overdrafts at 1 January		5,427	3,483
Cash at bank including bank overdrafts at 31 December		**6,970**	**5,427**

Under IAS 7, Bank overdrafts which are repayable on demand and which form an integral part of an entity's cash management are also included as a component of cash and cash equivalents in the Statement of Cash Flows.

1. Principal accounting policies

(a) Basis of presentation

The financial statements of the Company have been prepared in accordance with International Financial Reporting Standards (IFRSs) as adopted by the United Kingdom. In the previous year, the financial statements were prepared in accordance with Financial Reporting Standard 101, 'Reduced Disclosure Framework' (FRS 101). In the transition from FRS 101 to IFRSs as adopted by the United Kingdom, the Company has made no measurement and recognition adjustments. There were no differences between EU-adopted IFRS and UK-adopted IFRS in standards effective at the reporting date. The financial statements have been prepared on a going concern basis, in accordance with the Companies Act 2006 as applicable to CGML.

The financial statements have been prepared in US Dollars, which is the functional and presentational currency of the Company, and any reference to $ in these financial statements refers to US Dollars. The Company has rounded figures to the nearest million $, unless otherwise stated.

As permitted under section 401 of the Companies Act 2006, consolidated financial statements have not been prepared because the Company is a wholly owned subsidiary of the ultimate parent, Citigroup Inc., which prepares consolidated financial statements under United States Generally Accepted Accounting Principles (US GAAP). The Company meets the criteria for exemption from the obligation to prepare and deliver group accounts that is available to a company included in non-European Economic Area (EEA) group accounts of a larger group. These financial statements therefore present information about the Company as an individual undertaking and not about its group. Citigroup Inc. makes its financial statements available to the public on a quarterly basis.

As was reported in the ultimate parent company's (Citigroup's) Annual Report on SEC Form 10-K for the year ended 31 December 2021, Citigroup disclosed that the COVID-19 pandemic has severely impacted global health, financial markets, consumer and business spending, and economic conditions in all of the jurisdictions where Citi operates. The extent of the future pandemic impacts remains uncertain but may include, among other impacts, disruption of the global supply chain, higher inflation or interest rates, financial market volatility, increase in credit costs for Citi, and public health impacts. The pandemic may continue to have negative impacts on Citi's businesses and overall results of operations and financial condition.

To assess any potential impact on the Company, the Directors reassessed the components of capital, liquidity and the financial position of the Company and have concluded that the going concern basis is still appropriate. The reassessment was completed with reference to the stress testing processes within the ICAAP and ILAAP which demonstrated that CGML has sufficient capital and liquidity buffers to withstand the current market conditions. In this reassessment, the Directors considered severe but plausible downside scenarios, including stress tests aligned to the ICAAP for which the Company uses an internal model. The stress scenarios are considered to be at least as severe as the Bank of England's Scenario for banks and building societies not part of concurrent stress testing scenario. This analysis indicated that the Company would maintain capital and liquidity headroom throughout the period covered by the forecasts, even in reasonably possible downside scenarios.

Specifically, CGML continues to monitor the key risks for its liquidity and capital position including the impact of the conflict in Ukraine and the subsequent sanctions on Russia and the Company has shown that it would maintain sufficient capital and liquidity under a hypothetical scenario stressing energy commodity prices that could result.

The Directors are confident that the Company will have sufficient funds to continue to meet its liabilities as they fall due for at least 12 months from the date of approval of the financial statements and therefore, have prepared the financial statements on a going concern basis. In addition, Citigroup Inc. continues to provide confirmation that it will provide sufficient funding to the Company to ensure that it maintains a sound financial situation and is in a position to meet its debt obligations for the foreseeable future.

1. Principal accounting policies (continued)

(b) Changes in accounting policy and disclosures

The accounting policies adopted are consistent within the accounts and with those of the previous financial year, except for certain amendments and improvements to the IFRS standards implemented as at 1 January 2021, which did not have a material impact on the Company unless otherwise noted below. There were no other material or amended standards or interpretations that resulted in a change in accounting policy for the year ended 31 December 2021.

Standards and amendments issued and effective from 1 January 2021

There are a number of accounting standards that have been amended by the International Accounting Standards Board ("IASB"), which became effective from 1 January 2021. They include:

- Interest Rate Benchmark Reform (Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4, and IFRS 16) – Phase 2
- COVID-19-Related Rent Concessions (Amendments to IFRS 16, Leases)
- Amendments to IAS 1, ('Presentation of financial statements' on classification of liabilities)

The above amendments to IFRS 16 did not have an impact on the Company's financial statements, as the Company does not have any leases. More discussion of Interest Rate Benchmark Reform is included below.

Standards and amendments issued but not yet effective as at 31 December 2021

The accounting standards and amendments set out below have been issued by the IASB, but are not yet effective for the Company. The Company does not plan on early adoption of these standards. These standards either have no impact or not expected to have material impact to the Company upon adoption.

- Onerous Contracts – Cost of Fulfilling a Contract (Amendments to IAS 37)
- Reference to the Conceptual Framework (Amendments to IFRS 3)
- Classification of Liabilities as Current or Non-current (Amendments to IAS 1)
- IFRS 17 Insurance Contracts
- Fees in the '10 per cent' Test for Derecognition of Financial Liabilities (Amendment to IFRS 9)

Interest Rate Benchmark Reform

The Company has initially adopted Interest Rate Benchmark Reform – Phase 2 (Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16) from 1 January 2021. The Phase 2 amendments provide practical relief from certain requirements in IFRS Standards. These reliefs relate to modifications of financial instruments and lease contracts or hedging relationships triggered by a replacement of a benchmark interest rate in a contract with a new alternative benchmark rate. If the basis for determining the contractual cash flows of a financial asset or financial liability measured at amortised cost changed as a result of interest rate benchmark reform, then the Company updated the effective interest rate of the financial asset or financial liability to reflect the change that is required by the reform. A change in the basis for determining the contractual cash flows is required by interest rate benchmark reform if the following conditions are met:

- the change is necessary as a direct consequence of the reform; and
- the new basis for determining the contractual cash flows is economically equivalent to the previous basis;

When changes were made to a financial asset or financial liability in addition to changes to the basis for determining the contractual cash flows required by interest rate benchmark reform, the Company first updated the effective interest rate of the financial asset or financial liability to reflect the change that is required by interest rate benchmark reform. After that, the Company applied the policies on accounting for modifications to the additional changes.

1. Principal accounting policies (continued)

(b) Changes in accounting policy and disclosures (continued)

Managing interest rate benchmark reform and associated risks

For decades, LIBOR and other rates or indices deemed to be benchmarks that have been widely used across financial products and markets globally. These benchmarks have been the subject of ongoing national and international regulatory scrutiny and reform, resulting in regulators generally expecting or requiring banks, including Citi, to cease entering into new contracts that reference USD LIBOR as a benchmark by 31 December 2021. The LIBOR administrator ceased publication of non-USD LIBOR and one week and two-month USD LIBOR on a representative basis on 31 December 2021, with plans to cease publication of all other USD LIBOR tenors on 30 June 2023. As a result, Citi ceased entering into new contracts referencing USD LIBOR as of 1 January 2022, other than for limited purposes as permitted by regulatory guidance and Citi has been in compliance with this expectation.

Despite ongoing actions to prepare for the transition away from LIBOR, market participants, including Citi, may not be adequately prepared for the uncertainties associated with these benchmarks' discontinuance or, as necessary, be able to successfully modify their outstanding contracts or products which reference these benchmarks. For example, the transition away from and discontinuance of LIBOR or any other benchmark rate presents various uncertainties, operational, legal, reputational or compliance, financial and other risks and challenges to holders of these contracts 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.

The Company recognises that a transition away from and discontinuance of LIBOR, also the replacement of some interbank offered rates (IBORs) presents various risks and challenges that could significantly impact financial markets and market participants. Accordingly, the Company has continued its efforts to identify and manage its interest rate benchmark reform risks. For example, the Company continues to closely monitor legislative, regulatory and other developments related to interest rate benchmark reform matters and legislative relief. The International Swaps and Derivatives Association (ISDA) published Interbank Offered Rate (IBOR) Fallbacks Protocol for existing IBOR derivatives transactions, which became effective in January 2021, that provides derivatives market participants with new fallbacks for legacy and new derivatives contracts if both counterparties adhere to the Fallbacks Protocol or engage in bilateral amendments.

In addition, Citi has established a LIBOR governance and implementation programme focused on identifying and addressing the impact of LIBOR transition on Citi's clients, operational capabilities and financial contracts. The programme 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: programme 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 2021, 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. The Company's action plans and associated roadmaps are intended to be consistent with the timelines recommended by these working groups. This includes the Commodity Futures Trading Commission's SOFR First Initiative, which is designed to promote derivatives trading in SOFR. The Company also continued to engage with regulators, financial accounting bodies and others on interest rate benchmark reform matters.

Citi's interest rate benchmark reform transition efforts include, among other things, reducing its overall exposure to LIBOR, increasing Citi's virtual client communication efforts and client transition facilitation, including outreach regarding new industry-led protocols and solutions, and using alternative reference rates in certain newly issued financial instruments and products. Further, Citi has also been investing in its systems and infrastructure, as client activity moves away from LIBOR to alternative reference rates.

1. Principal accounting policies (continued)

(b) Changes in accounting policy and disclosures (continued)

In 2021, Citi has been focused on remediating existing LIBOR contracts for which publication ceased on a representative basis on 31 December 2021. Substantially all of these contracts have been remediated by 31 December 2021, and Citi continues to actively engage in and track the remediation of any remaining contracts after 31 December 2021. In addition, a significant majority of the notional amount of Citi's derivatives exposures include fallback provisions referencing alternative reference rates as a result of adherence to the (IBOR) Fallbacks Protocol. For LIBOR contracts that have not yet been remediated, Citi has also been reviewing the effect of relevant legislative solutions, which are expected to facilitate the transition to replacement rates.

The Company monitors the progress of transition from LIBORs and other IBORs to new benchmark rates by reviewing the total amounts of contracts that have yet to transition to an alternative benchmark rate. The Company considers that a contract is not yet transitioned to an alternative benchmark rate when interest under the contract is indexed to a benchmark rate subject to IBOR reform, even if it includes a fallback clause that deals with the cessation of the existing IBOR which would deem it remediated for contract management:

	USD Libor	GBP Libor	JPY Libor	EONIA	ICESWAP USD	ICESWAP EUR	Others** ***	Total
	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million
IBOR Exposures by Benchmarks*								
Financial Assets**	1,178	77	1	82	7	—	27	1,372
Financial Liabilities***	10,203	—	—	65	—	—	—	10,268
Derivates Notional****	991,547	396,626	98,203	7,342	99,475	123,538	59,566	1,776,297

*by 31 December 2021, the Company has exposure indexed to a benchmark that is still subject to IBOR reform.

**Financial assets include deposits, repos, etc.

***Financial liabilities include repos, notes, etc.

****Derivatives presented are notional values.

***** Others inlcude EUR Libor, CHF Libor, ICESWAP GBP, SOR and THBFIX.

(c) Financial instruments

Classification and measurement

From a classification and measurement perspective, IFRS 9 requires all financial assets, except equity instruments and derivatives, to be assessed based on a combination of the entity's business model for managing the assets and the instruments' contractual cash flow characteristics (whether the contractual cash flows are solely payments of principal and interest (SPPI)). For SPPI, 'principal' is defined as the fair value of the financial asset on initial recognition and 'interest' is defined as consideration for the time value of money and the credit risk associated with the principal amount outstanding during a period of time. Interest can also include consideration for other basic lending risks (for example, liquidity risk) and costs (for example, administrative costs) associated with holding the financial asset for a particular period of time and a profit margin that is consistent with a basic lending arrangement.

Categories under IFRS 9: fair value through profit or loss (FVTPL), fair value through other comprehensive income (FVOCI), and amortised cost. IFRS 9 also allows entities to irrevocably designate financial assets that qualify for amortised cost or FVOCI instruments as FVTPL, if doing so eliminates or significantly reduces a measurement or recognition inconsistency (an accounting mismatch). This election is referred to as the Fair Value Option (FVO). The majority of the financial instruments of the Company are measured at fair value through profit or loss. The Company has no financial instruments categorized as FVOCI.

1. **Principal accounting policies** (continued)

(c) **Financial instruments** (continued)

Financial liabilities which do not meet the definition of trading liabilities can be designated at FVTPL using the FVO, if one of the following criteria are met: (1) the designation eliminates or significantly reduces a measurement or recognition inconsistency (accounting mismatch); (2) a group of financial liabilities is managed and its performance is evaluated on a fair value basis in accordance with a documented risk management or investment strategy; or (3) the instrument contains one or more embedded derivatives which are not bifurcated. Financial liabilities which are designated at FVTPL, under the FVO, include collateralised financing transactions and hybrid financial liabilities.

Further, movements on gains or losses arising from an entity's own credit risk relating to liabilities designated at FVTPL are presented in other comprehensive income (OCI) with no subsequent reclassification to the income statement.

The financial assets held at amortised cost meet the SPPI test and are held to collect contractual cash flows.

FVTPL

Where the asset is not held within a business model whose objective is to hold to collect the contractual cash flows or within a business model whose objective is to both collect the cash flows and to sell the assets, then the asset will be classified as FVTPL. Moreover, any instrument for which the contractual cash flow characteristics do not comprise solely payments of principal and interest (that is, they fail the SPPI test) must be classified in the FVTPL category.

Financial assets and liabilities held for trading

Financial instruments that have been acquired principally for the purpose of selling or repurchasing in the near term, or form part of a portfolio of financial instruments that are managed at fair value together and for which there is evidence of short term profit taking are classified as "held for trading". Financial assets classified as "held for trading" include collateralised financing transactions, government bonds, non-government bonds, equities and derivatives. Financial liabilities classified as "held for trading" include derivatives, hybrid financial liabilities and short sales (securities sold but not yet purchased). A short sale is a sale of securities that the seller does not own at the time of sale. A short sale must be covered through the delivery of the securities sold short or a due bill, which is a promise to deliver specific securities to a customer later.

Trading assets and liabilities are initially recognised at fair value on settlement date and subsequently re-measured at fair value. Any changes in fair value between trade date and settlement date are reported in the income statement. Gains and losses realised on disposal or redemption and unrealised gains and losses from changes in fair value (including any foreign currency retranslation gains and losses) are reported in the income statement. Any initial gain or loss on financial instruments where valuation is dependent on valuation techniques using unobservable parameters are deferred over the life of the contract or until the instrument is redeemed, transferred or sold or the fair value becomes observable.

Derivatives and Hybrid financial instruments

Derivative contracts used in trading activities are recognised at fair value on the date the derivative is entered into and are subsequently re-measured at fair value. All derivatives are carried as assets when fair value is positive and as liabilities when fair value is negative. Gains and losses realised on disposal or redemption and unrealised gains and losses from changes in fair value are reported in the income statement. Where an embedded derivative exists within a financial liability host contract, the host contract and embedded derivative are measured as a package under the fair value option.

1. **Principal accounting policies** (continued)

(c) **Financial instruments** (continued)

Equity securities held for investment

Strategic investments including investments in exchanges, clearing houses and settlement houses are required to be held at fair value through the profit or loss account.

Other financial liabilities and subordinated loans

Financial liabilities and subordinated loans are measured at amortised cost using the effective interest rate, except those which are "held for trading", which are held at fair value through the profit or loss account.

Amortised Cost

A financial asset debt instrument shall be classified and subsequently measured at amortised cost (unless designated under FVO) only if both of the following conditions are met:

a) Business Model test: the financial asset debt instrument is held under a business model whose objective is to hold assets in order to collect contractual cash flows; and

b) SPPI test.

Loans and receivables

Loans and receivables incorporate trade debtors, including settlement receivables, and are initially recognised at fair value including direct and incremental transaction costs and subsequently measured at amortised cost using the effective interest rate method, and subject to expected credit loss impairment under IFRS 9.

Repurchase and resale agreements and securities lending/borrowing

Repurchase and resale agreements are treated as collateralised financing transactions and measured at amortised cost. Securities which have been sold with an agreement to repurchase continue to be shown on the balance sheet and the sale proceeds are recorded as a collateralised financing transaction within other liabilities. Securities acquired in purchase and resale transactions are not recognised on the balance sheet and the purchase is recorded as a collateralised financing transaction within other assets. The difference between the sale price and the repurchase price is recognised over the life of the transaction and is charged or credited to the income statement as interest payable or receivable.

Similarly, when securities are lent or borrowed in exchange for cash, this is also treated as collateralised financing. Securities lent are not derecognised from the balance sheet and the cash inflow is recognised as a collateralised borrowing. Securities borrowed are not recognised on the balance sheet and the cash inflow is recognised as a collateralised lending. The securities lending fees payable and receivable are charged or credited to the income statement as interest payable or receivable. However, the Company measures a portion of its repurchase and resale agreements at fair value. Financial instruments are measured at fair value through profit or loss when they meet one or more of the criteria set out below:

- the assets or liabilities are managed, evaluated and reported internally on a fair value basis.
- the designation eliminates or significantly reduces an accounting mismatch that would otherwise arise.

That portion of the Company's repurchase and resale agreements which are hedged with instruments measured at fair value and managed as a combined business strategy have been designated as fair value through profit or loss.

1. **Principal accounting policies** (continued)

(c) **Financial instruments** (continued)

Determination of fair value

Where the classification of a financial instrument requires it to be stated at fair value, this is determined by reference to the quoted market value in an active market wherever possible. Where no such active market exists for the particular instrument, the Company uses a valuation technique to arrive at the fair value, including the use of prices obtained in recent arms' length transactions, discounted cash flow analysis, option pricing models and other valuation techniques commonly used by market participants. In case the transaction price in the market in which these transactions are undertaken is different from the fair value in the Company's principal market for those instruments, the fair value of these transactions are also estimated by using valuation techniques. See Note 15 'Financial assets and liabilities accounting classifications and fair values' for further details.

Collateral

The Company receives collateral from customers as part of its business activities. Collateral can take the form of cash, securities or other assets. Where cash collateral is received this is recorded on the balance sheet and, where required by collateral agreements, is reported as restricted cash. The Company does not recognise non-cash collateral received on its balance sheet.

Where cash collateral is posted to a third party, the Company derecognises cash from its balance sheet. Non-cash collateral posted to a third party remains on the Company's balance sheet.

Offsetting financial instruments

Financial assets and liabilities are offset and the net amount reported in the balance sheet only when there is currently a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously. The legal right to set off the recognised amounts must be enforceable in both the normal course of business, in the event of default, insolvency or bankruptcy of both the Company and its counterparty. In all other situations they are presented gross.

All offsetting applied by the Company relates to derivatives and repurchase and reverse repurchase agreements. A significant portion of offsetting is applied to interest rate derivatives and related cash margin balances, which are cleared through central clearing parties such as the London Clearing House. The Company also offsets repurchase and reverse repurchase agreements for which the Company has the right to set off and has the intent to settle on a net basis or to realise an asset and settle a liability simultaneously.

Derecognition of financial assets and financial liabilities

Financial assets are derecognised when the right to receive cash flows from the assets has expired or when the Company has transferred its contractual right to receive the cash flows of the financial assets and either substantially all the risks and rewards of ownership have been transferred or substantially all the risks and rewards have neither been retained nor transferred but control is not retained.

If the Company enters into a transaction that results in it retaining significantly all of the risks and rewards of a financial asset it will continue to recognise that financial asset and will recognise a financial liability equal to the consideration received under the transaction. Financial liabilities are derecognised when they are extinguished, that is when the obligation is substantially modified, exchanged, discharged, cancelled or expired.

Impairment

The IFRS 9 impairment standard applies to any debt instruments measured at amortised cost or at fair value through other comprehensive income and also to off balance sheet loan commitments and financial guarantees. The standard requires an estimation of an expected credit loss (ECL) that is unbiased and probability weighted, including information about past events, current conditions and reasonable and supportable forecasts of future events and economic conditions at the reporting date. The estimate will also consider the time value of money.

1. **Principal accounting policies** (continued)

(c) **Financial instruments** (continued)

ECL will be measured on each reporting date according to a three-Stage expected credit loss impairment model under which each financial asset is classified in one of the stages below:

- Stage 1 – From initial recognition of a financial asset to the date on which the asset has experienced a significant increase in credit risk relative to its initial recognition, a loss allowance is recognized equal to the credit losses expected to result from defaults expected over the next 12 months. Interest is calculated based on the gross carrying amount of the asset.
- Stage 2 – Following a significant increase in credit risk relative to the risk at initial recognition of the financial asset, a loss allowance is recognized equal to the full credit losses expected over the remaining life of the asset. Interest is calculated based on the gross carrying amount of the asset.

  The credit losses for financial assets in Stage 1 and Stage 2 are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Company expects to receive).
- Stage 3 – When a financial asset is considered to be credit-impaired, a loss allowance equal to the full lifetime expected credit losses will be recognized. Credit losses are measured as the difference between the gross carrying amount and the present value of estimated future cash flows. Interest revenue is calculated based on the carrying amount of the asset, net of the loss allowance, rather than on its gross carrying amount.

Evidence that a financial asset is impaired includes observable data that comes to the attention of the Company such as:

- Significant financial difficulty of the issuer or obligor;
- A breach of contract, such as a default or delinquency in interest or principal payments;
- It becomes probable that the borrower will enter bankruptcy or other financial reorganisation;
- The disappearance of an active market for that financial asset because of financial difficulties; or
- Observable data indicating that there is a measurable decrease in the estimated future cash flows from a portfolio of financial assets since the initial recognition of those assets, although the decrease cannot yet be identified with the individual financial assets in the portfolio, including:
  - adverse changes in the payment status of borrowers in the portfolio; and
  - national or local economic conditions that correlate with defaults on the assets in the portfolio.

Staging

Financial assets can move in both directions through the stages of the IFRS 9 impairment model depending on the assessment of whether there is a significant increase of credit risk since initial recognition or whether the asset is credit impaired subsequently changes.

In order to determine the ECL reporting stage for an obligation, the Company determines whether the asset is already impaired (Stage 3) or not (Stage 1 and 2). Stage 2 is determined by the existence of a significant credit deterioration (or credit improvement) compared with the credit rating at initial recognition. Stage 1 assets do not have significant credit deterioration compared with that at initial recognition. All newly acquired or originated financial assets that are not purchased or originated credit impaired (POCI) are recognised in Stage 1 initially. Additional qualitative reviews are also performed to assess the staging results and make adjustments, as necessary, to better reflect the positions which have significantly increased in risk.

Changes in the required credit loss allowance, including the impact of movements between Stage 1 and Stage 2, are recorded in the income statement as an adjustment to the allowance for credit losses.

1. **Principal accounting policies** (continued)

(c) **Financial instruments** (continued)

Because of the nature of business activities and the financial assets on the Company's balance sheet (high credit quality reverse repo asset loans and short term trade receivables), the recognition of expected credit losses has a minimal impact. For the vast majority of its exposures, the Company has taken advantage of practical expedients allowed by IFRS 9 in which either: (a) lifetime expected credit losses are recognised irrespective of changes in credit risk (applicable to receivables such as trade date or brokerage receivables), or (b) twelve-month expected credit losses are recognised where credit risk is low at the reporting date (applicable to reverse repos and securities borrowed).

(d) **Commodities**

Commodities are initially recognised under inventory at fair value on settlement date and subsequently re-measured at fair value less costs to sell. Realised gains and losses on sales of commodities inventory are included in net dealing income.

(e) **Fee and commission income**

The primary components of Fee and commission income are investment banking fees and brokerage commissions.

Fee and commission income is recognised when the right to consideration has been obtained in exchange for performance.

Investment banking fees are substantially composed of underwriting and advisory revenues. Such fees are recognised at the point in time when Company'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.

Brokerage commissions primarily include commissions and fees 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 recognised at the point in time the associated service is fulfilled, generally on trade-execution date.

The services described above are generally provided by the Company in a principal capacity, whereby it has primary responsibility for fulfilling the contract with the customer.

(f) **Interest receivable and payable and the effective interest method**

Interest income and expense is recognised in the income statement for all financial assets classified as loans and receivables and non-trading financial liabilities, using the effective interest rate method. The Effective Interest Rate (EIR) is the rate that exactly discounts the estimated future cash payments and receipts through the expected life of the financial asset or financial liability to the carrying amount of the financial asset or financial liability. The calculation of the effective interest rate includes incremental and directly attributable transaction costs and fees paid or received that are an integral part of the effective interest rate. When calculating the EIR, the Company estimates future cash flows considering all contracted terms of the financial instrument, but no future credit losses. For assets which are initially recognized as purchased or credit impaired, interest revenue is calculated through the use of a credit-adjusted effective interest rate which takes into consideration expected credit losses. A credit-adjusted EIR is the interest rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial asset to the amortised cost of a financial asset that is a purchased or originated credit-impaired financial asset.

Interest arising on financial assets or financial liabilities that are "held for trading" or "designated at fair value" is reported within net dealing income.

1. **Principal accounting policies** (continued)

(g) Net dealing income

Net dealing income comprises gains and losses related to trading assets, trading liabilities and financial assets and liabilities designated at fair value and commodities, and includes all realised and unrealised fair value changes, dividends and foreign exchange differences. For derivatives that are not part of hedging programmes, both the interest element and the fair value movements are recognised as part of net dealing income.

(h) Tangible and Intangible assets

Tangible fixed assets are measured at cost, less accumulated depreciation. The cost of developed software includes directly attributable internal costs and the cost of external consultants. Depreciation is provided at rates calculated to write-off the cost, less the estimated residual value of each asset, on a straight line basis over its expected economic useful life, as follows:

Premises improvements	–	lesser of the life of the lease or 10 years
Equipment	–	lesser of the life of the equipment or 10 years
Capitalised software	–	2 to 10 years

At each reporting date the Company assesses whether there is any indication that tangible or intangible fixed assets are impaired.

(i) Investments in subsidiaries

Investments in subsidiary undertakings are stated at cost less impairment. The Company determines whether it is necessary to recognise an impairment loss on its investment in shares in subsidiary undertakings by comparing the carrying value of the investment with the value in use, determined by the net asset value of the subsidiary undertaking at the reporting date.

(j) Taxation

Income tax payable on profits is recognised as an expense based on the applicable tax laws in each jurisdiction in the period in which profits arise.

Deferred tax assets and liabilities are recognised for taxable and deductible temporary differences between the tax bases of assets and liabilities and their carrying amounts in the financial statements. Deferred tax assets are recognised to the extent that it is probable that there will be sufficient profits available against which these differences can be utilised.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period in which the asset will be realised or the liability will be settled based on tax rates that are enacted or substantively enacted at the balance sheet date. Deferred tax balances are not discounted.

1. **Principal accounting policies** (continued)

(k) Pension and other post retirement benefit costs

CGML operates both a defined benefit and a defined contribution pension scheme.

The cost of CGML's defined contribution pension scheme is expensed as the related service is provided and recognised within operating expenses in the income statement. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high quality corporate bonds that are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating to the term of the related pension liability. Remeasurement gains and losses are recognised immediately in the Statement of Other Comprehensive Income (OCI). The current service cost and any past service costs are included in the income statement within operating expenses. The interest income on pension scheme assets, net of the impact of the interest cost on the pension scheme liabilities, is included within Net finance income on pension.

A surplus is recognised on the balance sheet where an economic benefit is available as a reduction in future contributions or as a refund of monies to Citi.

(l) Foreign currencies

Transactions in foreign currencies are recorded using the rate of exchange at the date of transaction. Monetary assets and liabilities denominated in currencies other than US Dollars are translated into US Dollars using the year end spot exchange rates. Non-monetary assets and liabilities denominated in currencies other than US Dollar that are classified as "held for trading" or "designated at fair value" are translated into US Dollars using the year end spot rate. Non-monetary assets and liabilities denominated in currencies other than US Dollars that are not measured at fair value have been translated at the relevant historical exchange rates. Any gains or losses on exchange are taken to the income statement as incurred.

(m) Share-based incentive plans

The Company participates in a number of Citi equity settled share-based incentive plans under which Citigroup grants shares to its employees in exchange for services from employees. Pursuant to a separate Stock Plans Affiliate Participation Agreement (SPAPA), the Company makes a cash settlement to Citigroup for the fair value of the share-based incentive awards delivered to the employees under these plans.

The Company applies equity-settled accounting for its share based incentive plans, with separate accounting for its associated obligations to make payments to Citigroup Inc as part of a recharge arrangement. The Company recognises the fair value of the awards at grant date with a credit to the intercompany payable (recharge liability) to Citigroup Inc. All amounts paid to Citigroup Inc. and the associated obligations are recognised over the vesting period as compensation expense. Subsequent changes in the fair value of the recharge liability in respect of all unexercised awards are reviewed annually and any changes in value are recognised in the equity reserve, again over the vesting period. The SPAPA is also updated annually. The total expense is recognised over the vesting period, which is the period over which all of the specified vesting conditions are to be satisfied.

1. **Principal accounting policies** (continued)

(m) Share-based incentive plans (continued)

For Citi's share based incentive plans that have a graded vested period each "tranche" of the award is treated as a separate award. Where a plan has a cliff vest, the award only has a single "tranche". The expense is recognised as follows:

Vesting Period of Award	% of expense recognised in Income Statement						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
2 Years (vesting in 2 Tranches)	75%	25%					
3 Years (vesting in 3 Tranches)	61%	28%	11%				
4 Years (vesting in 4 Tranches)	52%	27%	15%	6%			
5 Years (vesting in 5 Tranches)	46%	26%	16%	9%	4%		
7 Years (vesting in 4 Tranches)	19%	19%	19%	19%	13%	8%	4%

However, employees who meet certain age plus years of service requirements (retirement eligible employees) may terminate active employment and continue vesting in their awards provided they comply with specified non-compete provisions. The cost of share based incentive plans are recognised over the requisite service period. For awards granted to retiree eligible employees, the services are provided prior to grant date, and subsequently the costs are accrued in the year prior to the grant date.

EU Short Term awards are a form of Capital Accumulation Programme (CAP) awarded to qualifying staff. The award is accounted for similarly to CAP awards but is delivered in the form of immediately vested restricted shares subject to a six month sale restriction.

(n) Cash at bank

Cash and balances at central banks or other financial institutions comprise balances with original maturity of less than three months and are carried at amortised cost on the Company's balance sheet.

(o) Provisions

Provisions are recognised for present obligations arising as consequences of past events where it is more likely than not that a transfer of economic benefit will be necessary to settle the obligation, which can be reliably estimated. Provisions are measured at the best estimate of the outflow of resources that will be required to settle the obligation.

(p) Modification of financial liabilities

When a financial liability is modified, or there is an exchange of debt instruments between the same lender and borrower, the original financial liability is derecognised—and a new liability recognised—if the two debt instruments have 'substantially different' terms. This determination considers both a quantitative comparison of the debt's cash flows before and after the modification, as well as consideration of qualitative factors such as risk profile, maturity, or existence of embedded derivatives.

Where terms are substantially different, the existing liability is derecognised, and any difference between the carrying value and the value of the replacement debt is recognized in profit or loss at the date of modification.

When the contractual cash flows of a financial liability are renegotiated or otherwise modified and the renegotiation or modification does not result in the derecognition of that financial liability in accordance with IFRS 9, the Company shall recalculate the gross carrying amount of the financial liability, and any difference is also recognized in profit or loss at the date of modification.

2. Use of assumptions, estimates and judgements

The results of the Company are sensitive to the accounting policies, assumptions and estimates that underlie the preparation of its financial statements. The accounting policies used in the preparation of the financial statements are described in detail above.

The preparation of financial statements requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised and in any future periods affected.

The following areas are sources of estimation uncertainties that require management to make highly complex or subjective judgements, which have (or may have) the most significant effect on the amounts recognized in the financial statements.

Valuation of financial instruments

The Company's accounting policy for valuation of financial instruments is described in Note 1(c). If quoted market prices are not available, fair value is based upon internally developed valuation models that use, where possible, current market-based or independently sourced market parameters, such as interest rates, currency rates and option volatilities. Such models are often based on a discounted cash flow analysis. In addition, 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 under the fair value hierarchy as Level 3 even though there may be some significant inputs that are readily observable. The Company is required to exercise subjective judgments relating to the applicability and functionality of internal valuation models, the significance of inputs or value drivers to the valuation of an instrument and the degree of illiquidity and subsequent lack of observability in certain markets. Note 15 'Financial assets and liabilities accounting classifications and fair values' discusses further the valuation of financial instruments.

Credit valuation adjustment

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 Citi'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. Citi'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. Citi's CVA and FVA methodologies consist 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 non-performance risk. This process identifies specific, point-in-time future cash flows that are subject to non-performance and term funding risk, rather than using the current recognized net asset or liability as a basis to measure the CVA and FVA.

2. Use of assumptions, estimates and judgements (continued)

Credit valuation adjustment (continued)

- 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. Citi'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 spreads is applied to the expected funding exposures (e.g., the market liquidity spread used to represent the term funding premium associated with certain OTC derivatives).

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.

During 2021, the Company recorded net CVA gain of $52 million (2020: $21 million losses). There were additionally net FVA losses of $32 million (2020: $2 million losses). The total adjustment recorded in the balance sheet at the year-end was $(57) million (2020: $9 million).

3. Turnover and results

As permitted by paragraph 4 of Schedule 1 to the Companies Act 2006 The Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008 (SI 2008 No 410), the format of the income statement and the Balance sheet have been adapted to the circumstances of the Company. Instead of turnover, the Directors have reported fee and commission income, net dealing income and interest receivable less interest payable in determining the gross profit of the Company.

4. Fee and commission income

	2021 $ Million	2020 $ Million
Investment Banking		
Advisory Fees	357	139
Underwriting Fees	630	580
Other Investment Banking Fee	69	19
	1,056	738
Brokerage commissions and fees	294	367
Other revenue	120	23
Total fee and commission income	1,470	1,128
Of which, revenue from contracts with customers	*1,179*	*1,122*

4. Fee and commission income (continued)

Revenue from contracts with customers

	2021 $ Million	2020 $ Million
Investment Banking		
Advisory Fees	238	146
Underwriting Fees	630	580
Other Investment Banking Fee	9	37
	877	763
Brokerage commissions and fees	299	373
Other revenue	3	(14)
Total revenue from contracts with customers	1,179	1,122

Included within Other assets are contract assets amounted to $47 million (2020: $101 million) and included within Other liabilities are contract liabilities amounted to $109 million (2020: $106 million).

5. Interest receivable and interest payable

	2021 $ Million	2020 $ Million
Interest receivable comprises:		
Interest on collateralised financing transactions, debtors and cash assets measured at amortised cost	280	267
	280	267
Interest payable comprises:		
Interest on collateralised financing transactions and borrowings measured at amortised cost	866	791
Interest on subordinated debt	221	320
	1,087	1,111

Interest receivable and interest payable presented above represents interest revenue calculated using the effective interest method.

Included within interest receivable is interest received on client money. Interest receivable and payable remained largely in line with 2020. A decrease in interest payable as a result of a lower subordinated debt following the capital restructure is largely offset by increasing yields over 2021.

6. Net dealing income

	2021 $ Million	2020 $ Million
Net dealing income mandatorily at fair value through profit and loss	2,742	3,418
Net dealing income designated at fair value through profit or loss	92	389
	2,834	3,807

The financial liabilities designated at fair value through profit or loss are fully collateralised (see Note 29 'Financial instruments and risk management') such that there are no changes in the fair value of these liabilities attributable to changes in their credit risk.

7. Operating expenses

	2021 $ Million	2020 $ Million
Compensation and benefits expenses:		
Fixed		
Salaries	724	634
Payroll taxes	198	161
Benefits	(8)	(13)
Deferred Cash	117	176
Share-based incentive expense (Note 9)	159	145
Pension costs		
– defined benefit scheme (Note 8)	12	9
– defined contribution scheme	57	50
Medical expenses	36	23
Severance	16	19
Variable		
Discretionary incentive compensation	242	238
Share-based incentive expense (Note 9)	66	67
Agency & temporary staffing	24	18
Other business specific variable compensation	1	1
Total compensation and benefits expenses	1,644	1,528
Transactional expenses	366	350
Technology/Communications	170	155
Consumption charges	253	220
Tax charges	174	152
Other operating expenses	475	483
Total operating expenses	**3,082**	**2,889**
Other operating expenses include:		
Depreciation (Note 19)	53	51
IFRS 9 reserve	6	6
Fees payable to the company's auditor for the audit of the company's annual accounts:		
In support of the Citigroup Inc global audit	3.08	2.34
Audit of these financial statements	1.54	1.17
Fees payable to the company's auditor and its associates for other services:		
Audit related assurance services	1.82	1.10
Other assurance services	0.20	0.07

Consumption expense includes service fees for the provision of realty services, software and technology costs mainly from other Citi affiliates.

The Company employed an average of 3,604 (2020: 3,360) employees during the year.

The following table shows an analysis of the monthly average number of direct employees of the Company:

	2021	2020
Institutional Clients Group	**3,163**	**2,954**
Global Rates	127	120
Global Spread Products	123	131
Equity Markets & Securities Services	1,125	1,029
Commodities	71	66
Banking, Capital Markets and Advisory	641	668
Business Support	1,076	940
Infrastructure Operations and Global Functions	**441**	**406**

8. Pension

Defined benefit and contribution schemes

The Citigroup (UK) Pension Plan was established in September 2000 and provides defined contribution benefits to all new hires. The contributions that Citi is required to make are known, although the pension benefit will vary depending upon the investment returns achieved by investment choices made by the employee.

The Citigroup Global Markets Limited Pension and Life Assurance Scheme ("the Scheme") is a funded pension scheme providing benefits on both a defined benefit and defined contribution basis. The defined benefit arrangements are generally non-contributory and based on accrual of 1/60th of final pensionable salary for each year of pensionable service in the Scheme. The defined contribution arrangement provides age-related employer contributions ranging from 6% to 13% of pensionable salary for those aged 20 and 55 respectively, increasing by 1% for each 5 year age band. Additionally, employee contributions are matched up to a maximum of 3% at a rate of £1:£1 for those over age 45 and 50p:£1 for those under age 45. The Scheme also provides lump sum death benefits to active members, based on a multiple of salary, which the members can select. The Scheme is now closed to new entrants. The Scheme operates under trust law and is managed and administered by CG Pension Trustees Limited (the Trustee) on behalf of the members in accordance with the terms of the Trust Deed and Rules and relevant legislation. The Plan's assets are held by the trust. Employees are not required to contribute to the Scheme, which is contracted out of the State Earnings Related Pension Scheme.

Cash contributions to the Scheme are reviewed every three years as part of an actuarial valuation. Following each actuarial valuation, the Company agrees what contributions are required to fund ongoing benefit accrual and agrees a deficit recovery plan with the Trustee Board if necessary. The most recent actuarial funding valuation of the Scheme at 5 April 2020 revealed a surplus of £47.9 million so no recovery plan was required. The Company agreed that it would pay £7.24 million per annum from 1 June 2018 to 31 July 2021 and £6.3 million per annum from 1 August 2021 to 30 April 2023 to cover the cost of ongoing benefit accrual. From 1 June 2018, it was also agreed that the Scheme's investment management expenses would be met from Scheme assets.

The pension cost in respect of defined benefit obligations is assessed in accordance with the advice of a qualified external actuary using a Projected Unit method with a triennial review. The most recent full actuarial assessment of the liabilities of the scheme was at 5 April 2020.

The Scheme exposes Citi to a number of risks, the most significant being;

- Asset Volatility - the Scheme's obligations are calculated using a discount rate set with reference to corporate bond yields; if assets underperform this yield, this will create a deficit.
- Bond Yields - a decrease in corporate bond yields will increase the value placed on the Scheme's obligations for accounting purposes. Provided that government bond yields decrease by the same margin as corporate bond yields, this will largely be offset by an increase in the value of the Scheme's assets.
- Inflation Risk - a significant proportion of the Scheme's obligations are linked to inflation such that higher inflation will lead to higher liabilities (although in most cases, caps on the level of inflationary increases are in place to protect against extreme inflation).
- Life Expectancy - the majority of the Scheme's obligations are to provide benefits for the life of the member, so increases in life expectancy will result in an increase in the liabilities.

Expected regular employer contributions to be paid into the Scheme during 2021 are $10 million (2020: $9 million).

The Scheme duration is an indicator of the weighted-average time until benefit payments are made. For the Scheme as a whole, the duration is 20 years.

The mortality assumptions are based on standard mortality tables which allow for expected future mortality improvements. The assumptions are that a member currently aged 65 will live on average for a further 23.6 years for males and 25.0 years for females. Members currently aged 45 are expected to live a further 24.7 years and 26.3 years from age 65 for males and females respectively.

8. Pension (continued)

Assumptions that are affected by economic conditions (financial assumptions) are based on market expectations at the balance sheet date, for the period over which the obligations are settled.

The financial assumptions used in calculating the defined benefit scheme liabilities as at 31 December 2021 are as follows:

	2021	2020
Discount rate for scheme liabilities	1.95%	1.45%
Interest income rate on scheme assets	1.95%	1.45%
Inflation - RPI	3.50%	3.10%
Inflation - CPI	3.00%	2.60%
Rate of general long-term increase in salaries	1.50%	1.50%
Rate of increase to pensions in payment		
– Pensions accrued from 1 May 2005	2.50%	2.40%
– Pensions accrued prior to 1 May 2005	3.20%	2.90%

Following a public consultation, in November 2020, the government confirmed that it would accept the UK Statistics Authority's proposal that the Retail Price Index (RPI) should be aligned with the Consumer Price Index (including housing costs) (CPIH) from 2030.

The fair value of Scheme assets at the reporting date are set out as follows:

	Fair value	
	2021 $ Million	2020 $ Million
Listed assets		
Government bonds	2,070	2,854
Other	15	12
Unlisted assets		
Government bonds	(747)	(1,477)
Corporate bonds	734	744
Insured Pensions	1	1
Total market value of assets	2,073	2,134

Analysis of amounts recognised in the income statement account:

	2021 $ Million	2020 $ Million
Current service cost	7	7
Past service cost	3	2
Administrative Expenses	2	—
Expense recognised in the profit and loss account	12	9

8. Pension (continued)

Analysis of other finance income:

	2021 $ Million	2020 $ Million
Interest income on pension scheme assets	31	38
Interest expense on pension scheme liabilities	(24)	(29)
Net finance income on pension	**7**	**9**

Analysis of amount recognised in Statement of Comprehensive Income:

	2021 $ Million	2020 $ Million
Return on scheme assets (below)/in excess of that recognised in net interest income	(5)	184
Actuarial gains/(losses) due to changes in financial assumptions	85	(172)
Actuarial gains/(losses) due to changes in demographic assumptions	1	(13)
Actuarial gains/(losses) due to liability experience	18	(31)
Total remeasurement gains/(losses) recognised in Statement of Comprehensive Income	99	(32)
Deferred tax adjustment on pension in Statement of Comprehensive Income	(27)	9
Deferred tax charge associated with rate change on remeasurement of pension asset	(31)	(9)
Total gains/(losses) recognised in Statement of Comprehensive Income net of tax	**41**	**(32)**

Reconciliation to the balance sheet:

	2021 $ Million	2020 $ Million
Total market value of assets	2,073	2,134
Present value of scheme liabilities	(1,526)	(1,685)
Gross pension asset	**547**	**449**
Related deferred tax liability	(181)	(121)
Net pension asset	366	328

8. Pension (continued)

	2021 $ Million	2020 $ Million
Surplus in scheme at beginning of the year	449	458
Current service cost	(7)	(7)
Contributions	9	10
Past service cost	(3)	(2)
Curtailments	(2)	—
Other finance income	7	9
Remeasurement gains/(losses)	99	(32)
Foreign exchange adjustment	(5)	13
Surplus in scheme at end of year	**547**	**449**

CGML recognises a surplus in accordance with the requirements of IFRIC 14. The trustees of the Scheme do not have the unilateral right to commence wind-up of the Scheme. Thus, CGML assumes that the Scheme will continue in existence until the last benefit payments are made to members, at which point any residual assets will be returned to the employer in line with the rules of the Scheme.

The changes to the present value of the defined obligation during the year are as follows:

	2021 $ Million	2020 $ Million
Opening defined benefit obligation	1,685	1,481
Current service cost	7	7
Past service cost	3	2
Interest expense	24	29
Remeasurement (gains)/losses on scheme liabilities	(104)	216
Net benefits paid out	(75)	(112)
Curtailments	2	—
Foreign exchange adjustment	(16)	62
Closing defined benefit obligation	1,526	1,685

The changes to the fair value of scheme assets during the year are as follows:

	2021 $ Million	2020 $ Million
Opening fair value of scheme assets	2,134	1,939
Interest income on pension scheme assets	31	38
Remeasurement gains on scheme assets	(5)	184
Contributions by the employer	9	10
Net benefits paid out	(75)	(112)
Administrative expenses	(2)	—
Foreign exchange adjustment	(19)	75
Closing fair value of scheme assets	2,073	2,134

8. Pension (continued)

The actual return on assets is as follows:

	2021 $ Million	2020 $ Million
Interest income on pension scheme assets	31	38
Remeasurement (losses)/gains on scheme assets	(5)	184
Actual return on assets	26	222

The interest income on scheme assets is set using the discount rate assumption. In 2021, asset values decreased by $5 million due to a slight rise in bond yields during the year. In 2020, asset values increased by $184 million as bond yields decreased during the year.

The table below sets out the history of experience gains and losses:

	2021 $ Million	2020 $ Million	2019 $ Million	2018 $ Million	2017 $ Million
(Losses)/gains on scheme assets due to experience	(5)	184	132	(75)	32
Gains/(losses) on scheme liabilities due to experience	18	(31)	14	(46)	(24)
Gains/(losses) on scheme liabilities due to assumptions	86	(185)	(190)	133	(19)
Remeasurements recognised in Statement of Comprehensive Income	99	(32)	(44)	12	(11)
Related deferred tax	(58)	—	11	(3)	3
Total gains/(losses) recognised in Statement of Comprehensive Income net of tax	41	(32)	(33)	9	(8)

8. Pension (continued)

The key assumptions used for IAS 19 are the discount rate, inflation and mortality. If different assumptions were used, this could have a material effect on the results disclosed. The sensitivity of the results to these assumptions is set out in the table below.

Sensitivity to key assumptions	2021 Change in defined benefit obligation increase/ (decrease) $ Million	2020 Change in defined benefit obligation increase/ (decrease) $ Million
Effect of increasing the discount rate assumption by 1%	(260)	(299)
Effect of decreasing the discount rate assumption by 1%	343	399
Effect of increasing the salary increase assumption by 1%	11	14
Effect of decreasing the salary increase assumption by 1%	(10)	(12)
Effect of increasing the life expectancy assumption by 1 year	56	76
Effect of increasing the pension increase assumption by 1%	230	259
Effect of decreasing the pension increase assumption by 1%	(184)	(205)
Effect of increasing the inflation assumption by 1%	168	185
Effect of decreasing the inflation assumption by 1%	(142)	(157)

In valuing the liabilities of the pension fund, mortality assumptions have been made as indicated above. If life expectancy had been changed to assume that all members of the fund lived for one year longer, the value of the reported liabilities would have increased by $56 million (2020: increase of $76 million).

The sensitivity information shown above is approximate and has been determined taking into account the duration of the liabilities and the overall profile of the Scheme membership. The methods and assumptions used in preparing the sensitivity analysis above have not changed from the prior year.

9. Share-based incentive plans

As part of the Company's remuneration programme, it participates in a number of Citigroup share-based incentive plans. These plans involve the granting of restricted or deferred share awards and share payments. Such awards are used to attract, retain and motivate officers and employees to provide incentives for their contributions to the long-term performance and growth of the Company, and to align their interests with those of the shareholders. The award programmes are administered by the Personnel and Compensation Committee of the Citigroup Inc. Board of Directors, which is composed entirely of non-employee directors.

In the share award programme Citigroup issues common shares in the form of restricted share awards, deferred share awards and share payments. For all stock award programmes during the applicable vesting period, the shares awarded are not issued to participants (in the case of a deferred stock award) or cannot be sold or transferred by the participants (in the case of a restricted stock award), until after the vesting conditions have been satisfied. Recipients of deferred share awards do not have any shareholder rights until shares are delivered to them, but they generally are entitled to receive dividend-equivalent payments during the vesting period. Recipients of restricted share awards are entitled to a limited voting right and to receive dividend or dividend-equivalent payments during the vesting period. Once a share award vests the shares become freely transferable, but in the case of certain employees, may be subject to transfer restriction by their terms or share ownership commitment.

In prior years, certain stock-based awards were subject to discretionary clawback provisions and as such subject to variable accounting. Under variable accounting the associated value of the award liability moves in line with changes in Citigroup's common stock price until the date that the award vests. Any fluctuation from the grant date value of the award until the award is fully vested is recognised through the income statement.

9. Share-based incentive plans (continued)

In April 2017 Citigroup made amendments to its UK awards prospectus which enabled the adoption of fixed accounting for all remaining, previously awarded, variable accounting unvested awards using a modification price of $59.39 (set at the end of April when the decision was confirmed). The difference between the grant price of all remaining, previously awarded, variable accounting unvested awards and the modification price was recognised through the income statement, any further fluctuations in share price from the modification price to the vesting date would be recognised in equity, in line with other non-variable accounting share based payment award types.

(i) Stock award programme

The Company participates in the Citigroup Capital Accumulation Programme (CAP), under which shares of Citigroup common stock are awarded in the form of restricted or deferred stock to participating employees.

Generally CAP awards of restricted or deferred stock constitute a percentage of annual incentive compensation and vest over a three or four year period beginning on or about the first anniversary of the award date. Except in specific circumstances, continuous employment within Citigroup is required for CAP and other stock award programmes to vest.

The programme provides that employees who meet certain age plus years-of-service requirements (retirement-eligible employees) may terminate active employment and continue vesting in their awards provided they comply with specified non-compete provisions. Awards granted to retirement-eligible employees are accrued in the year prior to the grant date in the same manner as cash incentive compensation is accrued.

For all stock award programmes, during the applicable vesting period, the shares awarded cannot be sold or transferred by the participant, and the award is subject to cancellation if the participant's employment is terminated. After the award vests, the shares become freely transferable (subject to specific sale restrictions). From the date of award, the recipient of a restricted stock award can direct the vote of the shares and receive regular dividends to the extent dividends are paid on Citigroup common stock. Recipients of deferred stock awards receive dividend equivalents to the extent dividends are paid on Citigroup common stock, but cannot vote.

Stock awards granted generally vest 25% per year over four years or 33% per year over 3 years.

As part of remuneration since 2010, the Company entered into an arrangement referred to as an "EU Short Term" award. The award will be delivered in the form of immediately vested restricted shares subject to a six month sale restriction.

	2021	2020	2019	2018	2017
Shares awarded	4,083,428	2,750,205	3,042,789	2,921,491	2,714,862
Weighted average fair market value per share	$59.95	$74.41	$59.66	$72.78	$59.34

(ii) Stock option programme

In prior years, the Company made discretionary grants of options to eligible employees pursuant to the broad-based Citigroup Employee Option Grant (CEOG) Programme under the Citigroup Stock Incentive Plan. The last options granted under the plan were in 2011. There are no options outstanding. Full details on the history of CEOG can be found in the Company's prior year financial statements.

9. Share-based incentive plans (continued)

(iii) Profit and loss statement impact

The table below details the profit and loss impact of the share based incentive plans.

	2021 $ Million	2020 $ Million
Stock Awards		
Granted in 2021	180	
Granted in 2020	30	149
Granted in 2019	8	27
Granted in 2018	1	13
Granted in 2017	—	3
Granted in 2016	—	—
Accrued Expenses	5	20
Total Expense (Note 7)	224	212
From which Fixed Share-based incentive expense	159	145
From which Variable Share-based incentive expense	66	67
Fair value adjustment of intercompany recharges in equity reserve	(3)	62
Deferred tax impact of fair value adjustment in equity reserve	—	(16)
Net fair value adjustment of intercompany recharges in equity reserve	(3)	46
Total carrying amount of equity-settled transaction liability	446	379
Total carrying amount of cash-settled transaction liability	—	—

10. Directors' remuneration

Directors' remuneration in respect of services to the Company was as follows:

	2021 $'000	2020 $'000
Aggregate emoluments	6,393	5,801
Contributions to defined contribution pension scheme	79	88
	6,472	5,889

The contributions to the money purchase pension schemes are accruing to seven of the Directors (2020: five). Six of the Directors (2020: four) of the Company participate in parent company share plans.

The remuneration of the highest paid Director was $2,393,088 (2020: $2,578,652) and accrued pension of $1,979 (2020: $2,404).

The Directors benefit from qualifying third party indemnity provisions in place during the financial year and at the date of this report.

The above remuneration is based on the apportionment of time incurred by the Directors for services to the Company, both in their capacity as a Director and, where applicable, their normal employment.

11. Tax on profit on ordinary activities

(a) Analysis of tax charge in the year

	2021 $ Million	2020 $ Million
Current tax:		
UK corporation tax	118	343
Adjustment in respect of UK corporation tax for previous years	(10)	(19)
Double taxation relief	(95)	(85)
Overseas current tax	96	87
Adjustment in respect of overseas tax for previous years	(1)	(4)
Total current tax	108	322
Deferred tax:		
Origination and reversal of temporary differences		
– movement on Pension Asset	2	6
– movement on other temporary differences (Note 22)	(46)	(44)
– rate change adjustment	(52)	(8)
Adjustment in respect of deferred tax for earlier years:	19	19
Total deferred tax	(77)	(27)
Tax charge on ordinary activities	31	295

(b) Factors affecting tax charge for the year

The table below illustrates how the tax chargeable on operating profit for the year is impacted by non-taxable items and available reliefs.

	2021 $ Million	2020 $ Million
Profit on ordinary activities before tax	434	1,318
Profit on ordinary activities multiplied by the standard rate of corporation tax in the UK of 27% (2020: 27%)	117	357
Effects of:		
Expenses not deductible for tax purposes	9	23
Income not taxable	(2)	(29)
Foreign withholding tax not creditable	1	2
Adjustments in relation to previous years	8	(5)
Foreign exchange	1	—
Rate change adjustment	(50)	(8)
Current tax on AT1 coupon	(53)	(45)
Total tax charge for year	31	295

11. Tax on profit on ordinary activities (continued)

(c) Aggregate current and deferred tax relating to items recognised directly in equity

	2021 $ Million	2020 $ Million
Deferred tax on remeasurement of pension in Statement of comprehensive income	58	—
Deferred tax associated with loss on DVA in Statement of comprehensive income	(5)	(30)
Deferred tax associated with Share based payment transactions in equity	—	16
Corporation Tax on IFRS 9 transitional adjustments	2	2
Deferred Tax on IFRS 9 transitional adjustments	(2)	(2)
Corporation tax on DVA adjustment in Retained Earnings	(8)	—
Total current and deferred tax charge/(credit) recognised in equity	45	(14)

(d) Factors that will affect future tax charges

The UK tax rate applying to CGML in the year was 27%. This includes a surcharge of 8% on the profits of banking companies applicable from 1 January 2016. Overseas branches provided for taxation at the appropriate rates for the countries in which they operate.

The main rate of corporation tax in the UK (excluding the surcharge) has been 19% from 1 April 2017. Finance Act 2021, which received Royal Assent on 10 June 2021, introduced an increase in the UK corporation tax rate to 25% from 1 April 2023 and the expected impact of this change has been reflected in deferred tax. Finance Act 2022, which received Royal Assent on 24 February 2022, introduced a decrease in the bank surcharge from 8% to 3% from 1 April 2023. As this was not substantively enacted as of the date of these accounts, the impact has not been reflected in deferred tax for 2021.

12. Cash at bank

The following amounts are included within cash at bank:

	2021 $ Million	2020 $ Million
Cash at bank held by other financial institutions	6,090	3,154
Cash at bank held by other group undertakings	2,373	2,351
	8,463	5,505

Included within cash held by other financial institutions is $2,620 million (2020: $1,237 million) that is held on behalf of clients and reported as restricted cash. Included within cash held by other group undertakings is $245 million (2020: $97 million) on behalf of clients and reported as restricted cash.

13. Derivatives

	2021 Fair Value		2020 Fair Value	
	Asset $ Million	Liability $ Million	Asset $ Million	Liability $ Million
Interest rate derivatives	88,005	91,967	155,996	165,703
Foreign exchange derivatives	14,711	12,861	23,938	24,265
Credit derivatives	16,252	16,610	10,338	10,281
Equity derivatives	19,479	21,835	16,774	19,597
Commodity derivatives	18,834	18,524	6,872	9,599
	157,281	161,797	213,918	229,445

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

- Swap contracts - commitments to settle in cash at a future date or dates ranging from a few days to a number of years, based on differentials between specified instruments or indices, as applied to a notional principal amount;
- Option contracts - the right but not the obligation to buy or sell within a specified time a financial asset at a fixed price over a specified time period; and
- Futures and forward contracts - commitments to buy or sell at a future date a financial asset at a fixed price.

Derivative transactions may be OTC agreements which are bilaterally negotiated with counterparties and either settled with those counterparties or novated and cleared through CCPs. Others are standardised contracts traded on an exchange with the CCP as the counterparty to the trade. Derivatives expose CGML to market, credit or liquidity risks which are described further in Note 29 'Financial instruments and risk management' and which may impact the amount, timing and certainty of future cash flows.

14. Financial assets at fair value through profit or loss

Financial assets measured at fair value through profit or loss form part of the trading portfolio of the Company and comprise marketable securities and other financial assets. The following amounts are included in financial assets held at fair value.

	2021 Total $ Million	2020 Total $ Million
Financial assets mandatorily at fair value through profit and loss		
Derivatives (Note 13)	157,281	213,918
Inventory		
Government bonds	28,937	37,843
Non-government bonds	11,486	10,908
Equities	20,990	23,110
Commodities	3,248	1,523
Commercial Paper	90	368
	64,751	73,752
Equity securities held for investment (Note 16)	106	99
Financial assets designated at fair value through profit or loss		
Collateralised financing transactions	81,701	77,331
	303,839	365,100

Included in Derivatives are listed instruments amounting to $6,465 million (2020: $4,193 million). Included in Inventory are listed instruments amounting to $60,435 million (2020: $68,133 million).

15. Financial assets and liabilities accounting classifications and fair values

The table below sets out the Company's classification of each class of financial assets and liabilities, and their fair values. Those measured at fair value, whether mandatorily or designated as such, are further allocated to levels in the fair value hierarchy in the table on the following page.

31 December 2021	Mandatorily at FVTPL $ Million	Designated at FVTPL $ Million	Amortised cost $ Million	Mandatorily at FVTPL - equity investments $ Million	Total carrying amount $ Million	Fair value $ Million
Cash	—	—	8,463	—	8,463	8,463
Derivatives	157,281	—	—	—	157,281	157,281
Inventory	64,751	—	—	—	64,751	64,751
Equity securities held for investment	—	—	—	106	106	106
Collateralised financing transactions	—	81,701	76,862	—	158,563	158,563
Cash collateral pledged	—	—	35,263	—	35,263	35,263
Trade debtors	—	—	21,160	—	21,160	21,160
Other debtors	—	—	376	—	376	376
	222,032	81,701	142,124	106	445,963	445,963
Bank loans and overdrafts	—	—	7,201	—	7,201	7,302
Derivatives	161,797	—	—	—	161,797	161,797
Securities sold but not yet purchased	65,997	—	—	—	65,997	65,997
Collateralised financing transactions	—	43,245	63,067	—	106,312	106,312
Hybrid financial liabilities	—	26,143	—	—	26,143	26,143
Cash collateral held	—	—	27,948	—	27,948	27,948
Trade creditors	—	—	16,385	—	16,385	16,385
Other creditors and accruals	—	—	2,044	—	2,044	2,044
Subordinated loans	—	—	8,600	—	8,600	9,743
	227,794	69,388	125,245	—	422,427	423,671

15. Financial assets and liabilities accounting classifications and fair values (continued)

31 December 2020	Mandatorily at FVTPL $ Million	Designated at FVTPL $ Million	Amortised cost $ Million	Mandatorily at FVTPL - equity investments $ Million	Total carrying amount $ Million	Fair value $ Million
Cash	—	—	5,505	—	5,505	5,505
Derivatives	213,918	—	—	—	213,918	213,918
Inventory	73,752	—	—	—	73,752	73,752
Equity securities held for investment	—	—	—	99	99	99
Collateralised financing transactions	—	77,331	76,864	—	154,195	154,195
Cash collateral pledged	—	—	39,570	—	39,570	39,570
Trade debtors	—	—	15,438	—	15,438	15,438
Other debtors	—	—	261	—	261	261
	287,670	77,331	137,638	99	502,738	502,738
Bank loans and overdrafts	—	—	7,347	—	7,347	7,466
Derivatives	229,445	—	—	—	229,445	229,445
Securities sold but not yet purchased	56,641	—	—	—	56,641	56,641
Collateralised financing transactions	—	47,187	75,922	—	123,109	123,109
Hybrid financial liabilities	—	16,677	—	—	16,677	16,677
Cash collateral held	—	—	29,444	—	29,444	29,444
Trade creditors	—	—	9,851	—	9,851	9,851
Other creditors and accruals	—	—	1,943	—	1,943	1,943
Subordinated loans	—	—	10,600	—	10,600	12,250
	286,086	63,864	135,107	—	485,057	486,826

15. Financial assets and liabilities accounting classifications and fair values (continued)

The following table shows an analysis of financial assets and liabilities measured at fair value by level in the hierarchy:

31 December 2021	Level 1 $ Million	Level 2 $ Million	Level 3 $ Million	Total $ Million
Financial assets mandatorily at fair value				
Derivatives	7	154,310	2,964	157,281
Government bonds	19,950	8,958	29	28,937
Non-government bonds	1,206	9,619	661	11,486
Equities	20,632	316	42	20,990
Commodities	—	3,248	—	3,248
Commercial Paper	—	90	—	90
	41,795	176,541	3,696	222,032
Financial assets designated at fair value				
Collateralised financing transactions	—	81,609	92	81,701
Other financial assets at fair value through P&L				
Equity securities held for investment	—	—	106	106
	41,795	258,150	3,894	303,839
Financial liabilities mandatorily at fair value				
Derivatives	27	158,035	3,735	161,797
Securities sold but not yet purchased	50,399	15,558	40	65,997
	50,426	173,593	3,775	227,794
Financial liabilities designated at fair value				
Collateralised financing transactions	—	43,245	—	43,245
Hybrid financial liabilities	—	21,972	4,171	26,143
	50,426	238,810	7,946	297,182

15. Financial assets and liabilities accounting classifications and fair values (continued)

31 December 2020	Level 1 $ Million	Level 2 $ Million	Level 3 $ Million	Total $ Million
Financial assets mandatorily at fair value				
Derivatives	36	210,874	3,008	213,918
Government bonds	35,562	2,257	24	37,843
Non-government bonds	1,231	9,192	485	10,908
Equities	21,374	1,715	21	23,110
Commodities	—	1,523	—	1,523
Commercial Paper	—	368	—	368
	58,203	225,929	3,538	287,670
Financial assets designated at fair value				
Collateralised financing transactions	16	77,222	93	77,331
Other financial assets at fair value through P&L				
Equity securities held for investment	—	—	99	99
	58,219	303,151	3,730	365,100
Financial liabilities mandatorily at fair value				
Derivatives	31	226,496	2,918	229,445
Securities sold but not yet purchased	51,436	5,082	123	56,641
	51,467	231,578	3,041	286,086
Financial liabilities designated at fair value				
Collateralised financing transactions	—	47,187	—	47,187
Hybrid financial liabilities	—	12,185	4,492	16,677
	51,467	290,950	7,533	349,950

During 2021, above the $100 million threshold, a total balance of $10.0 billion was transferred to Level 2 from Level 1 and $3.7 billion was transferred to Level 1 from Level 2. Transfers between Level 1 and Level 2 were driven by changes in Bloomberg Valuation Service (BVAL) scores. All BVAL evaluated securities receive a BVAL Score, a proprietary measure on a scale of 1–10 of the amount and consistency of the market inputs used to calculate each price.

The following table shows an analysis of financial assets and liabilities classified as held at amortised cost by level in the hierarchy:

31 December 2021	Level 1 $ Million	Level 2 $ Million	Level 3 $ Million	Total $ Million
Financial assets at amortised cost				
Cash	—	8,463	—	8,463
Collateralised financing transactions	—	76,862	—	76,862
Cash collateral pledged	—	35,263	—	35,263
Trade debtors	—	21,160	—	21,160
Other debtors	—	376	—	376
	—	142,124	—	142,124
Financial liabilities at amortised cost				
Bank loans and overdrafts	—	7,201	—	7,201
Collateralised financing transactions	—	63,067	—	63,067
Cash collateral held	—	27,948	—	27,948
Trade creditors	—	16,385	—	16,385
Other creditors and accruals	—	2,044	—	2,044
Subordinated loans	—	8,600	—	8,600
	—	125,245	—	125,245

15. Financial assets and liabilities accounting classifications and fair values (continued)

31 December 2020	Level 1 $ Million	Level 2 $ Million	Level 3 $ Million	Total $ Million
Financial assets at amortised cost				
Cash	—	5,505	—	5,505
Collateralised financing transactions	—	76,864	—	76,864
Cash collateral pledged	—	39,570	—	39,570
Trade debtors	—	15,438	—	15,438
Other debtors	—	261	—	261
	—	137,638	—	137,638
Financial liabilities at amortised cost				
Bank loans and overdrafts	—	7,347	—	7,347
Collateralised financing transactions	—	75,922	—	75,922
Cash collateral held	—	29,444	—	29,444
Trade creditors	—	9,851	—	9,851
Other creditors	—	1,943	—	1,943
Subordinated loans	—	10,600	—	10,600
	—	135,107	—	135,107

Given the short term nature and characteristics of collateralised financing transactions, trade debtors, other debtors, trade creditors, other creditors and accruals the fair value has been assumed to approximate the carrying value. The fair value of subordinated loans has been calculated using the present value of future estimated cash flows, discounted using a discount rate of USD 3 month Overnight Indexed Swap (OIS) plus the Company's credit spread as at 31 December 2021.

Fair Value Measurement

IFRS 13 – *Fair Value Measurement* defines fair value, establishes a 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. Among other things, the standard requires the Company to maximise the use of observable inputs and minimise the use of unobservable inputs when measuring fair value.

Under IFRS 13, the probability of default of a counterparty is factored into the valuation of derivative positions and includes the impact of the Company's own credit risk on derivatives and other liabilities measured at fair value.

Fair Value Hierarchy

The calculation of fair value incorporates the Company's estimate of the fair value of financial assets and financial liabilities. Other entities may use different valuation methods and assumptions in determining fair values, so comparisons of fair values between entities may not necessarily be meaningful.

The Company 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.

The 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.

15. Financial assets and liabilities accounting classifications and fair values (continued)

Fair Value Hierarchy (continued)

The Company considers relevant and observable market prices in its valuations where possible. The frequency of transactions and the size of the bid-ask spread when comparing similar transactions are factors that are driven by the liquidity of markets and determine the relevance of observed prices in those markets.

Financial instruments may move between levels in the fair value hierarchy when factors such as the observability of pricing information, or of market input parameters, change. The Company's policy with respect to transfers between levels of the fair value hierarchy is to recognise transfers into and out of each level as of the end of the reporting period.

Determination of Fair Value

As set out more fully in Note 1(c) of these financial statements, when available, the Company generally uses quoted market prices in an active market to calculate the fair value of a financial asset or liability and classifies such items as Level 1. In some specific cases where a market price is available, the Company will make use of alternative pricing techniques, such as matrix pricing, whereby a similar instrument is used as a proxy, to calculate more appropriate fair value for the instrument being valued, in which case the items are classified as Level 2.

If quoted market prices are not available, fair values are based upon internally developed valuation techniques that use, where possible, current market-based or independently sourced market input parameters such as interest rates, foreign exchange rates and option volatilities. Instruments 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. Similarly, an instrument may be classified in Level 2 if the unobservable inputs are not deemed significant to the valuation.

The Company may also apply a price-based methodology, which utilises, 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 considered in determining the relevance of prices observed from those markets. If relevant and observable prices are available for all significant pricing inputs, those instruments would 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. 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 fair value measurement and disclosure of each instrument if such information is used as part of that determination.

Set out below is a description of the procedures used by CGML to determine the fair value of financial assets and financial liabilities irrespective of whether they are measured at fair value mandatorily or have been designated as such. This description includes an indication of the level in the fair value hierarchy in which each financial instrument is generally classified. Where appropriate, it also includes details of the valuation models, the key inputs to those models and any significant assumptions.

Individual business units are responsible for providing the fair value measurements for substantially all trading account assets and liabilities. Fair value measurements of assets and liabilities are determined using various techniques including, but not limited to, discounted cash flows and internal models, such as option and correlation models. Management ensures that the resulting fair values are appropriate for financial reporting through an internal independent price verification process, which is defined and governed by established policies, standards and procedures. Results from this independent price verification process are reported to management via formally governed committees, as well as the firm's auditors and regulators.

15. Financial assets and liabilities accounting classifications and fair values (continued)

Determination of Fair Value (continued)

Any pricing models used in measuring the fair value are governed by an independent control framework. Although the models are developed and tested by the individual business units, they are independently validated by the appropriate independent internal control functions, separate from the trading businesses. The purpose of this independent control framework is to assess model risk arising from models' theoretical soundness, calibration techniques where needed, and the appropriateness of the model for a specific product in a defined market. To ensure their continued applicability, models are subject to independent annual model review.

Market valuation adjustments

Market 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 Citi 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

Counterparty credit-risk adjustments are applied to derivatives, such as over-the-counter uncollateralised derivatives, where the base valuation uses market parameters based on the relevant base interest rate curves. Not all counterparties have the same credit risk as that implied by the relevant base curve, so it is necessary to consider the market view of the credit risk of a counterparty in order to estimate the fair value of such an item.

Bilateral or "own" credit-risk adjustments are applied to reflect the Company's own credit risk when valuing derivative liabilities and other liabilities measured at fair value. Counterparty and own credit adjustments consider the expected future cash flows between the Company and its counterparties under the terms of the instrument and the effect of credit risk on the valuation of those cash flows, rather than a point-in-time assessment of the current recognised net asset or liability. Furthermore, the credit-risk adjustments take into account the effect of credit-risk mitigants, such as pledged collateral and any legal right of offset (to the extent such offset exists) with a counterparty through arrangements such as netting agreements.

Derivatives

Exchange-traded derivatives in active markets are generally fair valued using quoted market prices (i.e. exchange prices) and are therefore classified as Level 1 of the fair value hierarchy.

The majority of derivatives entered into by the Company are executed over the counter and are valued using a combination of external prices and internal valuation techniques, including benchmarking to pricing vendor services. These derivative instruments are classified as either Level 2 or Level 3 depending on the observability of the significant inputs to the model. 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 type of inputs may include interest rate yield curves, credit spreads, foreign exchange rates, volatilities and correlations.

The Company discounts future cash flows using appropriate interest rate curves. In the case of collateralised interest rate derivatives the Company follows the terms in the collateral agreement governing the transaction. The agreements generally provide that an OIS curve is used. The OIS curves reflect the interest rate paid on the collateral against the fair value of these derivatives. Citi uses the relevant benchmark curve for the currency of the derivative (e.g., the U.S. Dollar London Interbank Offered Rate (LIBOR) for U.S. dollar derivatives) as the discount rate for uncollateralized derivatives.

Government bonds, corporate bonds and equities

CGML uses quoted market prices to determine the fair value of government bonds and exchange-traded equities; such items are typically classified as Level 1 or Level 2 of the fair value hierarchy.

15. Financial assets and liabilities accounting classifications and fair values (continued)

Government bonds, corporate bonds and equities (continued)

For government bonds, corporate bonds and equities traded over the counter, for which a quoted price is not available, CGML generally determines fair value utilising internal valuation techniques, including discounted cash flows, price based and internal models. Fair value estimates from internal valuation techniques are verified, where possible, to prices obtained from independent vendors. Vendors compile prices from various sources and may apply alternative pricing techniques, such as matrix pricing, whereby a similar instrument is used as a proxy for similar bonds or loans where no price is observable. If available, the Company may also use quoted prices for recent trading activity of assets with similar characteristics to the bond being valued. Government bonds, corporate bonds and equities 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 is necessary to reflect differences in the terms of the actual security being valued, or prices from independent sources are insufficient to corroborate valuation, a security is generally classified as Level 3

Collateralised financing transactions

No quoted prices exist for such financial instruments and 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. Expected cash flows are discounted using market rates appropriate to the maturity of the instrument as well as the nature and amount of collateral taken or received. Generally, when such instruments are held at fair value, they are classified within Level 2 of the fair value hierarchy as the inputs used in the valuation are readily observable.

Changes in Level 3 Fair Value Category

The following tables present the changes in the Level 3 fair value category for the years ended 31 December 2021 and 31 December 2020. Gains and losses presented below include changes in the fair value related to both observable and unobservable inputs. CGML often hedges positions with offsetting positions that are classified in a different level.

		Gain/(loss) recorded in the profit and loss statement								
2021	At 1 January 2021	Realised	Unrealised	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	At 31 December 2021
	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million
Financial assets mandatorily at fair value										
Derivatives	3,008	289	(129)	199	(34)	—	(751)	2,848	(2,466)	2,964
Government bonds	24	23	3	30	(90)	—	—	138	(99)	29
Non-government bonds	485	76	(122)	1,567	(1,197)	—	—	200	(348)	661
Equities	21	23	5	39	(141)	—	—	106	(11)	42
Financial assets designated at fair value										
Collateralised financing transactions	93	(11)	14	217	—	—	(224)	64	(61)	92
Other assets at fair value through P&L										
Equity securities held for investment	99	—	7	—	—	—	—	—	—	106
	3,730	400	(222)	2,052	(1,462)	—	(975)	3,356	(2,985)	3,894

		(Gain)/loss recorded in the profit and loss statement								
	At 1 January 2021	Realised	Unrealised	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	At 31 December 2021
Financial liabilities held for trading	$ Million	$ Million		$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million
Derivatives	2,918	191	1,020	157	(2)	—	(374)	2,858	(3,033)	3,735
Securities sold but not yet purchased	123	18	(81)	10	(10)	30	(41)	24	(33)	40
Financial liabilities designated at fair value										
Hybrid financial liabilities	4,492	(104)	(177)	—	—	2,371	(1,900)	266	(777)	4,171
	7,533	105	762	167	(12)	2,401	(2,315)	3,148	(3,843)	7,946

15. Financial assets and liabilities accounting classifications and fair values (continued)

2020	At 1 January 2020	Gain/(loss) recorded in the profit and loss statement		Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	At 31 December 2020
		Realised	Unrealised							
	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million
Financial assets mandatorily at fair value										
Derivatives	1,432	645	(439)	118	(31)	—	(545)	2,128	(300)	3,008
Government bonds	14	8	(7)	29	(36)	—	—	18	(2)	24
Non-government bonds	257	54	7	802	(874)	—	(3)	303	(61)	485
Equities	14	2	(9)	23	(49)	—	—	41	(1)	21
Financial assets designated at fair value										
Collateralised financing transactions	102	(12)	10	179	—	—	(186)	—	—	93
Other assets at fair value through P&L										
Equity securities held for investment	71	(18)	46	—	—	—	—	—	—	99
	1,890	679	(392)	1,151	(990)	—	(734)	2,490	(364)	3,730

	At 1 January 2020	(Gain)/loss recorded in the profit and loss statement		Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	At 31 December 2020
		Realised	Unrealised							
Financial liabilities held for trading	$ Million	$ Million		$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million
Derivatives	1,349	643	(253)	4	39	—	(286)	2,098	(676)	2,918
Securities sold but not yet purchased	350	(94)	157	—	1	29	(105)	49	(264)	123
Financial liabilities designated at fair value										
Collateralised financing transactions	3,358	312	217	—	—	2,884	(2,729)	518	(68)	4,492
	5,057	861	121	4	40	2,913	(3,120)	2,665	(1,008)	7,533

During 2021 there has been a $0.6 billion increase in total Level 3 balances driven by a $0.2 billion increase on assets and by a $0.4 billion increase on liabilities.

The Level 3 increase on assets was driven by a $3.4 billion increase on Level 3 transfer-ins which was partly offset by a $3.0 billion decrease Level 3 transfer-outs. The Level 3 asset increase on transfer-ins was driven by $1.0 billion on equity derivatives mainly on equity options, by $0.7 billion on credit derivatives mainly on credit default swaps, by $0.6 billion on interest rate derivatives mainly on exotic interest rate derivatives and callable swaps and by $0.4 billion on commodity derivatives mainly on commodity swaps. The Level 3 asset decrease on transfer-outs was driven by $0.8 billion on credit derivatives mainly on credit default swaps, by $0.7 billion on commodity derivatives mainly on commodity swaps and commodity options, by $0.6 billion on interest rate derivatives mainly on inflation linked derivatives and callable swaps and by $0.3 billion on foreign exchange derivatives mainly on foreign exchange options.

The Level 3 increase on liabilities was driven by a $3.1 billion increase on Level 3 transfer-ins, by a $0.9 billion increase on gains/losses and by a $0.2 billion increase on purchases which was partly offset by a $3.8 billion decrease on Level 3 transfer-outs. The Level 3 liability increase on transfer-ins was driven by $1.2 billion on equity derivatives mainly on equity options, by $0.6 billion on credit derivatives mainly on credit default swaps and by $0.6 billion on interest rate derivatives mainly on inflation linked derivatives, callable swaps and exotic interest rate derivatives. The Level 3 liability increase on gains/losses was driven by a $0.8 billion on equity derivatives mainly on equity options and hybrid derivatives. The Level 3 liability increase on purchases was driven by equity options and commodity options. The Level 3 liability decrease on transfer-outs was driven by $0.8 billion on hybrid financial liabilities mainly driven by structured notes, by $1.0 billion on equity derivatives mainly on equity options, by $0.7 billion on interest rate derivatives mainly on inflation linked derivatives, interest rate swaps and callable swaps and by $0.7 billion on credit derivatives mainly on credit default swaps.

15. Financial assets and liabilities accounting classifications and fair values (continued)

Level 3 transfer-ins on assets and liabilities were driven by significance testing, Level 3 transfer-outs on assets and liabilities were driven by significance testing, methodology changes and increased trading activity observability.

Fair Value Hierarchy Classification

Unobservable inputs

During the year, total changes in fair value, representing a loss of $688 million (2020: $695 million loss) was recognised in the income statement relating to items where fair value was estimated using a valuation technique that incorporated one or more significant inputs based on unobservable market data. As these valuation techniques were based upon assumptions, changing the assumptions would change the estimate of fair value. The potential impact of using reasonably possible assumptions in line with those used for the Company's Regulatory Prudential Adjustment for the valuation techniques for both observable and unobservable market data has been quantified as approximately $647 million downside and $659 million upside (2020: $515 million downside and $359 million upside). The main contributors to this impact were Equity Markets, Credit Trading and Interest Rates Trading businesses.

Valuation uncertainty is computed on a quarterly basis. The methodology used to derive the impact across each product is determined by applying adjustments to the price or significant model input parameters used in the valuation.

The adjustments are typically computed with reference to proxy analysis using third party data. Examples of the approach used to derive sensitivity adjustments are outlined below:

- Equity Markets: Valuation uncertainty is computed from independent pricing and quote dispersion data sources.
- Credit Trading: Valuation uncertainty is computed from a combination of consensus market data, broker data and proxy analysis using third party data providers.
- Commodity Markets: Valuation uncertainty is computed from a combination of consensus market data and proxy analysis using third party data providers.
- Interest Rate Trading: Valuation uncertainty is computed from a combination of consensus market data and proxy analysis using third party data providers.

Valuation Techniques and Inputs for Level 3 Fair Value Measurements

The following tables present the valuation techniques covering the majority of Level 3 inventory and the most significant unobservable inputs used in Level 3 fair value measurements as of 31 December 2021 and 31 December 2020. Note that these tables represent key drivers by disclosures line and may not agree back to the Changes in Level 3 Fair Value Category table.

15. Financial assets and liabilities accounting classifications and fair values (continued)

2021	Fair Value $ Million	Methodology	Input	Range of Inputs Min	Range of Inputs Max	Unit
Assets						
Derivative assets	2,964					
Equity Derivatives		Model-based	Equity Volatility	0.1	290.6	%
		Model-based	Equity-FX Correlation	-95.0	80.0	%
		Model-based	Equity Forward	58.0	165.8	%
Commodity Derivatives		Model-based	Forward Price	8.0	599.4	%
		Model-based	Commodity Volatility	10.9	188.3	%
		Model-based	Commodity Correlation	-50.5	89.8	%
Credit Derivatives		Model-based	Credit Spread	1.0	874.7	bps
Foreign Exchange Derivatives		Model-based	Yield	-0.7	0.6	%
Inventory	732					
Non-government bonds		Model-based	Equity Volatility	0.1	290.6	%
		Model-based	Equity-FX Correlation	-95.0	80.0	%
		Model-based	Equity Forward	58.0	165.8	%
Equity		Price-based	Price	0.0	12,874.6	$
Liabilities						
Derivative liabilities	3,735					
Commodity Derivatives		Model-based	Forward Price	8.0	599.4	%
		Model-based	Commodity Volatility	10.9	188.3	%
		Model-based	Commodity Correlation	-50.5	89.8	%
Equity Derivatives		Model-based	Equity Volatility	0.1	290.6	%
		Model-based	Equity-Equity Correlation	-6.5	99.0	%
		Model-based	Commodity Correlation	-50.5	89.8	%
		Model-based	Equity-FX Correlation	-95.0	80.0	%
		Model-based	Equity Forward	58.0	165.8	%
		Model-based	Dividend amount	0.1	264.5	$
		Model-based	FX Volatility	0.1	41.8	%
		Model-based	Equity-IR Correlation	-3.5	60.0	%
Credit Derivatives		Model-based	Credit Spread	1.0	874.7	bps
Foreign Exchange Derivatives		Model-based	Yield	-0.7	0.6	%
Interest Rate Derivatives		Model-based	IR-FX Correlation	-31.9	51.6	%
Securities sold but not yet purchased	40	Price-based	Price	0.0	12,874.6	$
Hybrid financial liabilities	4,171	Model-based	Equity Volatility	0.1	290.6	%
		Model-based	FX Volatility	0.1	41.8	%
		Model-based	Equity-IR Correlation	-3.5	60.0	%
		Model-based	Commodity Correlation	-50.5	89.8	%
		Model-based	Equity-FX Correlation	-95.0	80.0	%
		Model-based	Equity Forward	58.0	165.8	%
		Model-based	IR Normal Volatility	0.2	0.9	%

15. Financial assets and liabilities accounting classifications and fair values (continued)

2020	Fair Value $ Million	Methodology	Input	Range of Inputs Min	Range of Inputs Max	Unit
Assets						
Derivative assets	3,008					
Interest Rate Derivatives		Model-based	IR Normal Volatility	0.1	0.5	%
		Model-based	Inflation Volatility	0.3	2.4	%
Equity Derivatives		Model-based	Equity-FX Correlation	-84.8	47.3	%
Commodity Derivatives		Model-based	Forward Price	15.4	262.0	%
		Model-based	Commodity Volatility	0.2	80.2	%
		Model-based	Commodity Correlation	-44.9	95.9	%
Foreign Exchange Derivatives		Model-based	FX Volatility	1.7	12.6	%
Inventory	531					
Government bonds		Price-based	Price	—	865.9	$
Non-government bonds		Price-based	Price	—	2,264.7	$
Equity		Price-based	Price	0.0	865.9	$
Liabilities						
Derivative liabilities	2,918					
Commodity Derivatives		Model-based	Forward Price	15.4	262.0	%
		Model-based	Commodity Volatility	0.2	80.2	%
		Model-based	Commodity Correlation	-44.9	95.9	%
Equity Derivatives		Model-based	Equity Volatility	15.7	70.7	%
		Model-based	Equity-Equity Correlation	-75.0	98.8	%
		Model-based	Equity-FX Correlation	-84.8	47.3	%
Foreign Exchange Derivatives		Model-based	FX Volatility	1.7	12.6	%
Interest Rate Derivatives		Model-based	Inflation Volatility	0.3	2.4	%
Securities sold but not yet purchased	123	Price-based	Price	—	865.9	$
Hybrid financial liabilities	4,492	Model-based	Equity Volatility	14.1	91.4	%
		Model-based	Forward Price	15.4	262.0	%
		Model-based	Commodity Volatility	0.2	80.2	%
		Model-based	IR Normal Volatility	0.1	0.7	%
		Model-based	IR-FX Correlation	-31.9	73.8	%
		Model-based	IR-IR Correlation	-10.0	56.1	%

Sensitivity to unobservable inputs and interrelationships between unobservable inputs

The impact of 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 impact 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 the sensitivities and interrelationships of the most significant unobservable inputs used by the Company in Level 3 fair value measurements.

15. Financial assets and liabilities accounting classifications and fair values (continued)

Yield

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

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.

Volatility

Volatility represents the speed and severity of market price changes and is a key factor in pricing options. Typically, instruments can become more expensive if volatility increases. For example, as an index becomes more volatile, the cost to Citi of maintaining a given level of exposure increases because more frequent rebalancing of the portfolio is required. 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.

Correlation

Correlation is a measure of the co-movement between two or more variables. A variety of correlation-related assumptions are required for a wide range of instruments, including equity baskets, foreign-exchange options and many other instruments. For almost all of these instruments, correlations are not directly observable in the market and must be estimated using historical information. Estimating correlation can be especially difficult where it may vary over time. Extracting correlation information from market data can require judgement. Changes in correlation levels can have a major impact, favourable or unfavourable, on the value of an instrument, depending on its nature.

Qualitative discussion of the ranges of significant unobservable inputs

The following section describes the ranges of the most significant unobservable inputs used by the Company in Level 3 fair value measurements. The level of aggregation and the diversity of instruments held by the Company lead to a wide range of unobservable inputs that may not be evenly distributed across the Level 3 inventory.

Price

The price input is a significant unobservable input for certain fixed income instruments. For these instruments, the price input is expressed as a percentage of the notional amount, with a price of 100 meaning that the instrument is valued at par. For most of these instruments, the price varies between zero and slightly above 100. Relatively illiquid assets that have experienced significant losses since issuance, such as certain asset-backed securities, are at the lower end of the range, whereas most investment grade corporate bonds will fall in the middle to the higher end of the range. The price input is also a significant unobservable input for certain equity securities; however, the range of price inputs varies depending on the nature of the position, the number of shares outstanding and other factors.

15. Financial assets and liabilities accounting classifications and fair values (continued)

Yield

Ranges for the yield inputs vary significantly depending upon the type of security. For example, securities that typically have lower yields, such as German or U.S. government bonds, will fall on the lower end of the range, while more illiquid securities or securities with lower credit quality, such as certain residual tranche asset-backed securities, will have much higher yield inputs.

Volatility

Similar to correlation, asset-specific volatility inputs vary widely by asset type. For example, ranges for foreign exchange volatility are generally lower and narrower than equity volatility. Equity volatilities are wider due to the nature of the equities market and the terms of certain exotic instruments. For most instruments, the interest rate volatility input is on the lower end of the range; however, for certain structured or exotic instruments (such as market-linked deposits or exotic interest rate derivatives), the range is much wider.

Correlation

There are many different types of correlation inputs, including credit correlation, cross-asset correlation (such as equity-interest rate correlation), and same-asset correlation (such as interest rate-interest rate correlation). Correlation inputs are generally used to value hybrid and exotic instruments. Generally, same-asset correlation inputs have a narrower range than cross-asset correlation inputs. However, due to the complex nature of many of these instruments, the ranges for correlation inputs can vary widely across portfolios.

16. Equity securities held for investment

	Unlisted Investments 2021 $ Million	Unlisted Investments 2020 $ Million
Fair value		
At 1 January	99	71
Additions	—	1
Disposals	—	—
Gains recognised in income statement	7	27
At 31 December	106	99

17. Involvement with unconsolidated structured entities

The table below describes the types of Variable Interest Entities (VIEs) that are not controlled by CGML but in which it holds an interest.

		2021		2020	
Type of structured entity	**Nature and purpose**	**Total VIE assets $ Million**	**CGML exposure $ Million**	**Total VIE assets $ Million**	**CGML exposure $ Million**
Investment Funds	Fund/Limited Partnership Structure	200	1	249	—
Client Intermediation	Credit Derivative Repack Vehicle/Credit Derivatives	213	211	46	43
Collateralized Loan Obligations	Synthetic CDO	2	1	—	—
		415	213	295	43

Investment funds

The objective of these funds is to seek income and capital gains from investing in US government securities. Funding is provided by investors in the fund, who are professional or institutional investors. CGML is the derivative swap counterparty to the fund which is the source of its exposure. The derivative transactions are FX options and swaps.

Client Intermediation

Client intermediation transactions represent a range of transactions designed to provide investors with specified returns based on the returns of an underlying security, referenced asset or index. The Company's involvement in these transactions includes being the counterparty to the entity's derivative instruments. The derivative transactions are FX options and swaps.

Collateralised Loan Obligations (CLOs)

A collateralised 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. Citi 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. 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.

18. Other Assets

The following amounts are included in Other Assets:

	2021 $ Million	2020 $ Million
Cash collateral pledged	35,263	39,570
Trade debtors	21,155	15,422
Other debtors	603	456
Prepayments and accrued income	23	28
Corporation tax receivable	113	73
Deferred tax asset (Note 22)	337	251
Intangible fixed assets (Note 19)	244	213
Tangible fixed assets - equipment (Note 19)	1	1
Tangible fixed assets - premises improvement (Note 19)	1	2
	57,740	56,016

Included within Trade Debtors are receivables from central clearing counterparties, securities trading receivables outside standard settlement, and other brokerage receivables.

Other Assets includes the following balances due from other Citi affiliates:

	2021 $ Million	2020 $ Million
Trade debtors	5,159	3,837
Cash collateral pledged	4,488	5,053
Other debtors	206	120
	9,853	9,010

19. Intangible and Tangible fixed assets

The movement in Intangible and Tangible fixed assets for 2021 was as follows:

2021	Intangible	Tangible Fixed Assets	
	Software	Equipment	Premises improvements
	$ Million	$ Million	$ Million
Cost			
At 1 January 2021	670	6	13
Additions	83	—	—
Disposals	—	—	—
At 31 December 2021	753	6	13
Accumulated amortisation/depreciation			
At 1 January 2021	457	5	11
Charge for the year (Note 7)	52	—	1
At 31 December 2021	509	5	12
Net book value			
At 31 December 2021	244	1	1

The movement in Intangible and Tangible fixed assets for 2020 was as follows:

2020	Intangible	Tangible Fixed Assets	
	Software	Equipment	Premises improvements
	$ Million	$ Million	$ Million
Cost			
At 1 January 2020	608	5	13
Additions	64	1	—
Disposals	(2)	—	—
At 31 December 2020	670	6	13
Accumulated amortisation/depreciation			
At 1 January 2020	408	4	10
Charge for the year (Note7)	49	1	1
At 31 December 2020	457	5	11
Net book value			
At 31 December 2020	213	1	2

20. Investments in subsidiary and related undertakings

	2021 $ Million	2020 $ Million
Cost		
At 1 January	2,125	1,487
Additions	1,705	642
Disposals	—	(4)
At 31 December	3,830	2,125
Impairment		
At 1 January	—	88
(Reversal)/Charge for the year:	—	(88)
At 31 December	—	—
Net book value		
At 31 December	3,830	2,125

Details of all related undertakings held at 31 December 2021 as required by CA2006 SI 2008 No 410 Sch 4 Para 1 are set out below. All undertakings have a year end of 31 December and all of the Company's holdings are of ordinary shares.

On 2 February 2021, CGML made a capital contribution of $700 million to its subsidiary, CGME. On 12 April 2021, CGME received further capital contribution of $500 million from CGML. On 23 June 2021 CGML made further capital contribution of $503 million to its subsidiary, CGME. During 2020 CGML made a total of $642 million of capital contribution to CGME.

Citigroup Global Markets Luxembourg S.a.R.L was liquidated on 7 December 2021.

Due to the increased performance of CGME in 2020, the $88 million of investment write down from 2019 was reversed in the prior year in accordance with principal accounting policy 1(c).

Directly held subsidiary undertakings (all 100% owned)

Name	Registered address
Citigroup Global Markets Europe AG	16 Reuterweg, Frankfurt am Main 30323, Germany
Citigroup Global Markets Luxembourg S.a.R.L. (liquidated in December 2021)	31, Z.A. Bourmicht, L-8070 Bertrange, Luxembourg
Citigroup Global Markets Funding Luxembourg SCA	31, Z.A. Bourmicht, L-8070 Bertrange, Luxembourg
Citigroup Global Markets Funding Luxembourg GP S.a.R.L.	31, Z.A. Bourmicht, L-8070 Bertrange, Luxembourg
Citi Global Wealth Management S.A.M.	Monte Carlo Palace, 7-9 Boulevard des Moulins, MC98000 Monaco

21. Pledged assets

Collateral accepted as security for assets

The fair value of financial assets including government bonds, Eurobonds and other corporate bonds, equities, and cash accepted that were permitted to be sold or re-pledged in the absence of default was $342 billion (2020: $351 billion). The fair value of the collateral accepted that had been re-pledged at 31 December 2021, was $292 billion (2020: $301 billion). The Company was obliged to return equivalent securities. Where the collateral was used in secured financing transactions, these transactions were conducted under terms that are usual and customary to standard lending and securities borrowing and lending activities.

Where the collateral was used for derivative transactions, this was conducted under industry-standard ISDA (International Swaps and Derivatives Association and CSA (Credit Support Annex) agreements.

Financial assets pledged to secure liabilities

The total value of purchased financial assets including government bonds, Eurobonds and other corporate bonds, equities and cash that were pledged as collateral for liabilities at 31 December 2021, was $80 billion (2020: $90 billion). These transactions were conducted under terms that are usual and customary to standard lending and securities borrowing and lending activities.

The table below sets out an analysis of balance sheet encumbered (pledged) and unencumbered (not pledged) assets.

The asset encumbrance analyses below is unaudited.

An asset shall be treated as encumbered if it has been pledged or if it is subject to any form of arrangement to secure, collateralise or credit enhance any transaction from which it cannot be freely withdrawn. Correspondingly an asset shall be deemed to be unencumbered where CGML is not subject to any legal, contractual, regulatory, or other restriction preventing it from liquidating, selling, transferring, assigning or, generally, disposing of such asset via active outright sale or repurchase agreement.

21. Pledged assets (continued)

2021	Encumbered $ Million	Non-encumbered $ Million	Total $ Million
Assets			
Cash at bank and in hand	—	8,463	8,463
Equity instruments	18,535	2,455	20,990
Debt securities	39,918	3,843	43,761
Collateralised financing transactions	—	158,563	158,563
Other assets	21,560	197,944	219,504
Total	80,013	371,268	451,281
Collateral Received			
Equity instruments	45,819	1,430	47,249
Debt securities	245,692	34,585	280,277
Other collateral received	—	14,983	14,983
Total	291,511	50,998	342,509

2020	Encumbered $ Million	Non-encumbered $ Million	Total $ Million
Assets			
Cash at bank and in hand	—	5,505	5,505
Equity instruments	19,866	3,244	23,110
Debt securities	47,145	3,497	50,642
Collateralised financing transactions	—	154,195	154,195
Other assets	23,013	249,594	272,607
Total	90,024	416,035	506,059
Collateral Received			
Equity instruments	48,780	2,142	50,922
Debt securities	252,678	30,550	283,228
Other collateral received	—	17,274	17,274
Total	301,458	49,966	351,424

22. Deferred tax asset

The movement in deferred tax in the year is as follows:

	2021 $ Million	2020 $ Million
At 1 January	251	202
Deferred tax movement related to IFRS 9 adjustments	—	2
Income statement movement relating to deferred tax	79	33
Deferred tax movement in equity	7	14
At 31 December	337	251

Deferred tax is recognised on the Company's temporary differences as it is considered probable that taxable profits will arise against which these can be utilised. The deferred tax asset is recognised at the tax rates at which the temporary differences are expected to reverse.

There is also a deferred tax liability of $181 million on the pension asset which is reflected in Note 8 Pension.

22. Deferred tax asset (continued)

The deferred tax asset in the balance sheet comprises:

	2021 $ Million	2020 $ Million
Accelerated tax depreciation	5	16
Deferred compensation	277	193
DVA in OCI	61	56
Provisions and other temporary differences	(6)	(14)
	337	251

The deferred tax movement in the income statement comprises:

	2021 $ Million	2020 $ Million
Accelerated tax depreciation	11	6
Deferred compensation	(84)	(48)
Provisions and other temporary differences	(6)	9
	(79)	(33)

The deferred tax movement in equity comprises:

	2021 $ Million	2020 $ Million
DVA in Statement of comprehensive income	(7)	(30)
Share based payment transactions in Equity reserve	—	16
	(7)	(14)

23. Other Liabilities

The following amounts are included within Other Liabilities. Included within 'Other creditors and accruals' is the accrual in respect of the bank levy.

	2021 $ Million	2020 $ Million
Cash collateral held	27,948	29,444
Trade creditors	16,392	9,860
Other creditors and accruals	2,079	1,970
Payroll taxes	72	33
Corporation tax payable	—	—
Deferred tax liability on pensions (Note 8)	181	121
Provisions for liabilities and charges (Note 24)	40	45
	46,712	41,473

Trade Creditors includes customer margin trading payables, securities trading payables outside standard settlement and other brokerage payables.

23. Other Liabilities (continued)

Included within Other Liabilities are the following balances due to other Citi affiliates:

	2021 $ Million	2020 $ Million
Cash collateral held	2,015	1,421
Trade creditors	5,053	1,108
Other creditors and accruals	212	569
	7,280	3,098

24. Provisions for liabilities

	Restructuring provision $ Million	Litigation provisions $ Million	Other provisions $ Million	Total $ Million
At 1 January 2021	13	28	4	45
Charge to profits	16	2	—	18
Provisions utilised	(21)	(1)	—	(22)
Exchange adjustments	(1)	—	—	(1)
At 31 December 2021	7	29	4	40

For reasons of privilege and confidentiality, no further information is disclosed in respect of the litigation provision. Notwithstanding, Citigroup Inc. files periodic reports with the U.S. Securities and Exchange Commission ("SEC") as required by the Securities Exchange Act 1934 which include details of any material regulatory proceedings, investigations and litigations concerning Citigroup and its subsidiaries. Copies of Citigroup's reports are on file with the SEC and are available at http://www.citigroup.com/citi/investor/sec.htm. Other provisions are held in respect of accounting reconciliation and control procedures as part of the balance sheet substantiation process.

25. Derecognition of financial assets and financial liabilities

Transferred financial assets that are not derecognised in their entirety

There are certain instances where the Company continues to recognise financial assets that it has transferred.

CGML enters into collateralised financing transactions where it sells or lends debt or equity securities with a concurrent agreement to repurchase them. As significantly all of the risks and rewards of the underlying securities are retained, a collateralised financing liability is recognised and the securities remain on balance sheet. As at 31 December 2021, the Company recognised $35 billion of assets (2020: $36 billion), with an associated $33 billion of collateralised financing liabilities (2020: $40 billion).

CGML also enters into collateralised financing transactions where it sells debt or equity securities and simultaneously undertakes a swap transaction for the same underlying instrument. As significantly all of the risks and rewards of the underlying securities are retained, a collateralised financing liability is recognised and the securities remain on balance sheet. As at 31 December 2021 the Company recognised $335 million of inventory (2020: $376 million) with associated collateralised financing liabilities of $341 million (2020: $372 million) for transactions of this nature.

26. Trading financial assets and liabilities

Any initial gain or loss on financial instruments where valuation is dependent on techniques using unobservable parameters is deferred over the life of the contract or until the instrument is redeemed, transferred, or sold or the fair value becomes observable. In case the transaction price in the market in which these transactions are undertaken is different from the fair value in the Company's principal market for those instruments, the fair value of these transactions are also estimated by using valuation techniques.

The table below sets out the aggregate difference yet to be recognised in profit or loss at the beginning and end of the year with a reconciliation of the changes of the balance during the year for those financial assets and liabilities classified as trading.

	2021 $ Million	2020 $ Million
Unamortised balance at 1 January	41	45
Deferral on new transactions	160	18
Recognised in the income statement during the period:		
– amortisation	(42)	(22)
Unamortised balance at 31 December	159	41

27. Subordinated loans

The subordinated loans form part of the Company's regulatory capital resources held to meet its capital and minimum eligible liability requirements. The loans, on which interest is payable at market rates on quarterly basis, are due to other group undertakings. The following amounts were included within subordinated loans:

Subordinated Loans	Currency	$ Million	Weighted Average Interest Rate	Weighted Average Maturity (Years)
31 December 2021	USD	8,600	2.14%	7.40
31 December 2020	USD	10,600	2.31%	6.67

As at 31 December 2021, subordinated loans consists of a) $6,000 million of Minimum Requirements for Own Funds and Eligible Liabilities (MREL) eligible subordinated loans (MREL loans) from Citicorp LLC and b) $2,600 million of Tier 2 subordinated loans (Tier 2 loans) from Citicorp LLC.

On 8 June 2021 CGML repaid $2,000 million of MREL loans to Citicorp LLC. On 16 September 2021, CGML repaid $2,000 million of Tier 2 loans to Citicorp LLC. On 7 December 2021 CGML issued $2,000 million of MREL losns to Citicorp LLC.

The MREL loans rank as senior subordinated claims, which are subordinate to the claims of senior creditors, but rank ahead of Own Funds Instruments, which comprise Common Equity Tier 1 instruments, Additional Tier 1 instruments (see Note 28) and Tier 2 instruments.

The Tier 2 loans rank as subordinated claims, which are subordinated to senior creditors and MREL loans but rank ahead of Common Equity Tier 1 instruments and Additional Tier 1 instruments.

In the event that the Company's Own Funds Instruments have been written down, or if the Company or certain of its direct or indirect parent entities are subject to Resolution Proceedings in the UK or elsewhere, then all or a portion of the subordinated loans and/or interest on them shall be reduced or cancelled as instructed by the UK Resolution Authority (Bank of England).

There are no other circumstances under which early repayment may be demanded by the lender.

28. Capital and Reserves

(a) Called up share capital

CGML's share capital comprises:

	2021	2020
Allotted, called-up and fully paid:	**$ Million**	**$ Million**
19,998,975,176 ordinary shares of a par value of $1 each	19,999	1,500
	19,999	1,500

The shares have attached to them full voting, dividend and capital distribution (including on winding up) rights. They do not confer any rights of redemption.

(b) Other equity instruments

On 16 September 2021, the Company issued $2,000 million of Additional Tier 1 Notes to Citicorp LLC, another Citi entity. As at 31 December 2021, the other equity instruments of CGML consist of a) $2,000 million of Additional Tier 1 Notes to Citicorp LLC b) $2,300 million of Additional Tier 1 Notes to Pipestone LLC, another Citi entity.

The notes are perpetual with no fixed redemption date, and are redeemable at the issuer's option subject to approval from the PRA. Interest is fixed every 5 years, interest payments are not cumulative and the issuer may cancel any interest payment at its sole discretion. The notes do not confer any voting rights.

In the event that CGML's Common Equity Tier 1 (CET1) ratio falls below 7.0%, the notes will be written down to zero. If a winding up occurs under these circumstances, no payment will be made to the noteholders. If a winding up takes place under any other circumstances, the noteholders will rank *pari passu* with the holders of the most senior class(es) of preference shares (if any) and ahead of all other classes of issued shares, but junior to the claims of senior creditors, for the amount of the principal and any accrued but unpaid interest on the notes.

(c) Capital reserve

During 2021, CGML received $5.5 billion from its parent, Citigroup Global Markets Holdings Bahamas Limited (CGMHBL). During 2020, CGML received $2 billion from its parent, CGMHBL.

29. Financial instruments and risk management

Risk Management Overview and Culture

For Citi, effective risk management is of primary importance to its overall operations. Accordingly, the Company'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 the Company 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 the Company's risk appetite.

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 firm, Citi strives to serve as a trusted partner to its clients 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 employees to ensure that their decisions pass three tests: they are in clients' interests, create economic value and are always systemically responsible. Additionally, Citi evaluates employees' performance against behavioural expectations set out in its 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 key policies, standards and processes through which Citi identifies, assesses, measures, monitors and controls risks across the Company. CGML adopted and follows Citi's globally set policies, tailored as appropriate for the Company. It also emphasises Citi's risk culture and lays out standards, procedures and programmes that are designed to set, reinforce and enhance the Company's risk culture, integrate its values and conduct expectations into the organisation, providing employees 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 and principle of responsible finance; that they are identified, assessed, measured, monitored, and controlled; and that they are captured in Citi's risk/reward assessment.

While the management of risk is the collective responsibility of all employees, Citi and the Company assign accountability into three lines of defence:

- first line of defence: the business owns all of its risks and is responsible for the management of those risks;
- second line of defence: the Company's independent Risk and Compliance functions establish standards for the management of risks and effectiveness of controls; and
- third line of defence: Citi's internal audit function independently provides assurance, based on a risk-based audit plan, that processes are reliable and governance and controls are effective.

The Company applies Citi's global risk management framework, tailored as appropriate for the Company, based on the following principles established by the Chief Risk Officer:

- a defined risk appetite, aligned with business strategy;
- accountability through a common framework to manage risks;
- risk decisions based on transparent, accurate and rigorous analytics;
- a common risk capital model to evaluate risks;
- expertise, stature, authority and independence of risk managers; and
- risk managers empowered to make decisions and escalate issues.

Risk Appetite Framework

The Company's risk capacity and risk appetite framework includes principle-based qualitative boundaries to guide behaviour and quantitative boundaries within which the Company will operate, focusing on ensuring it has sufficient capital resources for the risks to which the Company could be exposed. The Company's Board of Directors sets the Company's risk capacity and risk appetite, and incorporates management judgement regarding prudent risk taking and growth in light of the business environment within which the Company operates.

29. Financial instruments and risk management (continued)

Risk Appetite Framework (continued)

The Company's Board of Directors, with input from senior Citi and Company management, sets overarching expectations and holds management accountable for ensuring the risk profile remains within this appetite.

CGML Risk Committee

The CGML Risk Committee assists the Board in fulfilling its responsibility for oversight of the risks the Company faces including, but not limited to, market, liquidity, credit, and operational risks; their alignment with the Company's strategy, capital adequacy and the macroeconomic environment; and the development of a strategy to manage these risks. The CGML Risk Committee meets at a minimum quarterly.

Managing Risk across Businesses, Regions, Products and Legal entities

Citi manages risk across four dimensions: businesses, regions, products and legal entities. The Company's risk management framework aims to recognise the range of the Company's global business activities by combining corporate oversight with independent risk management functions within each business.

CGML utilises Citi's overarching risk management model and organisation, with its multi-dimensional risk oversight, people, processes and systems in order to ensure robust oversight of entity risks. In addition, CGML has developed entity specific risk management and controls detailed in CGML's Risk Management Framework, to ensure that there is local challenge to risk taking and that Citi's approach is appropriate for CGML. The EMEA Chief Risk Officer (CRO) is the UK Senior Manager for Risk and together with the UK CRO and other Risk senior management delegates are responsible for the independent review and challenge of the risks facing CGML, including market risk, counterparty credit risk, credit risk, operational risk and liquidity risk. With respect to Compliance Risk, CGML has a dedicated Compliance Officer with direct access to the Board and Board Risk and Audit Committee members. The CGML Compliance Officer also has a matrix reporting line to the EMEA Chief Compliance Officer who is the UK Senior Manager for Compliance. The UK CRO is responsible for the day-to-day management of risk on CGML, including execution of the various risk management responsibilities as detailed in the Risk Management Framework.

CGML has through its Risk Management Framework and escalation guidelines developed protocols and processes for prompt and consistent escalation of matters or issues across both financial and non-financial risk types. The early recognition, escalation and resolution of issues or concerns is key to mitigate risks and is critical to CGML's business model. Timely escalation enables the UK Senior Managers to make informed assessment on the legal entity impact, underlying root causes and required corrective actions. In addition to the timely escalation protocols and process, CGML also has an integrated series of committees across the risk types, that comprises consists of both first line business and second line expertise in their memberships in order to provide oversight of the management and escalation of risks to both the CGML Risk Committee and the CGML Board.

Risk Aggregation and Stress Testing

The Citi Chief Risk Officer is responsible for monitoring and controlling major risk exposures and concentrations across the organisation. This means aggregating risks, within and across businesses, as well as subjecting those risks to alternative stress scenarios in order to assess the potential economic impact they may have on Citi. This aggregation is also performed at a Company level under the accountability of the Company's CRO.

Stress tests are undertaken across Citi and the Company and cover mark-to-market, available-for-sale, and amortised cost portfolios. These firm-wide stress reports seek to measure the potential impact to Citi, the Company and its component businesses, of stresses such as the risk of very large movements in a number of key risk factors (e.g. interest rates, credit spreads, equities, commodities prices), as well as the potential impact of a range of historical and hypothetical forward-looking systemic stress scenarios.

29. Financial instruments and risk management (continued)

Risk Aggregation and Stress Testing (continued)

Supplementing the stress testing described above, risk management works with input from the businesses and finance to provide periodic updates to senior management and the Company's Board of Directors on significant potential exposures across the Company arising from risk concentrations, financial market participants and other systemic issues. These risk assessments are forward-looking exercises, intended to inform senior management and the Board of Directors about the potential economic impacts to the Company that may occur, directly or indirectly, as a result of hypothetical scenarios, based on judgmental analysis from independent risk managers.

Market Risk

Market risk is the risk to earnings or capital from adverse changes in market factors. Price risk losses arise from fluctuations in the market value of trading and non-trading positions resulting from changes in interest rates, credit spreads, foreign exchange rates, equity and commodity prices, and in their implied volatilities. The Company's trading results are particularly exposed to movements in these market factors.

The Company's derivative transactions are principally carried out in equity, interest rate, credit, FX and commodity markets. Most of the counterparties to the Company's derivative transactions are banks and other financial institutions.

Market risk is measured through a complementary set of tools, including factor sensitivities, Value at Risk (VaR) and stress testing. Citi uses two complementary approaches to market risk stress testing across all major risk factors:

- Global Systemic Stress Testing (GSST) – top-down systemic stresses; and
- Business Specific Stress Testing (BSST) – bottom-up business specific stresses.

Systemic stress tests are designed to quantify the potential impact of extreme market movements on a firm-wide basis and are constructed using both historical periods of market stress and projections of adverse economic scenarios. Business specific stress tests 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. Both categories of stress testing can be based upon either a range of historical periods of market stress or purely hypothetical future market events.

In addition, the Company has a defined risk appetite framework which is supplemented by regular stress testing and daily monitoring against predefined limits with daily reporting to the UK CRO and senior management and quarterly reporting to the Board of Directors.

Each business that uses the Company in client-facing transactions is required to establish, with approval from the independent market risk management function, a market risk limit framework for identified risk factors. This framework must clearly define approved risk profiles, include permitted product lists, and must remain within the parameters of the overall market risk appetite. The established limits are monitored by market risk management. Exposure that approaches or exceeds limit or trigger levels is escalated within market risk management and to the Company's Market Risk Manager and UK CRO, with necessary actions taken.

In all cases, the businesses are ultimately responsible for the market risks taken and for remaining within their defined limits. Management of this process begins with the employees who work most closely with the Group's customers, products and markets and extends up to the senior executives who manage these businesses with a complementary aggregation up to the country level.

The following types of transactions are also subject to pre-trade market risk approvals where they meet the criteria in the associated policies and procedures below:

- Equity and Debt capital market transactions in conformance with the ICG Global Commitment Committee Policy and Procedures.
- Non-recourse collateralised financings in conformance with the ICG Convergence Risk Guidelines and Procedures for Collateralised Financing Transactions.
- Transactions considered as large, complex and illiquid in conformance with the ICG Standard for Pre-Trade Approval of Large, Complex and Illiquid Trades.

29. Financial instruments and risk management (continued)

Market Risk (continued)

Transactions with estimated stress losses above defined levels require escalation to the EMEA Chief Risk Officer, the Company's Chief Executive Officer and to the Company's board.

The Company's VaR reports are circulated daily for monitoring of the VaR usage against the overall VaR limit. As well as an overall VaR limit, the Company has factor sensitivity limits and trigger levels in place for each market risk factor that are monitored daily. Factor sensitivities are defined as the change in the value of a position for a defined change in a market risk factor (e.g. the change in the value of a Treasury bill for a one basis point change in interest rates). It is the responsibility of each business to seek to ensure that factor sensitivities are calculated and reported for all relevant risks taken within a trading portfolio.

VaR Methodology

VaR is the estimate of the potential decline in the value of a position or a portfolio under normal market conditions. Citi uses a three year look back period for correlations between risk factors and the greater of three-year or, in most instances, effectively 30-day volatility. These market risk factors include material first and second-order risk sensitivities of various asset classes/risk types (such as interest rate, credit spread, foreign exchange, equity, and commodity risks). Citi uses a single, independently approved Monte Carlo simulation VaR model. 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-month and correlation parameters updated monthly. Citi's confidence interval is 99% and uses a 1-day time horizon in its management reporting.

VaR Limitations

Although extensive back-testing of VaR hypothetical portfolios is performed, with varying concentrations by industry, risk rating and other factors, the VaR measure cannot necessarily provide an indication of the potential size of loss when it occurs. Hence a varied set of factor sensitivity limits and stress tests are used, in addition to VaR limits.

A VaR limit is in place for the Company, to ensure that any excesses are discussed and resolved between risk officers and the business and entity management. This limit is complemented by the factor sensitivity triggers referred to above.

Although it provides a valuable guide to risk, VaR should also be viewed in the context of its limitations:

- the use of historical data as a proxy for estimating future events may not encompass all potential events, particularly those of an extreme nature;
- the use of a one day holding period assumes that all positions can be liquidated or their risks offset in one day. This may not fully reflect the market risk arising at times of severe illiquidity, when a one day holding period may be insufficient to fully liquidate or hedge positions;
- the use of a 99% confidence level, by definition, does not take into account losses that might occur beyond this confidence level;
- VaR is calculated on the basis of exposures outstanding at close of business and therefore does not necessarily reflect intra-day exposures; and
- VaR is unlikely to reflect loss potential on exposures that only arise under significant market movements.

Stressed VaR

Stressed Value-at-Risk is a VaR measure subject to the same confidence level and holding period applicable to the VaR-based measure, but with model inputs calibrated to historical data from a continuous 12-month period that reflects a period of significant financial stress appropriate to the firm's current portfolio. SVaR, like VaR, is produced daily with the selection of stress period for SVaR being evaluated at least quarterly.

Risk Analytics, Risk Data Governance and Management, and the Market Risk Managers are jointly responsible for overseeing the production of the SVaR calculations and are ultimately responsible for ensuring their integrity.

29. Financial instruments and risk management (continued)

Stressed VaR (continued)

Stress testing is performed on a weekly basis to estimate the impact of extreme market movements. Stress testing is performed on both individual portfolios, as well as on aggregations of portfolios and businesses, as appropriate. It is the responsibility of independent market risk management, in conjunction with the businesses, to develop stress scenarios, review the output of periodic stress testing exercises, and use the information to make judgments concerning the on-going suitability of exposure levels and limits.

The following table summarises market risk by disclosing the Company's average Economic VaR during the reporting period on a month-end basis, together with the VaR as at 31 December, broken down into component Value at Risk (CVaR). CVaR represents the correlation or diversification adjusted standalone VaR contribution from a particular sub-portfolio.

	2021 $ Million					
	Equity risk	**Interest rate risk**	**Foreign exchange risk**	**Commodity risk**	**Credit risk**	**Overall VaR**
Average	19.3	9.9	0.7	2.8	6.7	39.4
As at 31 December	22.5	7.8	2.4	2.7	7.8	43.2
Peak	36.3	22.4	3.2	13.6	13.5	54.6

	2020 $ Million					
	Equity risk	**Interest rate risk**	**Foreign exchange risk**	**Commodity risk**	**Credit risk**	**Overall VaR**
Average	20.7	7.8	0.5	1.2	11.7	41.9
As at 31 December	20.1	9.5	0.6	(0.2)	9.6	39.6
Peak	76.7	18.5	5.7	9.0	31.8	100.7

Liquidity risk

Liquidity risk is defined as the risk that the firm will not be able to efficiently meet both expected and unexpected current and future cash flow and collateral needs.

Citi operates a centralised treasury model, whereby the overall balance sheet is managed by Corporate Treasury through its Global Franchise and Regional and Country Treasurers. The EMEA Regional Treasurer is supported by the UK Treasurer who is responsible for the UK legal vehicles balance sheets and liquidity profile as well as those of CGML's subsidiaries.

The UK Treasurer heads the UK Legal Entity Treasury and Markets Business Treasury group, which is responsible for managing CGML's liquidity on a day-to-day basis.

The UK Legal Entity Treasury team is specifically responsible for the CGML's daily funding, liquidity risk management including intraday liquidity, liquidity stress testing, and providing oversight to the Fixed Income and Equity Finance desks including setting and monitoring limits.

The Legal Entity Treasury team in London is also responsible for managing the relationship with internal and external stakeholders. Internal stakeholders consist of Citi's senior management and Governance committees, the Finance desks, and New York Treasury. External stakeholders comprise of auditors, credit rating agencies and regulatory authorities. This team also provides oversight and governance to the teams in Budapest and Mumbai, to ensure adherence to the overall liquidity risk management framework.

29. Financial instruments and risk management (continued)

Liquidity risk (continued)

CGML follows the Global standard liquidity operating framework or the liquidity stress continuum for managing liquidity integrating exit from business-as-usual to Stress and Recovery and Resolution as part of one holistic management framework.

A combination of metric monitoring, triggers, limits, and stress testing are utilised to identify and measure liquidity risk arising from various sources. Limits and triggers are used to control risks and stress assumptions are used to calibrate the level of adequate liquidity buffer under different stress scenarios. To provide for resilience under stress, CGML holds a buffer of high-quality liquid assets, which is comprised predominantly of US, European and UK government bonds.

Global Liquidity Management ('GLM') provides first line of defence oversight of liquidity management framework in order to ensure compliance to Liquidity Risk Management Policy. Second line oversight is provided by Independent Risk. The UK Asset and Liability Committee ('ALCO') is the primary governance committee for liquidity management. Oversight is provided by the UK Executive Committee, CGML Risk Committee and the Board.

Funding and Liquidity Objectives

Adequate liquidity and sources of funding are essential to Citi's businesses. Funding and liquidity risks arise from multiple factors, many of which are beyond Citi's direct control, such as disruptions in the financial markets, changes in key funding sources, credit spreads, alterations to Citi's credit ratings and political and economic conditions across the globe.

Citi's funding and liquidity objectives are to maintain adequate liquidity to:

(i) fund its existing asset base;

(ii) grow its core businesses;

(iii) maintain sufficient excess liquidity, structured appropriately, to enable operation under a wide variety of market conditions, including both short and long-term market disruptions; and

(iv) satisfy regulatory requirements.

These Citi-wide primary liquidity objectives have been adopted by CGML and approved as part of its Liquidity Risk Management Policy.

CGML funds itself through a combination of equity, long-term subordinated debt, long-term and short- term unsecured intercompany borrowings, short-term unsecured third-party borrowings ('BVU'), structured notes through CGMFL and secured financing. Long-term structural liquidity is formed of subordinated debt, stockholder's equity, and greater than 1 year to maturity intercompany loans. Day-to-day funding fluctuations are managed through short-term intercompany loans from Citicorp LLC.

Citigroup employs a 'single face to the market' approach for long-term benchmark unsecured borrowing. The long-term funding is down streamed to CGML from several funding sources. Long-term group borrowings and capital are considered stable given the nature of these sources. Senior unsecured and Subordinated debt is drawn from Citicorp LLC and subject to approved intercompany extension of credit agreements.

In order to meet its internal liquidity-related stress testing requirements and ratios, the Company holds a pool of liquid assets including highly liquid government bonds. This asset pool is reviewed on a daily basis and adjusted as necessary to maintain CGML's key liquidity ratios and metrics within the Board approved risk appetite. Increases to the asset pool are typically funded through increased intercompany unsecured long-term borrowing.

29. Financial instruments and risk management (continued)

Liquidity risk (continued)

Liquidity Risk Management Framework

The Company's liquidity risk management framework is defined by Citi's Global Liquidity Risk Management Policy (the Policy), which is owned by the Citi Treasury Chief Risk Officer and is applicable to Citigroup Inc. and its consolidated subsidiaries. The Policy and any material amendments to it must be approved by the Citigroup Board of Directors.

As a part of the global framework, the Company is required to prepare a detailed plan of its liquidity position which also considers the forecast of future business activities. This plan is called the Funding and Liquidity Plan (FLP) and it addresses strategic liquidity issues and establishes the parameters for identifying, measuring, monitoring, and limiting liquidity risk and sets forth key assumptions for liquidity risk management.

In summary, the FLP is a strategic implementation of the global framework and is divided into the following components:

- Contingency Funding Plan (CFP) tested annually;
- Intra-day liquidity risk management plan; and
- Balance Sheet Funding and Liquidity Plan.

The Company's FLP is prepared annually, and the liquidity profile is monitored on an on-going basis and reported daily to key stakeholders including the UK Treasurer, Treasury CRO and UK ALCO members. Liquidity risk is monitored using various ratios and limits in accordance with the Liquidity Risk Management Policy for Citi. The FLP includes a forecast of CGML's balance sheet and liability metrics as well as an overview of the current secured financing market conditions as observed by the Finance desks. As part of the FLP, liquidity limits, liquidity ratios and assumptions for periodic stress tests are reviewed and approved by the UK ALCO, Citi Treasurer and Treasury CRO.

Citi maintains a series of contingency funding plans on a consolidated basis as well as for individual entities, including the Company. The Contingency Funding Plan (CFP) is a key component of the Global Framework and it incorporates the management plan of contingent actions in the event of a crisis. The Company's CFP includes the "playbook" for addressing liquidity and funding challenges in crisis situations, triggers, procedures, roles and responsibilities, a communication plan and a key contact list to manage a liquidity event. The CFP defines a crisis committee responsible for decision making and execution of contingency plans to address both short-term and longer term disruptions in funding sources.

Funding and Liquidity Risk Governance

The UK ALCO is the primary governance committee for CGML's balance sheet management. Among its key responsibilities are:

- Drive efficient and prudential Balance Sheet trends and mix.
- Oversee and influence liquidity levels, structure, and metrics.
- Influence investment allocation of the liquidity pool in High Quality Liquid Assets.
- Review and approve the summary Annual Funding and Liquidity Plan and/or horizontal liquidity review processes as per Liquidity Risk Management Policy, including CFP and frequency of intraday liquidity monitoring.
- Influence, evaluate and monitor local regulatory requirements related to the Balance Sheet, including local liquidity metrics and market risk regulations, reserve requirements and delivery status of related regulatory commitments.
- Identify, limit, and monitor significant funding sources/uses vs. established targets/ limits such as deposit concentration, oversized lending commitments from liquidity perspective.
- Identify, influence, and monitor third party cost and value of funds trends, and measurements against established targets and limits.

29. Financial instruments and risk management (continued)

Liquidity risk (continued)

Citi's UK management team and the UK ALCO monitor changes in the economic environment and any corresponding impact on the asset quality of Citi's local and consolidated balance sheets, including CGML. The UK ALCO also functions as a forum for senior management to ensure adherence to corporate wide policies and procedures, regulatory requirements, and rating agency commitments.

The membership of the UK ALCO includes the UK Citi Country Officer (CCO) and CGML Chief Executive Officer (CEO) (chair), UK Country Finance Officer (CFO), UK Treasurer, UK Chief Risk Officer, Independent Liquidity Risk Manager, Finance Desk Heads and other key business and functional heads.

The UK ALCO meets on a monthly basis.

CGML's Board reviews the Liquidity Risk Management Policy and the Company's Internal Liquidity Adequacy Assessment Process (ILAAP) document and approves the Liquidity Risk Management Framework, the Funding and Liquidity Plan, the Contingency Funding Plan, and any relevant CGML-specific liquidity policies.

Liquidity Stress Testing and Scenario Analysis Framework

The Company's use of stress testing and scenario analysis is intended to quantify the potential impact of a liquidity event on the Company's balance sheet and liquidity position, and to identify viable funding alternatives that can be utilised. These scenarios include:

- potential significant changes in key funding sources;
- market triggers (such as credit rating downgrades);
- changes to uses of funding; and
- political and economic conditions, including stressed market conditions as well as Company-specific events.

Some tests span liquidity events over a full year, while others may cover a more intense shock over a shorter period such as 30 days. These tests can identify potential mismatches between liquidity sources and uses over a variety of time horizons, and liquidity limits are set accordingly. The stress tests and potential mismatches may be calculated with varying frequencies, with several important tests performed daily. They are also performed for the material currencies that constitute CGML's balance sheet.

CGML's stress testing framework seeks to ensure that sufficient contingent liquidity is maintained (the liquidity pool of highly liquid assets mentioned above) after considering the impact of key liquidity risk.

Internal Liquidity Risk Management Metrics

From an internal perspective, the Company uses two stress tests to monitor its liquidity position. These stress tests are Citi's enterprise-wide liquidity-related stress tests – the 30-day Resolution Liquidity Adequacy and Positioning (RLAP) and the one-year Term Liquidity Stress Test (TLST).

RLAP: Internal stress test metric used to measure the short-term (30-days) survival horizon under a Severe Market Disruption Stress Scenario.

TLST: Citi's longer-term (1-year) and comparatively less severe (as against RLAP) Internal Liquidity Stress Tests (ILST) where the firm's long and short-term ratings are assumed to be downgraded by two notches and one notch, respectively, from current levels and the firm is expected to continue to operate as a going concern.

29. Financial instruments and risk management (continued)

Liquidity risk (continued)

Maturity analysis of financial instruments

The following table assigns the Company's assets and liabilities to a combination of the relevant contractual and/or behavioural maturity groupings based on the remaining period from the balance sheet date. It should be noted that in managing liquidity risk, management uses certain assumptions based on a combination of contractual and behavioural maturity profiles, as shown below. The majority of the financial instruments disclosed below are presented on a contractual basis, with the exception of derivatives, inventory and securities sold but not yet purchased. Due to the nature of the business, behavioural maturity is considered the best reflection of the liquidity of these financial instruments.

31 December 2021	Total $ Million	On demand $ Million	3 months & less $ Million	3 - 12 months $ Million	1 – 5 years $ Million	More than 5 years $ Million
Cash	8,463	8,463	—	—	—	—
Collateralised financing transactions at amortised cost	76,862	47,764	5,589	23,509	—	—
Derivatives	157,281	—	157,281	—	—	—
Inventory	64,751	64,751	—	—	—	—
Collateralised financing transactions at fair value	81,701	40,677	34,973	5,203	848	
Equity securities held for investment	106	—	—	—	—	106
Cash collateral pledged	35,263	—	35,263	—	—	—
Trade debtors	21,160	—	21,160	—	—	—
Other debtors	376	—	376	—	—	—
Total financial assets	445,963	161,655	254,642	28,712	848	106

	Total $ Million	On demand $ Million	3 months & less $ Million	3 - 12 months $ Million	1 – 5 years $ Million	More than 5 years $ Million
Bank loans and overdrafts	7,201	1,671	1,025	1,505	500	2,500
Collateralised financing transactions at amortised cost	63,067	28,490	6,619	25,363	2,595	—
Derivatives	161,797	—	161,797	—	—	—
Securities sold but not yet purchased	65,997	—	65,997	—	—	—
Collateralised financing transactions at fair value	43,245	16,636	20,473	4,994	1,142	—
Hybrid financial liabilities	26,143	—	4,334	4,674	8,280	8,855
Cash collateral held	27,948	—	27,948	—	—	—
Trade creditors	16,385	—	16,385	—	—	—
Other creditors and accruals	2,044	—	2,044	—	—	—
Subordinated loans	8,600	—	—	—	1,500	7,100
Total financial liabilities	422,427	46,797	306,622	36,536	14,017	18,455
Net liquidity gap	23,536	114,858	(51,980)	(7,824)	(13,169)	(18,349)
Cumulative liquidity gap		114,858	62,878	55,054	41,885	23,536

29. Financial instruments and risk management (continued)

31 December 2020	Total $ Million	On demand $ Million	3 months & less $ Million	3 - 12 months $ Million	1 – 5 years $ Million	More than 5 years $ Million
Cash	5,505	5,505	—	—	—	—
Collateralised financing transactions at amortised cost	76,864	44,579	23,093	8,123	1,069	—
Derivatives	213,918	—	213,918	—	—	—
Inventory	73,752	73,752	—	—	—	—
Collateralised financing transactions at fair value	77,331	24,966	45,623	4,976	1,530	236
Equity securities held for investment	99	—	—	—	—	99
Cash collateral pledged	39,570	—	39,570	—	—	—
Trade debtors	15,438	—	15,438	—	—	—
Other debtors	261	—	261	—	—	—
Total financial assets	502,738	148,802	337,903	13,099	2,599	335

	Total $ Million	On demand $ Million	3 months & less $ Million	3 - 12 months $ Million	1 – 5 years $ Million	More than 5 years $ Million
Bank loans and overdrafts	7,347	347	1,000	4,200	—	1,800
Collateralised financing transactions at amortised cost	75,922	40,024	21,837	12,120	1,941	—
Derivatives	229,445	—	229,445	—	—	—
Securities sold but not yet purchased	56,641	—	56,641	—	—	—
Collateralised financing transactions at fair value	47,187	16,790	25,850	3,555	992	—
Hybrid financial liabilities	16,677	—	1,381	2,809	6,575	5,912
Cash collateral held	29,444	—	29,444	—	—	—
Trade creditors	9,851	—	9,851	—	—	—
Other creditors and accruals	1,943	—	1,943	—	—	—
Subordinated loans	10,600	—	—	—	3,500	7,100
Total financial liabilities	485,057	57,161	377,392	22,684	13,008	14,812
Net liquidity gap	17,681	91,641	(39,489)	(9,585)	(10,409)	(14,477)
Cumulative liquidity gap		91,641	52,152	42,567	32,158	17,681

29. Financial instruments and risk management (continued)

The table below assigns the Company's liabilities to relevant maturity groupings based on the remaining contractual future undiscounted cash flows up to maturity. The amounts disclosed in the table are the contractual undiscounted cash flows, whereas the Company manages liquidity risk based on a combination of contractual and behavioural maturity profiles. Derivatives are excluded from the table as these are held for trading purposes. As such, the intention is not to hold these positions to settlement over the period of contractual maturity. Cash collateral held, securities sold not yet purchased, trade creditors, and other creditors and accruals are excluded because they are deemed to be three months or less and are thus very short term.

31 December 2021	Contractual value $ Million	On demand $ Million	3 months & less $ Million	3 - 12 months $ Million	1 – 5 years $ Million	More than 5 years $ Million
Bank loans and overdrafts	7,427	1,671	1,037	1,530	616	2,573
Collateralised financing transactions at amortised cost	63,074	28,489	6,619	25,364	2,602	—
Collateralised financing transactions at fair value	43,255	16,635	20,454	5,017	1,149	—
Hybrid financial liabilities	31,398	—	4,343	4,791	9,023	13,241
Subordinated loans	9,853	—	46	138	2,156	7,513
Total financial liabilities	155,007	46,795	32,499	36,840	15,546	23,327

31 December 2020	Contractual value $ Million	On demand $ Million	3 months & less $ Million	3 - 12 months $ Million	1 – 5 years $ Million	More than 5 years $ Million
Bank loans and overdrafts	7,560	348	1,013	4,221	86	1,892
Collateralised financing transactions at amortised cost	75,935	40,024	21,840	12,124	1,947	—
Collateralised financing transactions at fair value	47,177	16,789	25,843	3,554	991	—
Hybrid financial liabilities	20,240	—	1,388	2,878	7,155	8,819
Subordinated loans	12,400	—	61	184	4,325	7,831
Total financial liabilities	163,312	57,161	50,145	22,961	14,504	18,542

Credit risk

Credit risk is the potential for financial loss resulting from the failure of a borrower or counterparty to honour its financial or contractual obligations.

Credit risk arises in many of the Company's business activities, including:

- sales and trading in securities and derivatives;
- settlement;
- when Citi acts as an intermediary on behalf of its clients and other third parties; and
- when acting as underwriter or within a capital raising capacity.

Credit risk arises from the Company's activities in OTC derivatives and repurchase and reverse repurchase agreements, as well as securities lending and margin lending transactions. The Company's credit exposure is primarily to professional counterparties in the global financial sector, including banks, investment banks, hedge funds, insurance companies and asset management companies, and the public sector.

29. Financial instruments and risk management (continued)

Credit risk (continued)

The Company enters into derivative transactions principally to enable customers to transfer, modify or reduce their credit, equity, interest rate and other market risks. In addition, the Company uses derivatives, and other instruments, as an end user to manage the risks to which the Company is exposed. Credit risk also arises from settlement and clearing activities when the Company 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 on a specific client, industry, region, or other category.

Credit risk is one of the most significant risks the Company faces as an institution. 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 firm-wide level. Citi's credit risk management also includes processes and policies with respect to problem recognition, including "watch lists," portfolio review, updated risk ratings and classification triggers. The framework is supplemented by regular stress testing and monitoring of exposures, with monthly and quarterly reporting to senior management and the Board of Directors respectively.

The Company has in place a concentration risk management framework which includes risk limits by relationship, country, and industry.

The credit process is based on a series of fundamental policies, including:

- joint business and independent risk management responsibility for managing credit risks;
- a single centre of control for each credit relationship to coordinate credit activities with that client;
- a requirement for a minimum of two authorised credit officer signatures on extensions of credit, one of which must be from a sponsoring credit officer in the business and the other from a credit officer in independent credit risk management;
- consistent risk rating standards, applicable to every Citi obligor and facility;
- consistent standards for credit origination documentation and remedial management; and
- portfolio limits to ensure diversification and maintain risk/capital alignment.

Large exposure limit reports are circulated daily that show the Company's exposure to various counterparty groupings as a proportion of its own funds. Regulations also require that the Company does not exceed specified limits for its non-trading book exposures. Independent credit risk management works with the Regulatory Reporting Group within Finance to identify, monitor, and escalate any growing concentrations of credit exposure to groups of connected counterparties.

Wrong-way risk occurs when the exposure to a particular counterparty is positively correlated with the probability of default of the counterparty itself. Specific wrong-way risk arises when the exposure to a particular counterparty is positively correlated with the probability of default of the counterparty itself because of the nature of the transaction(s) with the counterparty. General wrong-way risk arises when the probability of default of counterparties is positively correlated with general market risk factors. This is monitored at a Company level, and includes circulation of a monthly report that identifies CDS based, OTC or securities financing transactions (SFTs) that generate specific wrong-way risk. Wrong-way risk is mitigated through the use of enforceable netting agreements and margining.

The Company seeks to restrict its exposure to credit losses by entering into master netting arrangements with most counterparties with which it undertakes a significant volume of transactions. Master netting arrangements do not generally result in an offset of balance sheet assets and liabilities, as transactions are usually settled on a gross basis. However, the credit risk associated with favourable contracts is reduced by a master netting arrangement to the extent that if an event of default occurs, all amounts with the counterparty are terminated and settled on a net basis. Many of these arrangements also provide for the calling and posting of variation margin or collateral, further reducing the Company's exposures. The internal measurement of exposure on each credit facility considers legally enforceable netting and margining arrangements – both in terms of current exposure and in terms of the simulated calculation of potential future exposure.

29. Financial instruments and risk management (continued)

Credit risk (continued)

The following table presents the maximum exposure to credit risk, before taking account of any collateral held or other credit enhancements. It also illustrates the impact on the balance sheet of offsetting, master netting agreements and cash and non-cash collateral.

	2021 $ Million						
Assets	**Gross exposure**	**Amounts set off on the balance sheet**	**Net exposure**	**Impact of master netting agreements**	**Cash collateral**	**Securities collateral**	**Net exposure**
Derivatives	157,281	—	157,281	(125,536)	(27,948)	(3,797)	—
Collateralised financing transactions	233,583	(75,020)	158,563	—	—	(158,563)	—
	390,864	(75,020)	315,844	(125,536)	(27,948)	(162,360)	—
Liabilities							
Derivatives	161,797	—	161,797	(125,536)	(35,263)	(6,793)	(5,795)
Collateralised financing transactions	181,332	(75,020)	106,312	—	—	(106,312)	—
	343,129	(75,020)	268,109	(125,536)	(35,263)	(113,105)	(5,795)

	2020 $ Million						
Assets	**Gross exposure**	**Amounts set off on the balance sheet**	**Net exposure**	**Impact of master netting agreements**	**Cash collateral**	**Securities collateral**	**Net exposure**
Derivatives	213,918	—	213,918	(182,377)	(29,444)	(2,097)	—
Collateralised financing transactions	234,616	(80,421)	154,195	(3,251)	—	(150,944)	—
	448,534	(80,421)	368,113	(185,628)	(29,444)	(153,041)	—
Liabilities							
Derivatives	229,445	—	229,445	(182,377)	(39,570)	(5,990)	1,508
Collateralised financing transactions	203,530	(80,421)	123,109	(3,251)	—	(119,858)	—
	432,975	(80,421)	352,554	(185,628)	(39,570)	(125,848)	1,508

The offset amounts for the impact of master netting agreements for derivatives in the above tables relate to exposures where the counterparty has an offsetting derivative exposure with the Company and a master netting agreement is in place. These amounts do not qualify for net presentation for accounting purposes as settlement may not actually be made on a net basis.

29. Financial instruments and risk management (continued)

Credit risk (continued)

The collateralised financing transactions offset adjustment relates to balances arising from repurchase and reverse repurchase transactions. The offsets relate to balances where there is a legally enforceable right of offset in the event of counterparty default and consequently a net exposure for credit risk management purposes. Credit risk exposure is monitored on an asset basis except for positions which are specifically collateralised, normally in the form of cash.

As at 31 December the Company's third-party credit exposure (mark to market plus potential future exposure as determined by the Company's internal measure) in relation to collateralised financing transactions and derivatives was distributed as shown in the table below (these exposures do not include derivative and collateralised financing transactions with other group undertakings). The following table shows CGML's exposures categorised by industry.

Industry	2021 %	2020 %
Commercial and universal banks	24.1	26.6
Insurance and fund management (pension funds and mutual funds)	28.0	31.8
Brokers and investment banks	3.3	2.8
Corporates	19.2	12.5
Public Sector	22.5	23.3
Other (including SPVs and Hedge Funds)	2.9	3.0
	100	100

The credit quality of the Company's financial assets is maintained by adherence to relevant Citi policies. The Company monitors the credit ratings of its counterparties with the table below presenting an analysis of the Company's trading inventory and derivative transactions by rating agency designation based on Standard & Poor's, Moody's and Fitch ratings as at 31 December:

	Government bonds		Non-government bonds		Derivatives	
	2021 %	2020 %	2021 %	2020 %	2021 %	2020 %
AAA / AA / A	71.9	51.0	81.4	55.2	37.2	47.5
BBB	20.4	40.4	9.1	25.8	2.8	3.7
BB / B	2.3	6.9	4.5	10.9	0.8	0.7
CCC or below	1.2	0.8	1.4	4.0	—	—
Central counterparty (unrated)	—	—	—	—	33.3	23.9
Unrated	4.2	0.9	3.6	4.1	25.9	24.2
	100.0	100.0	100.0	100.0	100.0	100.0

As discussed above the credit risk is mitigated through the use of collateral, netting arrangements and the application of credit limits.

29. Financial instruments and risk management (continued)

Operational risk (unaudited)

Operational Risk is the risk of loss resulting from inadequate or failed internal processes, systems, human factors 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. Citi also recognizes the impact of operational risk on the reputation risk associated with Citi's business activities.

The objective is to keep operational risk at appropriate levels relative to the characteristics of Citi's businesses, the markets in which it operates, its capital and liquidity, and the competitive, economic and regulatory environment.

Citi maintains an Operational Risk Management (ORM) framework with a Governance Structure to ensure effective management of Operational Risk across Citi. The Governance Structure incorporates the Three Lines of Defence as previously described in the Risk Management Overview and Culture section.

To anticipate, mitigate and control operational risk, Citi maintains a system of policies and has established a consistent framework for monitoring, assessing, and communicating operational risks and the overall effectiveness of the internal control environment across Citi. As part of this framework, Citi has defined its operational risk appetite and has established a Manager's Control Assessment (MCA) programme which helps managers to self-assess key operational risks and controls and to identify and address weaknesses in the design and effectiveness of internal controls that mitigate significant operational risks.

The ORM Framework establishes a foundation on which the activities of businesses, regions and functions, the resulting operational risks and the associated controls are identified, periodically assessed, subject to corrective action, appropriately documented and communicated. Specifically, the ORM Framework establishes minimum standards for consistent identification, measurement, monitoring, reporting, and management of operational risk across Citi.

The process established by the ORM Framework is expected to lead to effective anticipation and mitigation of operational risk and improved operational risk loss experience and includes the following steps:

- establish and monitor Operational Risk Appetite;
- identify and assess Key Operational Risks (KORs);
- design controls to mitigate identified risks;
- establish Key Risk Indicators (KRIs);
- implement a process for early problem recognition and timely escalation;
- produce comprehensive operational risk reporting; and
- ensure that sufficient resources are available to actively improve the operational risk environment and mitigate emerging risks.

As new products and business activities are developed, processes are designed, modified or sourced through alternative means and operational risks are considered.

In addition, ORM proactively assists the businesses, operations and technology and the other independent control groups in enhancing the effectiveness of controls and managing operational risks across products, business lines and regions, and facilitates the management of operational risk at a Citi and Company level.

Measurement

To support advanced capital modelling and management, each business is required to capture relevant operational risk event information. A localised version of the Citi risk capital model for operational risk has been developed and applied against CGML. The PRA has approved this model, for use within the Company as an "Advanced Measurement Approach". It uses a combination of internal and external loss data to support statistical modelling of capital requirement estimates, which are then adjusted to incorporate qualitative aspects of the operational risk and control environment.

29. Financial instruments and risk management (continued)

Operational risk (unaudited) (continued)

To enhance its operational risk management, CGML has implemented a forward-looking scenario analysis programme to identify and quantify emerging operational risks, through a systematic process of obtaining opinions from business managers and risk management experts to derive reasoned assessments of the likelihood and loss impact of plausible, high severity operational risk losses. Scenario results are used to create a management overlay to CGML's operational risk capital model estimates. An AMA model change request is currently pending with the PRA, if approved this will allow scenario analysis impact to be included in the capital model outputs removing the overlay mentioned above.

In addition, there are various governance forums for escalation and reporting of internal control, compliance, regulatory and risk issues, including operational risk loss events.

Key Operational Risks (KOR) are derived from an evaluation of operational risk exposure on a residual risk basis considering its current business strategy, substantial emerging risks and other relevant factors which include assessment of the four Basel operational risk data elements (i.e. internal losses, external losses, scenario analysis, output from Internal Audit Assessments) and from self-assessment results from the Manager's Control Assessment (MCA). The identified KORs for CGML include those set out below. These Risks are aligned to the updated Citi-wide global risk taxonomy that has been developed for operational and compliance risks.

ORM liaises with Subject Matter Experts (SMEs) aligned to each KOR in order to define CGML's risk and to identify appropriate metrics i.e., Key Indicators (KIs) to monitor the profile of each KOR. Given that CGML's business is almost entirely wholesale in nature (falling within the ICG), segment metrics are leveraged as far as possible.

CGML KORs as of Q4 2021:

- Money Laundering (AML) and Sanctions Risk
- Conduct Risk (covered by Market Practices and Customer/Client Protection Risk)
- Cyber Risk (including Information Security)
- Geopolitical Risk
- Fraud & Theft (excl. Tech)
- E-Trading Risk Management (covered by Conduct, Processing and Technology Risk)
- Reporting Risk (Financial Statement Reporting Risk / Regulatory and Management Reporting Risk)
- Data Management Risk
- Model Risk Management
- Third-party Risk Vendor Management including Affiliates
- Processing Risk

CGML's KORs have been incorporated into the Citi-level global operational risk appetite framework in order to derive CGML's Risk Appetite against risk types in the standardised GRC operational risk taxonomy. These risk types are supported by related metrics and appropriately set thresholds. The Risk Appetite is regularly monitored and reported to CGML's senior governance forums.

Reputation and Franchise Risk and New Products or Services

A Citi-wide (including an EMEA-based) Reputational Risk Committee reviews practices involving reputational or franchise issues. These committees review whether Citi's business practices have been designed and implemented in a way that meets the highest standards of professionalism, integrity, and ethical behaviour.

Additional committees ensure that product risks are identified, evaluated, and determined to be appropriate for Citi and its customers, and safeguard the existence of necessary approvals, controls, and accountabilities.

29. Financial instruments and risk management (continued)

Reputation and Franchise Risk and New Products or Services (continued)

The New Product Approval Committee (NPAC) is designed to ensure that significant risks, including reputational and franchise risks, for all new ICG products, services, or complex transactions, are identified and evaluated, determined to be appropriate, properly recorded for risk aggregation purposes, effectively controlled, and have accountabilities in place.

Country Risk

Country risk is the risk that an event in a country (precipitated by developments within or external to that country) will impair the value of Citi's franchise or will adversely affect the ability of obligors within that country to honour their obligations to Citi. Country risk events may include sovereign defaults, banking defaults or crises, currency crises and/or political events.

The country designation in Citi's risk management systems is based on the country to which the client relationship, taken as a whole, is most directly exposed with regard to economic, financial, socio-political or legal risks. This includes exposure to subsidiaries within the client relationship that are domiciled outside of the country.

Citi assesses the risk of loss associated with certain of the country exposures on a regular basis, with the country concentration limits reviewed as and when economic performance is viewed as deteriorating. These analyses take into consideration alternative scenarios that may unfold, as well as specific characteristics of the Company's portfolio, such as transaction structure and collateral and the Company's exposure in these countries may vary over time, based upon its franchise, client needs and transaction structures.

Pension Risk

The Company's defined benefit schemes are measured on an actuarial basis, with the key assumptions being inflation, discount rate, mortality, and investment returns. Return on assets is an average of expected returns weighted by asset class.

Mortality assumptions are based upon the relevant standard industry and national mortality tables. Discount rates are based on specific corporate bond indices which reflect the underlying yield curve of each scheme. Management judgement is required in estimating the rate of future salary growth. All assumptions are unbiased, mutually compatible and based upon market expectations at the reporting date.

Further information about the Company's Pension schemes is contained in Note 8 'Pension'.

30. Capital management (unaudited)

As an UK regulated entity, CGML is required to hold sufficient regulatory capital to meet its Individual Capital Guidance, CRDIV buffers and any applicable buffers mandated by the PRA. The Company monitors its CET1, Tier 1, total capital ratios and overall capital adequacy daily. The externally mandated regulatory requirements also form part of the Company's internal capital management toolkit, with capital management constituting a key focus for a number of internal committees, in particular the UK ALCO. CGML's capital management framework encompasses a set of internal limits and escalations, defined using a red-amber-green structure. In accordance with these escalations, specified actions are taken and the responsible people are notified at each stage. In addition, the UK ALCO is kept informed of any trigger breaches. CGML also has in place a risk appetite framework to manage the risks to which it is exposed through its business activities: these are both quantitative and qualitative. During 2021, CGML remained in compliance with all externally imposed capital requirements. Quantitative details of CGML's regulatory capital position are included in Section 4 of the Strategic Report.

The capital management of CGML is further explained in its Basel Pillar III disclosures document, which can be found at http://www.citigroup.com/citi/investor/reg.htm. Further details of CGML's Regulatory Capital are also included in section 4.3 on page 15 of this report.

31. Registered charges

The Company has granted to various banks and other entities a number of fixed and floating charges over certain holdings in securities, properties, collateral and monies held by or on behalf of such banks or other entities.

32. Other commitments

a) Financial guarantees

As at 31 December 2021, the Company had $28 million (2020: $31 million) of unsecured letters of credit and financial guarantees outstanding from banks to satisfy various collateral requirements.

b) Capital commitments

As at 31 December 2021, the Company had no capital commitments (2020: $nil).

33. Related party transactions

The Company is a wholly owned subsidiary undertaking of CGMHBL, which is incorporated in the Bahamas. The largest group in which the results of the Company are consolidated is that headed by Citigroup Inc., which is incorporated in the United States of America. The Company defines related parties as the Board of Directors, senior management, their close family members, parent and fellow subsidiaries and associated companies.

A number of arm's length transactions are entered into with related parties. Various services are provided between related parties and these are also provided at arm's length.

33. Related party transactions (continued)

The table below summarises balances and transactions with related parties:

2021	Immediate parent company $ Million	Subsidiaries $ Million	Other related parties $ Million
Assets			
Financial assets at amortised cost			
– cash at bank	—	—	2,373
– collateralised financing transactions	—	4,927	52,957
Financial assets mandatorily at fair value through profit or loss			
– derivatives	—	3,645	78,335
– inventory	—	—	—
– equity securities held for investment	—	—	—
Financial assets designated at fair value through profit or loss	—	—	—
Investments in subsidiary and related undertakings	—	3,830	—
Pension asset	—	—	—
Other assets	—	1,198	8,655
Liabilities			
Financial liabilities at amortised cost			
– bank loans and overdrafts	—	—	5,678
– collateralised financing transactions	—	6,399	35,255
Financial liabilities mandatorily at fair value through profit or loss			
– derivatives	—	3,684	80,263
– securities sold but not yet purchased	—	2,925	—
Financial liabilities designated at fair value through profit or loss	—	23,677	—
Other liabilities	—	252	7,029
Subordinated loans	—	—	8,600
Guarantees and commitments	—	—	—
Income statement			
Fee and commission income	—	19	271
Net dealing income /(expense)	—	4,653	(2,527)
Interest receivable	—	(86)	129
Interest payable	—	—	(352)
Operating expenses	—	(16)	(506)
Net finance income on pension	—	—	—
Other income	—	—	—

33. Related party transactions (continued)

2020	Immediate parent company $ Million	Subsidiaries $ Million	Other related parties $ Million
Assets			
Financial assets at amortised cost			
– cash at bank	—	—	2,351
– collateralised financing transactions	—	1,432	57,170
Financial assets mandatorily at fair value through profit or loss			
– derivatives	—	1,822	123,909
– inventory	—	—	—
– equity securities held for investment	—	—	—
Financial assets designated at fair value through profit or loss	—	—	—
Investments in subsidiary and related undertakings	—	2,125	—
Pension asset	—	—	—
Other assets	30	3,050	5,931
Liabilities			
Financial liabilities at amortised cost			
– bank loans and overdrafts	—	—	7,267
– collateralised financing transactions	—	3,925	48,386
Financial liabilities mandatorily at fair value through profit or loss			
– derivatives	—	6,268	124,674
– securities sold but not yet purchased	—	141	—
Financial liabilities designated at fair value through profit or loss	—	16,677	—
Other liabilities	—	1,362	1,736
Subordinated loans	—	—	10,600
Guarantees and commitments	—	—	—
Income statement			
Fee and commission (expense)/ income		(2)	7
Net dealing expense	—	(2,577)	(910)
Interest receivable	—	(33)	263
Interest payable	—	(6)	(588)
Operating expenses	—	(68)	(321)
Net finance income on pension	—	—	—
Other income	—	—	—

No provisions have been recognised (2020: $nil) in respect of doubtful debts related to the amount of outstanding balances and no expense has been recognised during the year (2020: $nil) in respect of bad or doubtful debts due from related parties.

During 2021, the Company made a total of $1,703 million (2020: $642 million) capital contribution to its subsidiary CGME and received $5,500 million (2020: $2,000 million) capital contribution from its parent, CGMHBL. As at 31 December 2021, the other equity instruments of CGML consist of a) $2,000 million of Additional Tier 1 Notes to Citicorp LLC, issued on 16 September 2021 b) $2,300 million of Additional Tier 1 Notes to Pipestone LLC, another Citi entity.

34. Events after the reporting period

The recent action of Russian military forces and support personnel in Ukraine has escalated tensions between Russia and the U.S., NATO, the EU and the U.K. Certain jurisdictions have imposed, and are likely to impose material additional, financial and economic sanctions and export controls against certain Russian entities and/or individuals.

Commencing from the week of 21 February 2022, the U.S., the U.K., and the EU each imposed packages of financial and economic sanctions that, in various ways, constrain transactions with numerous Russian entities and individuals; transactions in Russian sovereign debt; and investment, trade, and financing to, from, or in certain regions of Ukraine.

The Company's ability to engage in activity with certain consumer and institutional businesses in Russia and Ukraine or involving certain Russian or Ukrainian businesses and customers is dependent in part upon whether such engagement is restricted or prohibited under any current or expected U.S., EU, U.K. or other countries' sanctions and laws.

Sanctions and export controls, as well as any actions by Russia, could adversely affect the Company's business activities and customers in and from Russia and Ukraine. Moreover, actions by Russia, and any further measures taken by the U.S. or its allies, could have negative impacts on regional and global financial markets and economic conditions. The Company continues to monitor the potential impacts from the tensions and conflict in order to mitigate its exposures and risks.

Furthermore, the geopolitical tensions have had a severe impact on commodity markets, particularly across oil and gas, as prices have risen dramatically during the first quarter of 2022. To date there has been no material adverse impact to the Company as a result. The Company continues to assess the material risks and the impact of energy prices on its clients and businesses.

At the date on which these financial statements were approved, there were no other significant events affecting the Company since the year end.

35. Group structure

The Company's immediate parent undertaking is Citigroup Global Markets Holdings Bahamas Limited (CGMHBL), a company registered at Ocean Centre, Montagu Foreshore, East Bay Street, and P.O. Box N3247, Nassau, Bahamas. The Company's ultimate parent company and ultimate controlling party is Citigroup Inc., registered at 1209 Orange Street, Wilmington, DE 19801 United States of America.

The audited consolidated financial statements of Citigroup Inc. are made available to the public annually in accordance with Securities and Exchange Commission regulations and may be obtained from https://www.citigroup.com/citi/investor/sec.htm

36. Revenue analysis

As outlined in the Strategic Report, the Company is Citi's international broker dealer and management reviews its performance by geography in the same way as Citigroup Inc. reports its performance.

Citi is organised into four regions, Asia Pacific, EMEA, Latin America and North America.

Revenue by Region	Asia Pacific $ Million	EMEA $ Million	Latin America $ Million	North America $ Million	Total Regional $ Million	Other / Corp $ Million	Total $ Million
2021 Revenues	579	2,636	27	(276)	2,966	531	3,497
2020 Revenues	505	3,208	17	121	3,851	240	4,091
Increase/(decrease) compared to prior year	74	(572)	10	(397)	(885)	291	(594)

37. Country by country reporting

Nature of activities

CGML is headquartered in London and operates globally, generating the majority of its business from the EMEA region, with the remainder coming from business executed with clients in Asia and the Americas.

As at 31 December 2021, the Company had five branch offices and four subsidiaries. The Company's branches in the European Union (EU) were established under the 1993 Investment Services Directive, which has been superseded by the 2005 Markets in Financial Instruments Directive (MiFID). These passported branches are located in the Czech Republic and Italy. The Company has made notifications to the PRA to conduct cross-border MiFID services into all European Economic Area (EEA) states. Additionally, the Company has non-EU branches in Dubai, Israel and Switzerland as well as subsidiaries in Luxembourg, Monaco and Germany.

EU Branches	Non-EU Branches	Subsidiaries
• Italy (in liquidation)	• Switzerland	• Citigroup Global Markets Luxembourg S.a.R.L (Luxembourg) (liquidated on 7 December 2021)
• Czech Republic (no activity)	• Dubai	• Citigroup Global Markets Funding Luxembourg SCA (Luxembourg)
	• Israel	• Citigroup Global Markets Funding Luxembourg GP S.a.R.L (Luxembourg)
		• Citi Global Wealth Management S.A.M (Monaco)
		• Citigroup Global Markets Europe AG (Germany)

The Company is a dealer, market maker and underwriter in equities, fixed income securities and commodities, and provides investment banking and advisory services to a wide range of corporate, institutional and government clients. The Company's trading activities, which are part of Citi's ICG business, encompass cash, exchange-traded and OTC derivative markets. The Company's major counterparties are banks, other investment firms, investment managers, insurers, and hedge funds. The Company does not originate securitisations or engage in leveraged finance transactions as principal. The Company employs a number of specific individuals who hold key roles or have overall responsibility for whole areas of business on UK entities and branches.

37. Country by country reporting (continued)

As Citi's primary investment firm in EMEA, the Company is the main employer of front office staff in Western Europe. The Company also provides some operational and technology services to other Citi entities, in line with the global technology model used by these businesses. The Company also relies on shared services provided centrally, or by local Citi entities, for which there are various intercompany service agreements.

The Company has in place a dedicated management team and governance structure to establish a cohesive strategy for all relevant businesses and functions. Critical risk and control functions such as finance, risk management, legal and compliance are all managed centrally to ensure compliance with established policies and standards across the Company, irrespective of business location.

For the purposes of CBCR, the appropriate disclosures required are summarised below:

	2021 ($ Million)				2021
Country	Turnover	Profit before Tax	Corporation Tax Paid (on cash basis)	Public Subsidies Received	Average Number of Employees
Dubai	7	—	—	—	6
Israel	57	5	1	—	209
Italy	—	1	—	—	—
Switzerland	9	(1)	—	—	16
United Kingdom	3,424	429	28	—	3,355
Sub - Total	**3,497**	**434**	**29**	—	**3,586**
Withholding Tax	—	—	96	—	—
Total	**3,497**	**434**	**125**	—	**3,586**

	2020 ($ Million)				2020
Country	Turnover	Profit before Tax	Corporation Tax Paid (on cash basis)	Public Subsidies Received	Average Number of Employees
Dubai	5	—	—	—	5
Israel	54	5	1	—	204
Italy	—	1	—	—	2
Spain*	3	3	1	—	—
Switzerland	11	1	—	—	15
United Kingdom	4,018	1,308	223	—	3,134
Sub - Total	**4,091**	**1,318**	**225**	—	**3,360**
Withholding Tax	—	—	85	—	—
Total	**4,091**	**1,318**	**310**	—	**3,360**

37. Country by country reporting (continued)

Basis of preparation

The basis of specific items of disclosure are as follows:

Turnover

Turnover comprises the following lines of the Profit & Loss Account of the Company's audited Financial Statements:

- Commission income and fees;
- Net dealing income;
- Interest receivable; and
- Interest payable.

Profit or (loss) before income tax

Profit and loss before tax is reported in line with the profit and loss before tax as presented in the Income statement on page 29.

Corporation tax paid / (received) (on cash basis)

Represents the total amount of income tax actually paid during the relevant fiscal year by CGML, including its branches in the relevant tax jurisdiction, as well as withholding tax which is an income tax paid by the payer of the income and treated as a payment on account of the recipient's tax liability. The withholding tax has been disclosed separately and where creditable has been offset against the UK corporation tax liability to prevent the same income being taxed twice.

This is distinct from the tax liability on the profit before income tax for the fiscal year, which in some cases is paid in instalments across the current and following year, such that in any year, cash tax paid is made up of part of the current and part of the prior year tax liabilities. These liabilities will depend on a number of factors including the existence of prior year losses which may be available for offset as well as items which may be booked outside of the income statement.

Public subsidies received

The CBCR Regulations do not include a definition of public subsidies received. The Company has determined that this will only include direct support by the Government and that it does not consider central bank interventions or tax incentives such as Research & Development tax credits as public subsidies.

Number of employees

Represents the average number of employees on a full-time equivalent (FTE) basis determined by taking an annual average of monthly total FTE, excluding any agency and contracting staff, under employment contracts in each country.

Citi's Value Proposition

A Mission of Enabling Growth and Economic Progress

What You Can Expect From Us and What We Expect From Ourselves

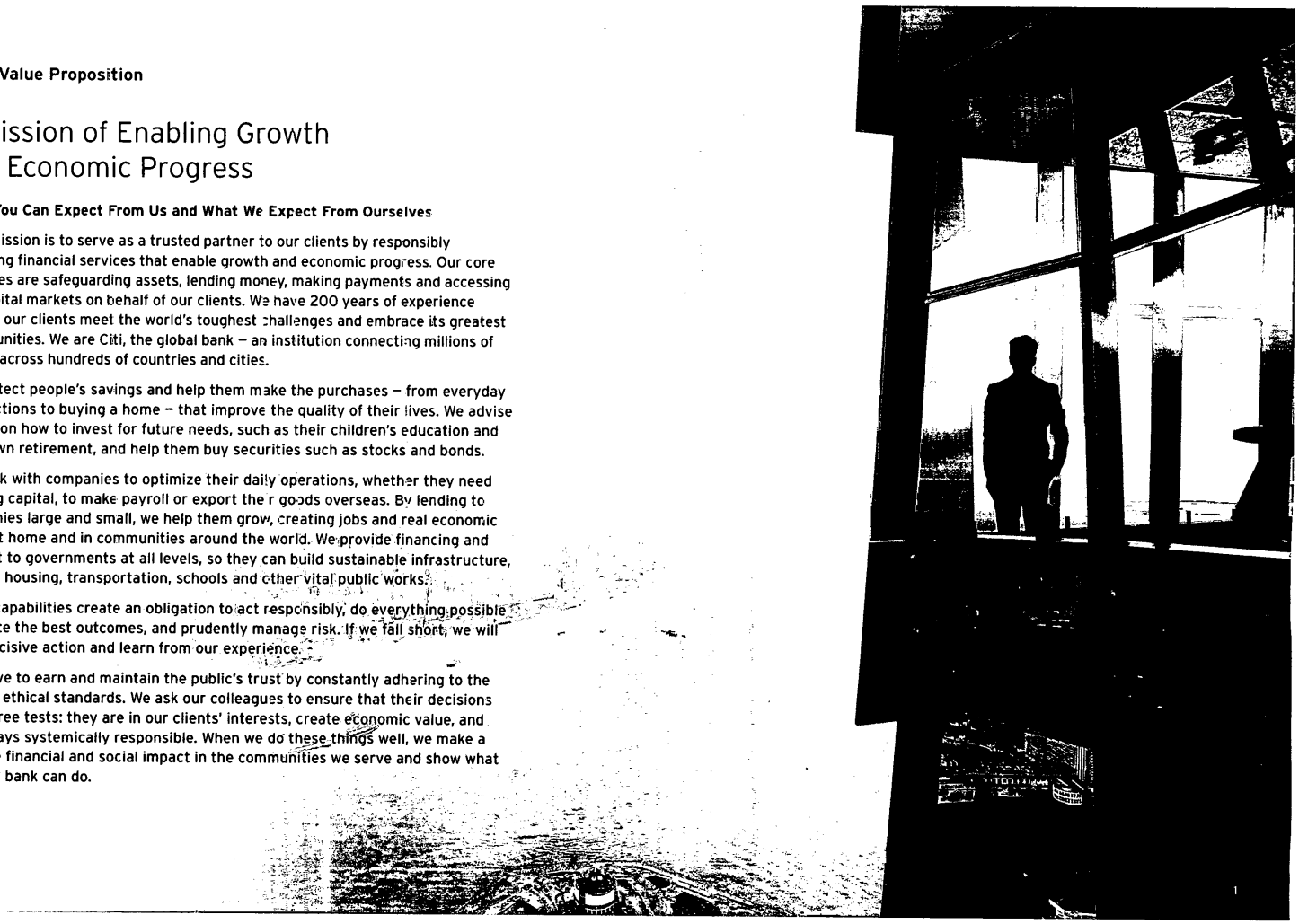
Citi's mission is to serve as a trusted partner to our clients by responsibly providing financial services that enable growth and economic progress. Our core activities are safeguarding assets, lending money, making payments and accessing the capital markets on behalf of our clients. We have 200 years of experience helping our clients meet the world's toughest challenges and embrace its greatest opportunities. We are Citi, the global bank — an institution connecting millions of people across hundreds of countries and cities.

We protect people's savings and help them make the purchases — from everyday transactions to buying a home — that improve the quality of their lives. We advise people on how to invest for future needs, such as their children's education and their own retirement, and help them buy securities such as stocks and bonds.

We work with companies to optimize their daily operations, whether they need working capital, to make payroll or export their goods overseas. By lending to companies large and small, we help them grow, creating jobs and real economic value at home and in communities around the world. We provide financing and support to governments at all levels, so they can build sustainable infrastructure, such as housing, transportation, schools and other vital public works.

These capabilities create an obligation to act responsibly, do everything possible to create the best outcomes, and prudently manage risk. If we fall short, we will take decisive action and learn from our experience.

We strive to earn and maintain the public's trust by constantly adhering to the highest ethical standards. We ask our colleagues to ensure that their decisions pass three tests: they are in our clients' interests, create economic value, and are always systemically responsible. When we do these things well, we make a positive financial and social impact in the communities we serve and show what a global bank can do.



Jane Fraser
Chief Executive Officer

Letter to Shareholders

2021 was a year when Citi reaffirmed its vital place in the world. As COVID-19 barreled along an unpredictable path, Citi continued to help clients and customers navigate the impacts of economic lockdowns, inflationary pressures and supply chain disruptions and access the short- and long-term liquidity they've needed to manage through the pandemic.

At the same time, we have seen more permanent shifts across our industry. Companies are going global at a record pace. Digitization has made scale and agility a competitive necessity. The line dividing business and politics has all but disappeared, creating an entirely new paradigm for multinationals. And companies are responding to calls from all stakeholder groups to become more purpose driven and take a leading role in sustainable practices.

In my conversations with clients and world leaders, they tell me this is the most complex landscape they can remember - but this is precisely the kind of environment in which Citi shines. For over 200 years, our global network has demonstrated the flexibility and resilience to adapt to the times. And with our unique global perspective, our on-the-ground knowledge, and our empathy and expertise, we are able to develop solutions to the toughest of problems. I am so proud of how our people have continued to step up and deliver for our clients and customers despite the challenges they have faced at home and in their personal lives.

Stability in unstable times

From an economic perspective, 2021 was a less volatile year, with a normalization of many but not all of our key business drivers and the release of much of the loan-loss reserves that we had set aside during the pandemic. That enabled us to generate net income of $22 billion on revenues of $71.9 billion, with a Return on Tangible Common Equity (RoTCE) of 13.4%. Excluding those reserve releases, our net income was $14.9 billion, and we had an RoTCE of 8.9%.

We ended 2021 with a solid balance sheet and a liquidity coverage ratio of 115%. Our Common Equity Tier 1 capital ratio at year-end was 12.2% as we prepared to adopt a new capital rule, the Standardized Approach for Counterparty Credit Risk (SA-CCR). During the year, we were able to return nearly $12 billion of capital to common shareholders.

Principles Guiding Citi's Strategic Refresh

- Being clinical in assessing which businesses Citi can retain or secure leading market positions.
- Being focused by directing resources to higher-returning businesses and away from the others.
- Ensuring Citi's businesses are connected and generate synergies.
- Simplifying Citi to unlock value for shareholders.

"We are confident we have put Citi on the right path to improve returns over the long term and deliver the full benefits of our firm to all our stakeholders."

Our institutional franchise had a very active year, advising and underwriting many significant deals. That included the largest spin-off and second-largest M&A transaction of 2021 and successful capital raises for the IPOs of a number of high-growth companies, such as the dating app Bumble and the game developer Krafton. We also served as joint global coordinator on the largest overnight trade on record, and we were an active bookrunner for the year's biggest U.S. dollar corporate bond offering, which was also the sixth-largest U.S. dollar transaction of all time.

Despite the headwinds of the low rate environment, our Treasury & Trade Solutions business maintained strong momentum. We saw robust client engagement and digital adoption, including a 96% year-over-year increase in digital account openings and a 62% increase in user engagement through our CitiDirect mobile banking platform. As transaction flows across CitiConnect digital channels grew by 38% compared with the prior year, we expanded our instant payments capability to 28 markets, now the largest footprint in the industry.

We continued to build out our leading custody platform, winning key mandates to provide post-trade services for some of our financial institution clients such as BlackRock. Citi Velocity, our digital platform for institutional clients, attracted about 200,000 unique client users in 2021, a 64% increase over 2020 and a 138% increase compared with 2019, before the pandemic.

For our consumer franchise, the picture was more mixed. Our wealth businesses continued their momentum. In our U.S. Retail and Cards businesses, government stimulus programs helped consumers accumulate additional savings, which translated into elevated payment rates and, consequently, a 5% decrease in loans and a 9% decrease in revenues.

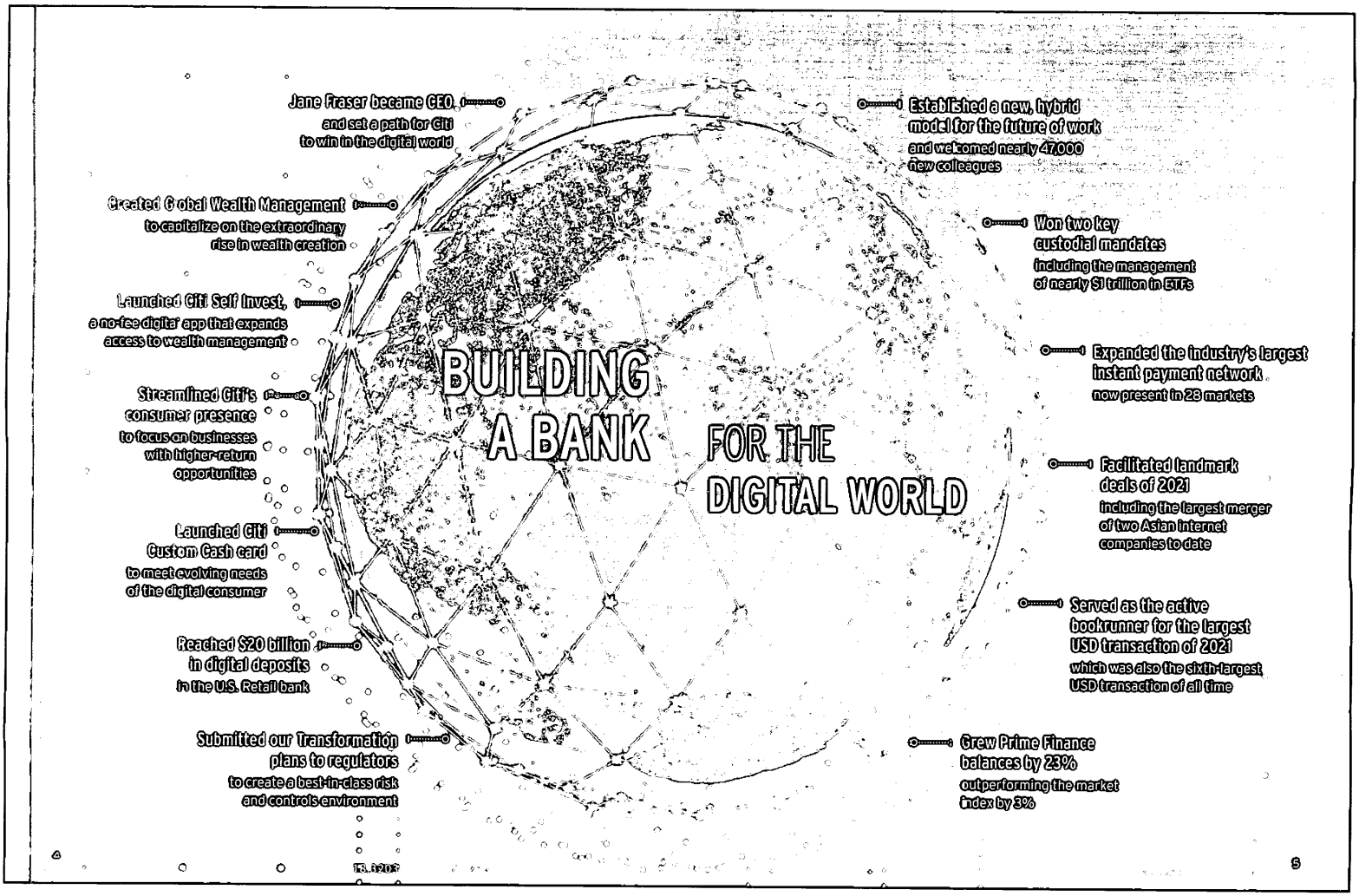
But other key drivers were more encouraging, including higher purchase sales across our cards products and a pickup in cards loans at the end of the year. Customers clearly were reaching for their Citi card over other options in their wallet, a testament to our dynamic portfolio of products, which we further strengthened with the launch of the Citi Custom Cash card and renewals of key retail partnerships such as AT&T, Macy's and Tractor Supply Company.

In 2021, we also benefited from double-digit growth in deposits across our consumer franchise in the U.S. Our strategy to complement the great service we provide in our U.S. retail branches with best-in-class digital tools continued to pay off: We've received $20 billion in digital deposits, and more than two-thirds have come from customers outside of our branch footprint, with about half of those deposits from our cardholders who did not previously have a retail relationship with us.

Realizing our full potential

In March 2022, one year after I assumed the role of CEO, we held our first Investor Day since 2017. It was an opportunity to update our investors after a year of refreshing our strategy to focus our resources and energies on a compelling mix of businesses that can drive growth and higher returns. Going forward, we will be a firm focused on five core units - Services, Markets, Banking, U.S. Personal Banking and Global Wealth Management - with strong connectivity among them to bring the full power of Citi to our clients.

[1] RoTCE represents annualized net income available to common shareholders as a percentage of average tangible common equity and is a non-GAAP financial measure. For a reconciliation to reported results, see page 44 of Citi's 2021 Annual Report on Form 10-K. In addition, net income excluding reserve releases is a non-GAAP financial measure.


BUILDING
A BANK FOR THE
DIGITAL WORLD
Jane Fraser became CEO,
and set a path for Citi
to win in the digital world
Established a new, hybrid
model for the future of work
and welcomed nearly 47,000
new colleagues
Created Global Wealth Management
to capitalize on the extraordinary
rise in wealth creation
Won two key
custodial mandates
including the management
of nearly $1 trillion in ETFs
Launched Citi Self Invest,
a no-fee digital app that expands
access to wealth management
Expanded the industry's largest
instant payment network
now present in 28 markets
Streamlined Citi's
consumer presence
to focus on businesses
with higher-return
opportunities
Facilitated landmark
deals of 2021
including the largest merger
of two Asian internet
companies to date
Launched Citi
Custom Cash card
to meet evolving needs
of the digital consumer
Served as the active
bookrunner for the largest
USD transaction of 2021
which was also the sixth-largest
USD transaction of all time
Reached $20 billion
in digital deposits
in the U.S. Retail bank
Submitted our Transformation
plans to regulators
to create a best-in-class risk
and controls environment
Grew Prime Finance
balances by 23%
outperforming the market
index by 3%

Our vision for Citi is to be the pre-eminent banking partner for institutions with cross-border needs, a global leader in wealth management and a valued personal bank in our home market. A key part of our strategy is investing in the Services businesses that are the heart of our global network and generate strong, fee-based returns. Through our Commercial Bank, we will expand our work with mid-sized companies who have aspirations to go global.

Another priority is our ambition in wealth management. By combining our Private Bank and consumer wealth businesses, we are creating a single, integrated platform to serve affluent consumers up through the ultra-high net worth segment. This also allows us to target clients in the middle of the wealth continuum, which to date has been largely untapped territory for us despite already having relationships with them in the Commercial Bank.

As we focus our resources in a more targeted way, we also have made some hard decisions about which businesses no longer fit into our vision for Citi. We have announced our intention to exit 14 of our consumer businesses in Asia, Europe and Mexico where there was not clear connectivity to the rest of our franchise. In every case, we are working to reach solutions that will provide optimal results for our people, clients and shareholders. Notwithstanding these decisions, Citi will continue to serve clients and invest in these markets through our institutional franchise and our Global Wealth Management business.

For our strategy to unlock the greatest possible value, we know we need an infrastructure that is scaled and agile and delivers a great user experience. The Consent Orders issued in 2020 by two of our U.S. regulators - the Federal Reserve Board (FRB) and Office of the Comptroller of the Currency (OCC) - underscored how we have underinvested in some of those areas for too long. In 2021, we launched an effort to address those deficiencies and simplify and modernize our operating model for the digital age. This work is so fundamental and consequential in nature that we call it our Transformation.

As part of our Transformation, we are enhancing our risk and controls environment to be more intuitive and automated. We are also improving how we organize and leverage the incredible amount of data we have as a global bank. Data can be a competitive advantage for us, helping us manage risk more efficiently, comply with regulations, deliver with excellence for our clients, identify revenue opportunities and achieve efficiencies.

Ensuring we have a culture characterized by excellence underpins the success of our Transformation. We have updated our leadership principles and adjusted our performance rating system, part of an effort to raise expectations and to increase accountability for how our people should approach their work. And by breaking down silos and deepening the sense of ownership that our people feel for the firm, we are building a culture that's focused on delivering the best outcomes for all our stakeholders.

A Snapshot of Citi's 2021

Key Financial Metrics

REVENUE	NET INCOME
$71.9 billion	$22 billion
EPS	**ROTCE**
$10.14	13.4%[2]
CET1 CAPITAL RATIO	**LIQUIDITY COVERAGE RATIO**
12.2%[3]	115%

GREW OUR TANGIBLE BOOK VALUE PER SHARE BY

7%

RETURNED NEARLY

$12 billion

IN CAPITAL TO OUR COMMON SHAREHOLDERS

In 2021, we submitted our plan to the FRB and OCC. From the beginning of this work, we have been staying close to our regulators and keeping them updated on our progress. But it's also important to note that our Transformation goes far beyond remediation. This is about modernizing our systems and structures so that we can better manage the speeds and complexities of the digital world. This is about putting Citi in the position to compete and win.

Taking into account our growth plan, the investments we are making in our businesses and efficiencies that will come out of our work, we believe we can increase shareholder value and achieve an RoTCE of 11%-12% in the next three to five years. Over the longer term, I believe that our strategy will lead to a higher-quality earnings mix, and we'll further increase our returns as a result.

Financial Performance

Key Highlights across Our Businesses (YoY)

INVESTMENT BANKING REVENUES	SECURITIES SERVICES REVENUES
↑ 30%	↑ 6%

EQUITIES MARKETS REVENUES

↑ 25%

TREASURY & TRADE SOLUTIONS AVERAGE TRADE LOANS

↑ 5%

AVERAGE U.S. CONSUMER DEPOSITS	U.S. CREDIT CARD SPEND VOLUME
↑ 17%	↑ 21%
PRIVATE BANK REVENUES	**U.S. INVESTMENT ASSETS UNDER MANAGEMENT**
↑ 6%[4]	↑ 8%

A bank with a brain and a soul

Our environmental, social and governance (ESG) agenda builds on decades of leadership and is a reflection of the special responsibility we feel as a global bank to help solve many of society's toughest challenges, such as the impending climate crisis. On my first day as CEO, we committed Citi to achieving net zero greenhouse gas emissions by 2050. Over the past year, we have been hard at work mapping out how we are going to get there, rolling up our sleeves to partner with our clients and guide the industry forward. Earlier this year, we released our initial plan, setting 2030 targets for our energy and power loan portfolios.

Our commitment to societal progress has also led us to take on the challenge of economic inclusion. Since launching our Action for Racial Equity initiative in 2020, we have invested more than $1 billion to help close the racial wealth gap in the U.S. That includes investing in Black-founded companies through our Citi Impact Fund, investing in minority depository institutions and inviting them to participate in revenue-generation opportunities alongside Citi, and committing equity to Black real estate developers to preserve affordable and workforce housing.

Across the globe, we have continued maximizing the impact we can make through financial innovation, particularly in our most underserved communities. Since 2007, we have helped 3.7 million women around the world launch or grow their businesses. In 2021, we issued a first-of-its-kind $1 billion social finance bond to increase access to essential services in emerging markets - part of a goal we set last year to expand access to housing, education and healthcare for 15 million low-income households, including 10 million women. Our recently announced plan to eliminate overdraft fee charges in the U.S. will also increase financial inclusion.

All told, we have committed $1 trillion to sustainable financing by 2030, which includes $500 billion toward environmental activities and $500 billion toward social activities. And every day, we are seeing how our ESG agenda is such a strong selling point for Citi in the perennial battle for talent.

Ensuring we have the right talent is critically important to our firm's success. Over the past year, we have attracted some tremendous new leaders to Citi and promoted our highest-performing leaders within the firm to new roles. I'm also proud that we recently met and exceeded goals to increase the representation of women and Black colleagues in our senior ranks - and we did so by embedding these goals in our business strategy, strengthening our talent pipelines, evolving our recruitment and hiring, promoting internally and making Citi a more attractive place to work. In other words, we lifted everyone up.

As we look to the horizon, the stakes could not be higher - the world is only becoming more complex and more competitive. But at Citi, we are determined to seize this moment. We are excited about the work we have done over the past year to focus our strategy on where we can win. And we are confident we have put Citi on the right path to improve returns over the long term and deliver the full benefits of our firm to all our stakeholders.

Sincerely,

Jane Fraser

Jane Fraser
Chief Executive Officer, Citigroup Inc.

[2] See page 11 of Citi's 2021 Form 10-K.
[3] See page 11 of Citi's 2021 Form 10-K.
[4] See page 16 of Citi's 2021 Form 10-K.

Through Bridge Built by Citi, Citi aims to expand access to capital for small and medium-sized businesses in the U.S. while widening the customer base for lenders, helping to democratize the loan process.

EMBEDDING ESG ACROSS OUR BUSINESSES

Unveiled initial plans to achieve NET 0 EMISSIONS BY 2050

Served as the financial advisor to **Gavi's COVAX FACILITY,** which is working on the equitable distribution of COVID-19 vaccines

Successfully met and exceeded **3-year goals** to increase representation of Black and women talent at the firm

Committed $1 trillion to sustainable finance by 2030 ($500 billion for environmental activities and $500 billion for social activities)

Issued a first-of-its-kind $1 billion social finance bond to increase access to essential services in emerging markets

Named **leading affordable housing lender in the U.S.** for 11th consecutive year and financed **$5.64 billion** for affordable housing units across the U.S. in 2021

Granted **$275 million** to date to support the Citi Foundation's **Pathways to Progress** initiative to improve economic opportunities for **underserved youth**

Invested over $1 billion in our Action for Racial Equity initiative to help close the racial wealth gap in the U.S.

Expanded portfolio of the $200 million Citi Impact Fund to provide capital for "double-bottom-line" companies

Named one of the top **15** most responsible and purpose-driven companies by JUST Capital

Co-founded the **Net Zero Banking Alliance** to help guide the industry to net zero

Supported **3.7 million women entrepreneurs** globally to date in launching and growing their businesses

FOR THE LOVE OF

changing perceptions.

for the love of progress

See how Team Citi is making history
and helping change perceptions at
citi.com/ParaSport

citi

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2021

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission file number 1-9924

Citigroup Inc.

(Exact name of registrant as specified in its charter)

Delaware	52-1568099
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
388 Greenwich Street, New York NY	10013
(Address of principal executive offices)	(Zip code)

(212) 559-1000
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Securities Exchange Act of 1934 formatted in Inline XBRL: See Exhibit 99.01

Securities registered pursuant to Section 12(g) of the Act: none

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐
Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. Yes ☐

Indicate by check mark whether the Registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of Citigroup Inc. common stock held by non-affiliates of Citigroup Inc. on June 30, 2021 was approximately $143.2 billion.

Number of shares of Citigroup Inc. common stock outstanding on January 31, 2022: 1,980,894,613

Documents Incorporated by Reference: Portions of the registrant's proxy statement for the annual meeting of stockholders scheduled to be held on April 26, 2022 are incorporated by reference in this Form 10-K in response to Items 10, 11, 12, 13 and 14 of Part III.

Available on the web at www.citigroup.com

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* For additional information regarding Citigroup's Directors, see "Corporate Governance" and "Proposal 1: Election of Directors" in the definitive Proxy Statement for Citigroup's Annual Meeting of Stockholders scheduled to be held on April 26, 2022, to be filed with the SEC (the Proxy Statement), incorporated herein by reference.

** See "Compensation Discussion and Analysis," "The Personnel and Compensation Committee Report," and "2021 Summary Compensation Table and Compensation Information" and "CEO Pay Ratio" in the Proxy Statement, incorporated herein by reference.

*** See "About the Annual Meeting," "Stock Ownership," and "Equity Compensation Plan Information" in the Proxy Statement, incorporated herein by reference.

**** See "Corporate Governance—Director Independence," "—Certain Transactions and Relationships, Compensation Committee Interlocks and Insider Participation" and "—Indebtedness" in the Proxy Statement, incorporated herein by reference.

***** See "Proposal 2: Ratification of Selection of Independent Registered Public Accountants" in the Proxy Statement, incorporated herein by reference.

CITIGROUP'S 2021 ANNUAL REPORT ON FORM 10-K

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OVERVIEW

Citigroup's history dates back to the founding of the City Bank of New York in 1812.

Citigroup 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.

At December 31, 2021, Citi had approximately 223,400 full-time employees, compared to approximately 210,000 full-time employees at December 31, 2020. For additional information, see "Human Capital Resources and Management" below.

Throughout this report, "Citigroup," "Citi" and "the Company" refer to Citigroup Inc. and its consolidated subsidiaries.

For a list of terms and acronyms used in this Annual Report on Form 10-K and other Citigroup presentations, see "Glossary of Terms and Acronyms" at the end of this report.

Additional Information

Additional information about Citigroup is available on Citi's website at www.citigroup.com. Citigroup's recent annual reports on Form 10-K, quarterly reports on Form 10-Q and proxy statements, as well as other filings with the U.S. Securities and Exchange Commission (SEC), are available free of charge through Citi's website by clicking on the "Investors" tab and selecting "SEC Filings," then "Citigroup Inc." The SEC's website also contains current reports on Form 8-K and other information regarding Citi at www.sec.gov.

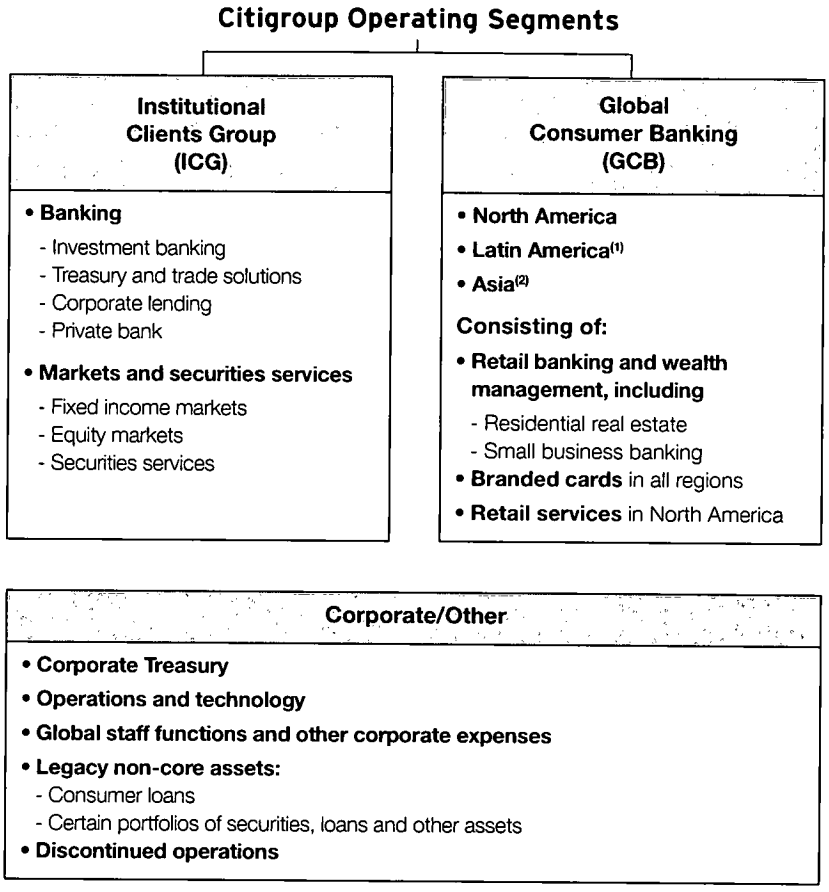
For a discussion of 2020 versus 2019 results of operations of *ICG*, *GCB* in *North America*, *Latin America* and *Asia*, and *Corporate/Other*, see each respective business's results of operations in Citi's 2020 Annual Report on Form 10-K.

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

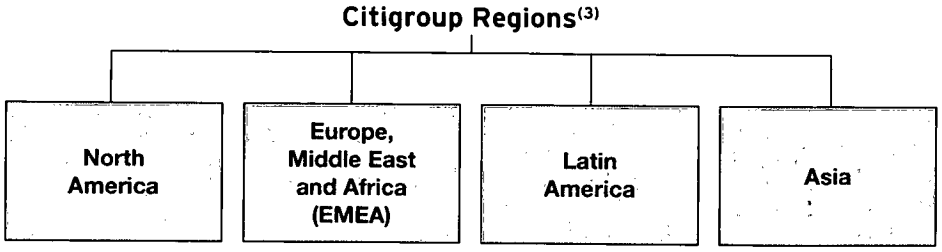
Please see "Risk Factors" below for a discussion of material risks and uncertainties that could impact Citi's businesses, results of operations and financial condition.

As of December 31, 2021, Citigroup was managed pursuant to two operating segments—*Institutional Clients Group* and *Global Consumer Banking*—with the remaining operations in *Corporate/Other*. (For information on Citi's planned revision to its reporting structure effective for the first quarter of 2022, see "Strategic Refresh—Market Exits and Planned Revision to Reporting Structure" below.)

For a further description of the operating segments and the products and services they provide, see "Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 3 to the Consolidated Financial Statements.



The following are the four regions in which Citigroup operates. The regional results are fully reflected in the segment and *Corporate/Other* results above.



(1) *Latin America GCB* consists of Citi's consumer banking business in Mexico.
(2) *Asia GCB* includes the results of operations of *GCB* activities in certain *EMEA* countries for all periods presented.
(3) *North America* includes the U.S., Canada and Puerto Rico, *Latin America* includes Mexico and *Asia* includes Japan.

Strategic Refresh–Market Exits and Planned Revision to Reporting Structure

As part of its strategic refresh, Citi is making management reporting changes to align with its vision and strategy, including to assist Citi in decisions about resources and capital allocation and to assess business performance. In the first quarter of 2022, Citi will revise its financial reporting structure to align with these management reporting changes to enable investors and others to better understand the performance of Citi's businesses (see the table below for additional information on the revised financial reporting structure):

- First, Citi is creating a *Personal Banking and Wealth Management* segment. It will consist of two distinct reporting units: *U.S. Personal Banking* businesses and a *Global Wealth Management* business, which will include the private bank.
- Second, with respect to *Institutional Clients Group (ICG)*, Citi will begin reporting under three reporting units: *Services*, *Banking* and *Markets*. *Services* will include treasury and trade solutions and securities services, reflecting the importance of these businesses to Citi's future.
- Finally, Citi is creating *Legacy Franchises*, a segment that will consist of all the businesses Citi intends to exit (see below), including its remaining Legacy Holdings assets.

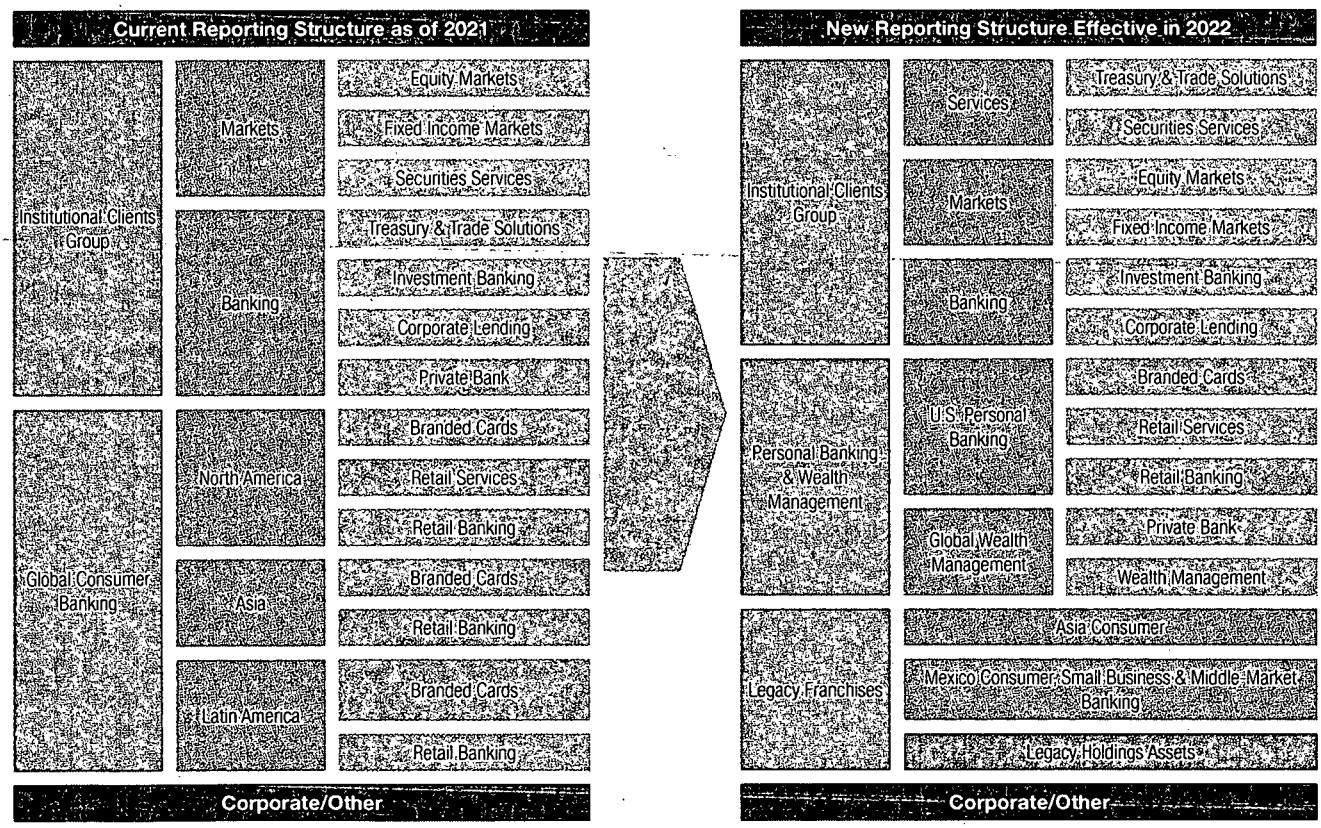
In conjunction with the strategic refresh, in 2021 Citi announced that it will focus its consumer banking franchises in *Asia* and *EMEA* on four wealth centers: Singapore, Hong Kong, the United Arab Emirates (UAE) and London. As a result, Citi is pursuing exits of its consumer franchises in the remaining 13 markets across these two regions.

In 2021 and early 2022, Citi announced sale agreements for or exit of a majority of the 13 markets (for additional information, see "Executive Summary" and "*Asia GCB*" below). *ICG* will continue to serve clients, including its commercial banking clients, in all of these markets.

In addition, in January 2022, Citi announced that it intends to exit the consumer, small business and middle-market banking operations of Citibanamex. The businesses in the intended exit include the Mexico consumer and small business banking operations, reported as part of Citi's *GCB* segment, as well as the Mexico middle-market banking business, reported in Citi's *ICG* segment. These operations represent the entirety of the *Latin America GCB* unit. Citi will continue to operate a locally licensed banking business in Mexico through its global *ICG* (for additional information, see "Executive Summary" and "*Latin America GCB*" below).

For additional information regarding the exit markets, see Note 2 to the Consolidated Financial Statements. For information regarding risks related to the exit markets, see "Risk Factors" below.

The following table summarizes both Citi's reporting structure during 2021 and its planned 2022 financial reporting structure:



MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

EXECUTIVE SUMMARY

As described further throughout this Executive Summary, Citi demonstrated continued progress across the franchise during 2021:

- Citi's earnings increased significantly versus the prior year, largely reflecting an allowance for credit loss (ACL) release of approximately $8.8 billion as a result of continued improvement in both the macroeconomic environment and portfolio credit quality.
- Citi's revenues declined 5% from the prior year. Excluding a pretax loss of approximately $0.7 billion (approximately $0.6 billion after-tax) related to Citi's agreement to sell its Australia consumer banking business in *Asia Global Consumer Banking (GCB)* (see "Citigroup" below), Citi's revenues declined 4%, as strength in investment banking, equity markets, the private bank and securities services in *Institutional Clients Group (ICG)* was more than offset by normalization in market activity in fixed income markets within *ICG*, as well as the impact of lower deposit spreads and card loans across *GCB*.
- Citi's expenses included pretax costs of approximately $1.2 billion ($1.1 billion after-tax) primarily related to charges incurred from the voluntary early retirement program (VERP) in connection with the wind-down of the Korea consumer banking business (for additional information, see "*Asia GCB*" below).
- Citi continued to invest in its transformation, including infrastructure supporting its risk and control environment, and make business-led investments.
- Citi had broad-based deposit growth across *ICG* and *GCB* (up 3% and 5%, respectively), reflecting continued engagement across both corporate and consumer clients.
- Citi returned approximately $11.8 billion of capital to its common shareholders in the form of $4.2 billion in dividends and $7.6 billion in common share repurchases, totaling approximately 105 million common shares, while maintaining robust regulatory capital ratios.
- In addition to the sale announcements related to *Asia GCB*, Citi also announced it intends to exit the consumer, small business and middle-market banking operations of Citibanamex in Mexico. Citi's planned divestitures of its consumer businesses across Mexico, *Asia* and *EMEA* are aligned with the repositioning of its consumer operations to focus on global wealth centers, as well as payments and lending and a targeted retail presence in the U.S. (For additional information on the exit markets and Citi's revised reporting structure effective for the first quarter of 2022, see "Strategic Refresh—Market Exits and Revised Reporting Strategy" above and "*Latin America GCB*" and "*Asia GCB*" below.)

Although economic growth and employment rates have continued to recover from pandemic-related lows, particularly in the U.S., various macroeconomic and other challenges and uncertainties related to, among other things, the duration and severity of the pandemic-related public health crisis, disruptions of global supply chains, inflationary pressures, increasing interest rates and geopolitical tensions involving Eastern Europe, will continue to create uncertainty around Citi's businesses and results.

For a discussion of trends, uncertainties and risks that will or could impact Citi's businesses, results of operations and financial condition during 2022, see "2021 Results Summary," "Risk Factors," each respective business's results of operations and "Managing Global Risk" below.

2021 Results Summary

Citigroup

Citigroup reported net income of $22.0 billion, or $10.14 per share, compared to net income of $11.0 billion, or $4.72 per share, in the prior year. The increase in net income was driven by lower cost of credit, partially offset by higher expenses and lower revenues. Citigroup's effective tax rate was 20%, up modestly from 19% in the prior year. Earnings per share increased significantly, primarily driven by net income.

Citigroup revenues of $71.9 billion decreased 5% from the prior year. Excluding the Australia loss on sale, Citigroup revenues decreased 4%, primarily driven by lower revenues in both *ICG* and *GCB*, partially offset by higher revenues in *Corporate/Other*.

As discussed above, Citi's 2021 results include the impacts of divestitures of Citi's consumer banking businesses in *Asia*. Reported revenues include the Australia loss on sale (approximately $0.7 billion pretax, $0.6 billion after-tax), primarily reflecting the impact of a currency translation adjustment (CTA) loss (net of hedges) already reflected in the *Accumulated other comprehensive income (AOCI)* component of equity. Upon closing, the CTA balance will be removed from the *AOCI* component of equity, resulting in a neutral impact to Citi's Common Equity Tier 1 Capital.

Reported expenses include the impact of the Korea VERP of approximately $1.1 billion (approximately $0.8 billion after-tax) and contract modification costs related to the *Asia* divestitures of approximately $119 million (approximately $98 million after-tax). (As used throughout this Form 10-K, Citi's results of operations and financial condition excluding the impact of the Australia loss on sale, Korea VERP and other *Asia* divestiture-related costs are non-GAAP financial measures. Citi believes the presentation of its results of operations and financial condition excluding the divestiture-related impacts described above provides a meaningful depiction of the underlying fundamentals of its broader results and *Asia GCB* businesses' results for investors, industry analysts and others.)

Citigroup's end-of-period loans decreased 1% from the prior year to $668 billion. Excluding the impact of foreign currency translation into U.S. dollars for reporting purposes (FX translation), Citigroup's end-of-period loans were largely unchanged, as growth in *ICG* was offset by lower loans in *GCB* and *Corporate/Other*. Citigroup's end-of-period deposits

increased 3% to $1.3 trillion. Excluding the impact of FX translation, Citigroup's end-of-period deposits increased 4%, reflecting growth in both *GCB* and *ICG*. (As used throughout this Form 10-K, Citi's results of operations excluding the impact of FX translation are non-GAAP financial measures. Citi believes the presentation of its results of operations and financial condition excluding the impact of FX translation provides a meaningful depiction of the underlying fundamentals of its businesses for investors, industry analysts and others.)

Expenses

Citigroup operating expenses of $48.2 billion increased 9% versus the prior year. Excluding the impact of the *Asia* divestitures, expenses of $47.0 billion increased 6%, primarily reflecting investments in Citi's transformation, including infrastructure supporting its risk and control environment, business-led investments and revenue- and transaction-related expenses, partially offset by productivity savings. Citi expects expenses in 2022 to continue to be impacted by its transformation-related and business-led investments.

Cost of Credit

Citi's total provisions for credit losses and for benefits and claims were a benefit of $3.8 billion, compared to a cost of $17.5 billion in the prior year primarily related to the pandemic. The decreased cost of credit was driven by a net ACL reserve release of $8.8 billion (versus a build of $9.8 billion in the prior year) as well as lower net credit losses. Citi's net ACL release primarily reflected improvement in Citi's macroeconomic outlook and portfolio credit quality. Citi could experience higher credit costs in 2022, as the level of ACL releases from 2021 are unlikely to continue, and Citi expects to build ACL reserves for new lending volumes.

For further information on the drivers of Citi's ACL, see "Significant Accounting Policies and Significant Estimates—Citi's Allowance for Credit Losses (ACL)" below.

Net credit losses of $4.9 billion declined 36% from the prior year. Consumer net credit losses of $4.5 billion decreased 32%, primarily reflecting lower loan volumes and improved delinquencies in the *North America* cards portfolios. Corporate net credit losses of $395 million decreased 60%, primarily reflecting improvements in portfolio credit quality.

For additional information on Citi's consumer and corporate credit costs and ACL, see each respective business's results of operations and "Credit Risk" below.

Capital

Citigroup's Common Equity Tier 1 Capital ratio was 12.2% as of December 31, 2021, based on the Basel III Standardized Approach framework for determining risk-weighted assets, compared to 11.5% as of December 31, 2020, based on the Basel III Advanced Approaches for determining risk-weighted assets. The increase in the ratio primarily reflected actions to reduce risk-weighted assets (RWA) and a temporary pause in common share repurchases in the fourth quarter of 2021, in preparation for the implementation of the Standardized Approach for Counterparty Credit Risk (SA-CCR) on January 1, 2022. Citi resumed common share repurchases in January 2022.

Citigroup's Supplementary Leverage ratio was 5.7% as of December 31, 2021, compared to 7.0% as of December 31, 2020. The decrease was primarily driven by the expiration of temporary relief granted by the Federal Reserve Board (FRB) as of the end of the first quarter of 2021. For additional information on SA-CCR and Citi's capital ratios, see "Capital Resources" below.

Institutional Clients Group

ICG net income of $15.7 billion increased 36%, reflecting lower cost of credit, partially offset by higher expenses and lower revenues. *ICG* operating expenses increased 8% to $26.5 billion, reflecting continued investments in Citi's transformation, business-led investments and revenue- and transaction-related expenses, partially offset by productivity savings.

ICG revenues of $43.9 billion decreased 3%, as a 7% increase in *Banking* revenues was more than offset by an 11% decline in *Markets and securities services* revenues. The increase in *Banking* revenues included the impact of $144 million of losses on loan hedges related to corporate lending and the private bank, compared to losses of $51 million in the prior year.

Banking revenues of $23.3 billion (excluding the impact of losses on loan hedges) increased 7%, as higher revenues in investment banking and the private bank were partially offset by lower revenues in treasury and trade solutions and corporate lending. Investment banking revenues of $7.5 billion increased 30%, reflecting growth across products, particularly in advisory and equity underwriting. Advisory revenues increased 78% to $1.8 billion, equity underwriting revenues increased 53% to $2.4 billion and debt underwriting revenues increased 3% to $3.3 billion.

Treasury and trade solutions revenues of $9.4 billion declined 4%, as higher fee revenues, including a recovery in commercial card revenues, as well as growth in trade were more than offset by the impact of lower deposit spreads. Private bank revenues increased 5%. Excluding the impact of gains on loan hedges, private bank revenues of $4.0 billion increased 6%, driven by higher loan volumes and spreads, as well as higher managed investments and deposits, partially offset by lower deposit spreads. Corporate lending revenues decreased 3%. Excluding the impact of losses on loan hedges, corporate lending revenues of $2.3 billion decreased 1%, as lower cost of funds was more than offset by lower loan volumes.

Markets and securities services revenues of $20.8 billion decreased 11%. Fixed income markets revenues of $13.7 billion decreased 22%, reflecting a normalization in market activity across rates and spread products. Equity markets revenues of $4.5 billion increased 25%, driven by growth across all products, reflecting solid client activity and favorable market conditions. Securities services revenues of $2.7 billion increased 6%, as strong fee revenues, driven by higher settlement volumes and higher assets under custody, were partially offset by lower deposit spreads. For additional information on the results of operations of *ICG* in 2021, see "*Institutional Clients Group*" below.

Global Consumer Banking

GCB net income was $6.1 billion, compared to net income of $667 million in the prior year, reflecting lower cost of credit, partially offset by lower revenues and higher expenses. *GCB* operating expenses of $20.0 billion increased 12%. Excluding the impact of FX translation and the *Asia* divestitures, expenses increased 5%, reflecting continued investments in Citi's transformation, as well as business-led investments and volume-related expenses, partially offset by productivity savings.

GCB revenues of $27.3 billion decreased 10% from the prior year. Excluding the impact of FX translation and the Australia loss on sale, revenues decreased 9%, as continued solid deposit growth and growth in assets under management were more than offset by lower card loans and lower deposit spreads. For additional information on *GCB*'s results of operations, including the impact of FX translation, see "*Global Consumer Banking*" below.

North America GCB revenues of $17.5 billion decreased 9%, with lower revenues across branded cards, retail services and retail banking. Branded cards revenues of $8.2 billion decreased 7%, reflecting continued higher payment rates. Retail services revenues of $5.1 billion decreased 15%, reflecting continued higher payment rates and lower average loans as well as higher partner payments. Retail banking revenues of $4.2 billion decreased 7%, as the benefit of stronger deposit volumes was more than offset by lower deposit spreads and lower mortgage revenues.

North America GCB average deposits of $206 billion increased 17% year-over-year and average retail banking loans of $50 billion decreased 4% year-over-year, while assets under management of $87 billion increased 8%. Average branded cards loans of $81 billion decreased 4% and average retail services loans decreased 7%, reflecting higher payment rates. Branded cards spend volume of $411 billion increased 21% and retail services spend volume of $92 billion increased 18%, reflecting a recovery in sales activity from the pandemic-driven low levels in the prior year. For additional information on the results of operations of *North America GCB* in 2021, see "*Global Consumer Banking—North America GCB*" below.

International *GCB* revenues (consisting of *Latin America GCB* and *Asia GCB* (which includes the results of operations in certain *EMEA* countries)) of $9.8 billion declined 11% versus the prior year. Excluding the impact of FX translation and the Australia loss on sale, international *GCB* revenues declined 7%. Excluding the impact of FX translation, *Latin America GCB* revenues decreased 9%, driven by lower average loans and lower deposit spreads. Excluding the impact of FX translation and the Australia loss on sale, *Asia GCB* revenues decreased 6%, reflecting lower spreads, partially offset by higher investment revenues. For additional information on the results of operations of *Latin America GCB* and *Asia GCB* in 2021, including the impacts of FX translation, see "*Global Consumer Banking—Latin America GCB*" and "*Global Consumer Banking—Asia GCB*" below. For additional information on Citi's consumer banking business in Australia, see "*Global Consumer Banking—Asia GCB*" below.

Year-over-year, excluding the impact of FX translation, international *GCB* average deposits of $146 billion increased 5%, average retail banking loans of $72 billion decreased 3% and assets under management of $145 billion increased 5%. On this basis, international GCB average card loans of $20 billion decreased 13%, while credit card spend volumes of $100 billion increased 9%, reflecting a continued recovery in credit card spend activity from the pandemic-related low levels in the prior year.

Corporate/Other

Corporate/Other net income was $215 million, compared to a net loss of $1.1 billion in the prior year, reflecting higher revenues, lower expenses, lower cost of credit, and the release of a foreign tax credit (FTC) valuation allowance. Operating expenses of $1.6 billion decreased 14%, reflecting the absence of the prior year's civil money penalty and the wind-down of legacy assets, partially offset by increases related to Citi's transformation.

Corporate/Other revenues of $667 million compared to $71 million in the prior year, primarily driven by higher net revenue from the investment portfolio. For additional information on the results of operations of *Corporate/Other* in 2021, see "*Corporate/Other*" below.

CITI'S CONSENT ORDER COMPLIANCE

Citi has embarked on a multiyear transformation, with the target outcome to change Citi's business and operating models such that they simultaneously strengthen risk and controls and improve Citi's value to customers, clients and shareholders.

This includes efforts to effectively implement the October 2020 FRB and Office of the Comptroller of the Currency (OCC) consent orders issued to Citigroup and Citibank, respectively. In the second quarter of 2021, Citi made an initial submission to the OCC, and submitted its plans to address the consent orders to both regulators during the third quarter of 2021. Citi continues to work constructively with the regulators, and will continue to reflect their feedback in its project plans and execution efforts.

As discussed above, Citi's efforts include continued investments in its transformation, including the remediation of its consent orders. Citi's CEO has made the strengthening of Citi's risk and control environment a strategic priority and has established a Chief Administrative Officer organization to centralize program management. In addition, the Citigroup and Citibank Boards of Directors each formed a Transformation Oversight Committee, an ad hoc committee of each Board, to provide oversight of management's remediation efforts under the consent orders.

For additional information about the consent orders, see "Risk Factors—Compliance Risks" below and Citi's Current Report on Form 8-K filed with the SEC on October 7, 2020.

RESULTS OF OPERATIONS

SUMMARY OF SELECTED FINANCIAL DATA

Citigroup Inc. and Consolidated Subsidiaries

In millions of dollars, except per share amounts	**2021**	2020	2019	2018	2017
Net interest income[1]	**$42,494**	$44,751	$48,128	$46,562	$45,061
Non-interest revenue	**29,390**	30,750	26,939	27,474	28,632
Revenues, net of interest expense	**$71,884**	$75,501	$75,067	$74,036	$73,693
Operating expenses[1]	**48,193**	44,374	42,783	43,023	43,481
Provisions for credit losses and for benefits and claims	**(3,778)**	17,495	8,383	7,568	7,451
Income from continuing operations before income taxes	**$27,469**	$13,632	$23,901	$23,445	$22,761
Income taxes[2]	**5,451**	2,525	4,430	5,357	29,388
Income (loss) from continuing operations	**$22,018**	$11,107	$19,471	$18,088	$ (6,627)
Income (loss) from discontinued operations, net of taxes	**7**	(20)	(4)	(8)	(111)
Net income (loss) before attribution of noncontrolling interests	**$22,025**	$11,087	$19,467	$18,080	$ (6,738)
Net income attributable to noncontrolling interests	**73**	40	66	35	60
Citigroup's net income (loss)[2]	**$21,952**	$11,047	$19,401	$18,045	$ (6,798)
Earnings per share					
Basic					
Income (loss) from continuing operations	**$ 10.21**	$ 4.75	$ 8.08	$ 6.69	$ (2.94)
Net income (loss)	**10.21**	4.74	8.08	6.69	(2.98)
Diluted					
Income (loss) from continuing operations	**$ 10.14**	$ 4.73	$ 8.04	$ 6.69	$ (2.94)
Net income (loss)	**10.14**	4.72	8.04	6.68	(2.98)
Dividends declared per common share	**2.04**	2.04	1.92	1.54	0.96
Common dividends	**$ 4,196**	$ 4,299	$ 4,403	$ 3,865	$ 2,595
Preferred dividends	**1,040**	1,095	1,109	1,174	1,213
Common share repurchases	**7,600**	2,925	17,875	14,545	14,538

Table continues on the next page, including footnotes.

SUMMARY OF SELECTED FINANCIAL DATA (Continued)

Citigroup Inc. and Consolidated Subsidiaries

In millions of dollars, except per share amounts, ratios and direct staff	**2021**	2020	2019	2018	2017
At December 31:					
Total assets	**$2,291,413**	$2,260,090	$1,951,158	$1,917,383	$1,842,465
Total deposits	**1,317,230**	1,280,671	1,070,590	1,013,170	959,822
Long-term debt	**254,374**	271,686	248,760	231,999	236,709
Citigroup common stockholders' equity[2]	**182,977**	179,962	175,262	177,760	181,487
Total Citigroup stockholders' equity[2]	**201,972**	199,442	193,242	196,220	200,740
Average assets	**2,347,709**	2,226,454	1,978,805	1,920,242	1,875,438
Direct staff *(in thousands)*	**223**	210	200	204	209
Performance metrics					
Return on average assets	**0.94%**	0.50%	0.98%	0.94%	(0.36)%
Return on average common stockholders' equity[2][3]	**11.5**	5.7	10.3	9.4	(3.9)
Return on average total stockholders' equity[2][3]	**10.9**	5.7	9.9	9.1	(3.0)
Return on tangible common equity (RoTCE)[2][4]	**13.4**	6.6	12.1	11.0	8.1
Efficiency ratio (total operating expenses/total revenues, net)	**67.0**	58.8	57.0	58.1	59.0
Basel III ratios[2][5]					
Common Equity Tier 1 Capital[6]	**12.25%**	11.51%	11.79%	11.86%	12.36%
Tier 1 Capital[6]	**13.91**	13.06	13.33	13.43	14.06
Total Capital[6]	**16.04**	15.33	15.87	16.14	16.30
Supplementary Leverage ratio	**5.73**	6.99	6.20	6.40	6.68
Citigroup common stockholders' equity to assets[2]	**7.99%**	7.96%	8.98%	9.27%	9.85%
Total Citigroup stockholders' equity to assets[2]	**8.81**	8.82	9.90	10.23	10.90
Dividend payout ratio[7]	**20**	43	24	23	NM
Total payout ratio[8]	**56**	73	122	109	NM
Book value per common share[2]	**$ 92.21**	$ 86.43	$ 82.90	$ 75.05	$ 70.62
Tangible book value (TBV) per share[2][4]	**79.16**	73.67	70.39	63.79	60.16

(1) Revenue previously referred to as net interest revenue is now referred to as net interest income. During the fourth quarter of 2021, Citi reclassified deposit insurance expenses from *Interest expense* to *Other operating expenses* for all periods presented. Amounts reclassified for each year were $1,207 million for 2021, $1,203 million for 2020, $781 million for 2019, $1,182 million for 2018 and $1,249 million for 2017. See Note 1 to the Consolidated Financial Statements.

(2) 2017 includes the one-time impact related to enactment of the Tax Cuts and Jobs Act (Tax Reform). 2020, 2019 and 2018 reflect the tax rate structure post Tax Reform. RoTCE for 2017 excludes the one-time impact from Tax Reform and is a non-GAAP financial measure. For additional information, see "Significant Accounting Policies and Significant Estimates—Income Taxes" below.

(3) The return on average common stockholders' equity is calculated using net income less preferred stock dividends divided by average common stockholders' equity. The return on average total Citigroup stockholders' equity is calculated using net income divided by average Citigroup stockholders' equity.

(4) RoTCE and TBV are non-GAAP financial measures. For information on RoTCE and TBV, see "Capital Resources—Tangible Common Equity, Book Value Per Share, Tangible Book Value Per Share and Returns on Equity" below.

(5) Citi's risk-based capital and leverage ratios for 2017 are non-GAAP financial measures, which reflect full implementation of regulatory capital adjustments and deductions prior to the effective date of January 1, 2018.

(6) Citi's reportable Common Equity Tier 1 Capital and Tier 1 Capital ratios were derived under the Basel III Standardized Approach, and the reportable Total Capital ratio was the lower derived under the Basel III Advanced Approaches framework as of December 31, 2021 and December 31, 2019 to 2017. Citi's reportable Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios were the lower derived under the Basel III Advanced Approaches framework as of December 31, 2020.

(7) Dividends declared per common share as a percentage of net income per diluted share.

(8) Total common dividends declared plus common share repurchases as a percentage of net income available to common shareholders (*Net income*, less preferred dividends). See "Consolidated Statement of Changes in Stockholders' Equity," Note 10 to the Consolidated Financial Statements and "Equity Security Repurchases" below for the component details.

NM Not meaningful

SEGMENT AND BUSINESS–INCOME (LOSS) AND REVENUES

CITIGROUP INCOME

In millions of dollars	**2021**	2020	2019	**% Change 2021 vs. 2020**	% Change 2020 vs. 2019
Income (loss) from continuing operations					
Institutional Clients Group					
North America	**$ 5,781**	$ 3,310	$ 3,407	**75%**	(3)%
EMEA	**4,347**	3,280	3,836	**33**	(14)
Latin America	**2,429**	1,390	2,101	**75**	(34)
Asia	**3,206**	3,573	3,432	**(10)**	4
Total	**$15,763**	$11,553	$ 12,776	**36%**	(10)%
Global Consumer Banking					
North America	**$ 5,934**	$ (46)	$ 3,157	**NM**	NM
Latin America	**798**	241	885	**NM**	(73)%
Asia[1]	**(686)**	468	1,537	**NM**	(70)
Total	**$ 6,046**	$ 663	$ 5,579	**NM**	(88)%
Corporate/Other	**209**	(1,109)	1,116	**NM**	NM
Income from continuing operations	**$22,018**	$11,107	$ 19,471	**98%**	(43)%
Discontinued operations	**$ 7**	$ (20)	$ (4)	**NM**	NM
Less: Net income attributable to noncontrolling interests	**73**	40	66	**83%**	(39)%
Citigroup's net income	**$21,952**	$11,047	$ 19,401	**99%**	(43)%

(1) *Asia GCB* includes the results of operations of *GCB* activities in certain *EMEA* countries.
NM Not meaningful

CITIGROUP REVENUES

In millions of dollars	**2021**	2020	2019	**% Change 2021 vs. 2020**	% Change 2020 vs. 2019
Institutional Clients Group					
North America	**$ 16,748**	$ 17,476	$ 13,603	**(4)%**	28%
EMEA	**13,094**	13,041	12,157	**—**	7
Latin America	**4,946**	4,981	5,275	**(1)**	(6)
Asia	**9,099**	9,590	8,789	**(5)**	9
Total	**$ 43,887**	$ 45,088	$ 39,824	**(3)%**	13%
Global Consumer Banking					
North America	**$ 17,481**	$ 19,284	$ 20,460	**(9)%**	(6)
Latin America	**4,250**	4,466	5,334	**(5)**	(16)
Asia[1]	**5,599**	6,592	7,427	**(15)**	(11)
Total	**$ 27,330**	$ 30,342	$ 33,221	**(10)%**	(9)%
Corporate/Other	**667**	71	2,022	**NM**	(96)
Total Citigroup net revenues	**$ 71,884**	$ 75,501	$ 75,067	**(5)%**	1%

(1) *Asia GCB* includes the results of operations of *GCB* activities in certain *EMEA* countries.
NM Not meaningful

SEGMENT BALANCE SHEET[1]–DECEMBER 31, 2021

In millions of dollars	Institutional Clients Group	Global Consumer Banking	Corporate/Other and consolidating eliminations[2]	Citigroup parent company-issued long-term debt and stockholders' equity[3]	Total Citigroup consolidated
Assets					
Cash and deposits with banks, net of allowance	$ 90,714	$ 7,953	$ 163,366	$ —	$ 262,033
Securities borrowed and purchased under agreements to resell, net of allowance	326,937	118	233	—	327,288
Trading account assets	318,495	1,186	12,264	—	331,945
Investments, net of allowance	132,357	1,218	379,247	—	512,822
Loans, net of unearned income and allowance for credit losses on loans	393,681	253,721	3,910	—	651,312
Other assets, net of allowance	112,901	51,480	41,632	—	206,013
Net inter-segment liquid assets[4]	386,448	116,728	(503,176)	—	—
Total assets	$1,761,533	$432,404	$ 97,476	$ —	$2,291,413
Liabilities and equity					
Total deposits	$ 949,522	$361,808	$ 5,900	$ —	$1,317,230
Securities loaned and sold under agreements to repurchase	188,784	2,498	3	—	191,285
Trading account liabilities	160,353	763	413	—	161,529
Short-term borrowings	27,309	109	555	—	27,973
Long-term debt[3]	89,720	482	(773)	164,945	254,374
Other liabilities, net of allowance	88,443	32,325	15,582	—	136,350
Net inter-segment funding (lending)[3]	257,402	34,419	75,096	(366,917)	—
Total liabilities	$1,761,533	$432,404	$ 96,776	$ (201,972)	$2,088,741
Total stockholders' equity[5]	—	—	700	201,972	202,672
Total liabilities and equity	$1,761,533	$432,404	$ 97,476	$ —	$2,291,413

(1) The supplemental information presented in the table above reflects Citigroup's consolidated GAAP balance sheet by reporting segment. The respective segment information depicts the assets and liabilities managed by each segment.
(2) Consolidating eliminations for total Citigroup and Citigroup parent company assets and liabilities are recorded within *Corporate/Other*.
(3) Total stockholders' equity and the majority of long-term debt of Citigroup are reflected on the Citigroup parent company balance sheet. Citigroup allocates stockholders' equity and long-term debt to its businesses through inter-segment allocations as shown above.
(4) Represents the attribution of Citigroup's liquid assets (primarily consisting of cash, marketable equity securities and available-for-sale debt securities) to the various businesses based on Liquidity Coverage Ratio (LCR) assumptions.
(5) *Corporate/Other* equity represents noncontrolling interests.

INSTITUTIONAL CLIENTS GROUP

As of December 31, 2021, *Institutional Clients Group (ICG)* included *Banking* and *Markets and securities services* (for additional information on these businesses, see "Citigroup Segments" above). *ICG* provided 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* transacted with clients in both cash instruments and derivatives, including fixed income, foreign currency, equity and commodity products.

For information on Citi's planned revision to its reporting structure, including the reporting of the private bank as part of a new reporting segment, *Personal Banking and Wealth Management*, see "Strategic Refresh—Market Exits and Planned Revision to Reporting Structure" above.

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 *Administration and other fiduciary fees*. For additional information on these various types of revenues, see Note 5 to the Consolidated Financial Statements.

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*. Mark-to-market gains and losses on certain credit derivatives (used to hedge the corporate loan portfolio) are also recorded in *Principal transactions* (for additional information on *Principal transactions* revenue, see Note 6 to the Consolidated Financial Statements). *Other* primarily includes realized gains and losses on available-for-sale (AFS) debt securities, gains and losses on equity securities not held in trading accounts and other non-recurring gains and losses. Interest income earned on assets held, less interest paid on long- and short-term debt and to customers on deposits, is recorded as *Net interest income*.

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

ICG's management of the *Markets* businesses involves daily monitoring and evaluation of the above factors at the trading desk as well as the country level.

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

ICG's international presence is supported by trading floors in approximately 80 countries and a proprietary network in 95 countries and jurisdictions. At December 31, 2021, *ICG* had $1.8 trillion in assets and $950 billion in deposits. Securities services and issuer services managed $24.0 trillion in assets under custody and administration at December 31, 2021, of which Citi provides both custody and administrative services to certain clients related to $1.9 trillion of such assets. Managed assets under trust were $3.8 trillion at December 31, 2021. For additional information on these operations, see "Administration and Other Fiduciary Fees" in Note 5 to the Consolidated Financial Statements.

In millions of dollars, except as otherwise noted	**2021**	2020	2019	**% Change 2021 vs. 2020**	% Change 2020 vs. 2019
Commissions and fees	**$ 4,750**	$ 4,412	$ 4,462	**8%**	(1)%
Administration and other fiduciary fees	**3,351**	2,877	2,756	**16**	4
Investment banking	**6,741**	5,009	4,440	**35**	13
Principal transactions	**10,064**	13,308	8,562	**(24)**	55
Other[1]	**1,384**	1,149	1,829	**20**	(37)
Total non-interest revenue	**$26,290**	$26,755	$22,049	**(2)%**	21%
Net interest income (including dividends)	**17,597**	18,333	17,775	**(4)**	3
Total revenues, net of interest expense	**$43,887**	$45,088	$39,824	**(3)%**	13%
Total operating expenses[2]	**$26,513**	$24,617	$22,961	**8%**	7%
Net credit losses on loans	**$ 396**	$ 987	$ 394	**(60)%**	NM
Credit reserve build (release) for loans	**(2,533)**	3,172	71	**NM**	NM
Provision for credit losses on unfunded lending commitments	**(777)**	1,435	98	**NM**	NM
Provisions for credit losses on HTM debt securities and other assets	**1**	21	—	**(95)**	100%
Provisions for credit losses	**$ (2,913)**	$ 5,615	$ 563	**NM**	NM
Income from continuing operations before taxes	**$20,287**	$14,856	$16,300	**37%**	(9)%
Income taxes	**4,524**	3,303	3,524	**37**	(6)
Income from continuing operations	**$15,763**	$11,553	$12,776	**36%**	(10)%
Noncontrolling interests	**83**	50	40	**66**	25
Net income	**$15,680**	$11,503	$12,736	**36%**	(10)%
Balance Sheet data and ratios					
EOP assets *(in billions of dollars)*	**$ 1,762**	$ 1,730	$ 1,447	**2%**	20%
Average assets *(in billions of dollars)*	**1,812**	1,706	1,493	**6**	14
Return on average assets	**0.87%**	0.67%	0.85%		
Efficiency ratio	**60**	55	58		
Revenues by region					
North America	**$16,748**	$17,476	$13,603	**(4)%**	28%
EMEA	**13,094**	13,041	12,157	**—**	7
Latin America	**4,946**	4,981	5,275	**(1)**	(6)
Asia	**9,099**	9,590	8,789	**(5)**	9
Total	**$43,887**	$45,088	$39,824	**(3)%**	13%
Income from continuing operations by region					
North America	**$ 5,781**	$ 3,310	$ 3,407	**75%**	(3)%
EMEA	**4,347**	3,280	3,836	**33**	(14)
Latin America	**2,429**	1,390	2,101	**75**	(34)
Asia	**3,206**	3,573	3,432	**(10)**	4
Total	**$15,763**	$11,553	$12,776	**36%**	(10)%
Average loans by region *(in billions of dollars)*					
North America	**$ 202**	$ 201	$ 188	**—%**	7%
EMEA	**89**	88	87	**1**	1
Latin America	**32**	39	40	**(18)**	(3)
Asia	**73**	71	73	**3**	(3)
Total	**$ 396**	$ 399	$ 388	**(1)%**	3%
EOP deposits by business *(in billions of dollars)*					
Treasury and trade solutions	**$ 636**	$ 651	$ 536	**(2)%**	21%
All other *ICG* businesses	**314**	273	232	**15**	18
Total	**$ 950**	$ 924	$ 768	**3%**	20%

(1) 2019 includes an approximate $350 million gain on Citi's investment in Tradeweb.
(2) 2020 includes an approximate $390 million operational loss related to certain legal matters.
NM Not meaningful

ICG Revenue Details

In millions of dollars	2021	2020	2019	% Change 2021 vs. 2020	% Change 2020 vs. 2019
Investment banking revenue details					
Advisory	**$ 1,796**	$ 1,010	$ 1,259	**78%**	(20)%
Equity underwriting	**2,434**	1,593	973	**53**	64
Debt underwriting	**3,283**	3,184	2,984	**3**	7
Total investment banking	**$ 7,513**	$ 5,787	$ 5,216	**30%**	11%
Treasury and trade solutions	**9,444**	9,824	10,513	**(4)**	(7)
Corporate lending—excluding gains (losses) on loan hedges[1]	**2,291**	2,310	2,985	**(1)**	(23)
Private bank—excluding gains (losses) on loan hedges[1]	**4,005**	3,794	3,487	**6**	9
Total *Banking* revenues (ex-gains (losses) on loan hedges)[1]	**$ 23,253**	$ 21,715	$ 22,201	**7%**	(2)%
Losses on loan hedges[1]	**$ (144)**	$ (51)	$ (432)	**NM**	88%
Total *Banking* revenues (including gains (losses) on loan hedges), net of interest expense	**$ 23,109**	$ 21,664	$ 21,769	**7%**	—%
Fixed income markets[2]	**$ 13,720**	$ 17,588	$ 13,074	**(22)%**	35%
Equity markets	**4,545**	3,624	2,908	**25**	25
Securities services	**2,720**	2,562	2,642	**6**	(3)
Other	**(207)**	(352)	(569)	**41**	38
Total *Markets and securities services* revenues, net of interest expense	**$ 20,778**	$ 23,424	$ 18,055	**(11)%**	30%
Total revenues, net of interest expense	**$ 43,887**	$ 45,088	$ 39,824	**(3)%**	13%
Commissions and fees	**$ 793**	$ 677	$ 782	**17%**	(13)%
Principal transactions[3]	**7,692**	11,518	7,661	**(33)**	50
Other[2]	**831**	579	1,117	**44**	(48)
Total non-interest revenue	**$ 9,316**	$ 12,774	$ 9,560	**(27)%**	34%
Net interest income	**4,404**	4,814	3,514	**(9)**	37
Total fixed income markets[4]	**$ 13,720**	$ 17,588	$ 13,074	**(22)%**	35%
Rates and currencies	**$ 8,903**	$ 12,162	$ 9,242	**(27)%**	32%
Spread products/other fixed income	**4,817**	5,426	3,832	**(11)**	42
Total fixed income markets	**$ 13,720**	$ 17,588	$ 13,074	**(22)%**	35%
Commissions and fees	**$ 1,231**	$ 1,245	$ 1,121	**(1)%**	11%
Principal transactions[3]	**1,986**	1,281	775	**55**	65
Other	**191**	322	172	**(41)**	87
Total non-interest revenue	**$ 3,408**	$ 2,848	$ 2,068	**20%**	38%
Net interest income	**1,137**	776	840	**47**	(8)
Total equity markets[4]	**$ 4,545**	$ 3,624	$ 2,908	**25%**	25%

(1) Credit derivatives are used to economically hedge a portion of the private bank and corporate loan portfolio that includes both accrual loans and loans at fair value. Gains (losses) on loan hedges include the mark-to-market on the credit derivatives and the mark-to-market on the loans in the portfolio that are at fair value. The fixed premium costs of these hedges are netted against the private bank and corporate lending revenues to reflect the cost of credit protection. Gains (losses) on loan hedges include $(131) million and $(74) million related to the corporate loan portfolio and $(13) million and $23 million related to the private bank for the years ended December 31, 2021 and 2020, respectively. All of gains (losses) on loan hedges are related to the corporate loan portfolio for the year ended December 31, 2019. Citigroup's results of operations excluding the impact of gains (losses) on loan hedges are non-GAAP financial measures.

(2) 2019 includes an approximate $350 million gain on Citi's investment in Tradeweb.

(3) Excludes principal transactions revenues of *ICG* businesses other than *Markets*, primarily treasury and trade solutions and the private bank.

(4) Citi assesses its *Markets* business performance on a total revenue basis, as offsets may occur across revenue line items. For example, securities that generate *Net interest income* may be risk managed by derivatives that are recorded in *Principal transactions* revenue. For a description of the composition of these revenue line items, see Notes 4, 5 and 6 to the Consolidated Financial Statements.

NM Not meaningful

The discussion of the results of operations for ICG below excludes (where noted) the impact of gains (losses) on hedges of accrual loans, which are non-GAAP financial measures. For a reconciliation of these metrics to the reported results, see the table above.

2021 vs. 2020

Net income of $15.7 billion increased 36% versus the prior year, primarily driven by lower cost of credit, partially offset by higher expenses and lower revenues.

Revenues decreased 3%, reflecting lower *Markets and securities services* revenues, partially offset by higher *Banking* revenues. *Banking* revenues were up 7% (both including and excluding the impact of losses on loan hedges), driven by higher revenues in investment banking and the private bank, partially offset by lower revenues in treasury and trade solutions and corporate lending. *Markets and securities services* revenues were down 11%, primarily reflecting a normalization in fixed income markets revenues, partially offset by growth in equity markets and securities services.

Citi expects that revenues in its markets and investment banking businesses will continue to reflect the overall market environment during 2022.

Within *Banking:*

- *Investment banking* revenues were up 30%, reflecting growth in the overall market wallet. Advisory revenues increased 78%, reflecting strength in *North America* and *EMEA*, driven by growth in the market wallet as well as wallet share gains. Equity underwriting revenues increased 53%, reflecting strength in *North America* and *EMEA*, driven by growth in the market wallet, as well as wallet share gains. Debt underwriting revenues increased 3%, reflecting strength in *EMEA*, as growth in the market wallet was partially offset by a decline in wallet share.
- *Treasury and trade solutions* revenues decreased 4% (both including and excluding the impact of FX translation), reflecting a decline in revenues in the cash business, partially offset by an increase in trade revenues. Cash revenues decreased, driven by the ongoing impact of lower deposit spreads. The decrease was partially offset by strong growth in fee revenues reflecting solid client engagement and growth in transaction volumes, including growth in USD clearing, commercial cards and cross-border solutions. The increase in trade revenues was driven by improved trade spreads and growth in loans, reflecting an increase in trade flows and originations, primarily in *Asia* and *EMEA*. Average trade loans increased 5% (both including and excluding the impact of FX translation).
- *Corporate lending* revenues decreased 3%, including the impact of losses on loan hedges. Excluding the impact of losses on loan hedges, revenues decreased 1%, as lower cost of funds was more than offset by lower loan volumes, reflecting muted demand given strong client liquidity positions. Average loans decreased 20% during the current year.
- *Private bank* revenues increased 5%. Excluding the impact of gains (losses) on loan hedges, revenues increased 6%, driven by strong performance in *North America* and *EMEA*. The higher revenues reflected continued momentum with new and existing clients, resulting in higher loan volumes and spreads, higher managed investments revenues and higher deposit volumes. The increase in revenues was partially offset by lower deposit spreads due to the ongoing low interest rate environment and lower capital markets revenue.

Within *Markets and securities services:*

- *Fixed income markets* revenues decreased 22%, reflecting lower revenues across all regions, largely driven by a comparison to a strong prior year, as well as a normalization in market activity, particularly in rates and currencies, and spread products. Non-interest revenues decreased, reflecting lower investor client activity across rates and currencies and spread products. Net interest income also decreased, largely reflecting a change in the mix of trading positions.

  Rates and currencies revenues decreased 27%, driven by the normalization in market activity, and a comparison to a strong prior year that included elevated levels of volatility related to the pandemic. Spread products and other fixed income revenues decreased 11%, driven by a comparison to a strong prior year and the normalization in market activity, particularly in flow trading and structured products, reflecting lower volatility and spreads, partially offset by strong securitization activity.
- *Equity markets* revenues increased 25%, driven by growth across all products. Equity derivatives revenues increased reflecting higher client activity, particularly in *EMEA* and *North America*. Prime finance revenues increased due to favorable market conditions as well as growth in client balances. Cash equities revenues increased modestly, reflecting higher client activity. Non-interest revenues increased, primarily due to higher principal transactions revenues, reflecting higher client activity.
- *Securities services* revenues increased 6%. Excluding the impact of FX translation, revenues increased 7%, as an increase in fee revenues with both new and existing clients, driven by growth in assets under custody and settlement volumes, was partially offset by lower deposit spreads.

Expenses were up 8%, primarily driven by continued investments in Citi's transformation, business-led investments and higher incentive compensation, as well as transactional related expenses, partially offset by productivity savings.

Provisions reflected a benefit of $2.9 billion compared to costs of $5.6 billion in the prior year, driven by an ACL release and lower net credit losses.

Net credit losses declined to $396 million from $987 million in the prior year, driven by improvements in portfolio credit quality.

The ACL release was $3.3 billion compared to a build of $4.6 billion in the prior year. The release was primarily driven by improvements in portfolio credit quality as well as Citi's improved macroeconomic outlook. For additional information on Citi's ACL, see "Significant Accounting Policies and Significant Estimates" below.

For additional information on trends in *ICG*'s deposits and loans, see "Managing Global Risk—Liquidity Risk—Loans" and "—Deposits" below.

For additional information on *ICG*'s corporate credit portfolio, see "Managing Global Risk—Credit Risk—Corporate Credit" below.

For additional information about trends, uncertainties and risks related to *ICG*'s future results, see "Managing Global Risk—Other Risks—Country Risk—Argentina" and "Risk Factors" below.

GLOBAL CONSUMER BANKING

As of December 31, 2021, *Global Consumer Banking (GCB)* consisted of consumer banking businesses in *North America*, *Latin America* (consisting of Citi's consumer banking business in Mexico) and *Asia*. *GCB* provided traditional banking services to retail customers through retail banking, branded cards and, in the U.S., retail services (for information on consumer market exits related to *Latin America GCB* and *Asia GCB* as well as Citi's planned revision to its reporting structure, see "Strategic Refresh—Market Exits and Planned Revision to Reporting Structure" above).

GCB's markets in the U.S., Mexico and *Asia* had a combined 2,154 branches in 19 countries and jurisdictions as of December 31, 2021. At December 31, 2021, *GCB* had $267 billion in loans and $362 billion in retail banking deposits (excluding approximately $10 billion of loans and $8 billion of deposits reclassified to held-for-sale as a result of Citi's agreements to sell its consumer banking businesses in Australia and the Philippines).

In millions of dollars, except as otherwise noted	**2021**	2020	2019	**% Change 2021 vs. 2020**	% Change 2020 vs. 2019
Net interest income	**$24,238**	$26,551	$28,455	**(9)%**	(7)%
Non-interest revenue	**3,092**	3,791	4,766	**(18)**	(20)
Total revenues, net of interest expense	**$27,330**	$30,342	$33,221	**(10)%**	(9)%
Total operating expenses	**$20,035**	$17,834	$18,039	**12%**	(1)%
Net credit losses on loans	**$ 4,582**	$ 6,646	$ 7,382	**(31)%**	(10)%
Credit reserve build (release) for loans	**(5,174)**	4,951	439	**NM**	NM
Provision for credit losses on unfunded lending commitments	**—**	—	1	**—**	100
Provisions for benefits and claims, and other assets	**96**	105	73	**(9)**	44
Provisions for credit losses and for benefits and claims (PBC)	**$ (496)**	$11,702	$ 7,895	**NM**	48%
Income from continuing operations before taxes	**$ 7,791**	$ 806	$ 7,287	**NM**	(89)%
Income taxes	**1,745**	143	1,708	**NM**	(92)
Income from continuing operations	**$ 6,046**	$ 663	$ 5,579	**NM**	(88)%
Noncontrolling interests	**(11)**	(4)	6	**NM**	NM
Net income	**$ 6,057**	$ 667	$ 5,573	**NM**	(88)%
Balance Sheet data and ratios					
EOP assets *(in billions of dollars)*	**$ 432**	$ 434	$ 407	**—%**	7%
Average assets *(in billions of dollars)*	**440**	426	389	**3**	10
Return on average assets	**1.38%**	0.16%	1.43%		
Efficiency ratio	**73**	59	54		
Average retail banking deposits *(in billions of dollars)*	**$ 352**	$ 311	$ 277	**13**	12
Net credit losses as a percentage of average loans	**1.72%**	2.39%	2.60%		
Revenue by business					
Retail banking	**$10,776**	$11,996	$12,758	**(10)%**	(6)%
Cards[1]	**16,554**	18,346	20,463	**(10)**	(10)
Total	**$27,330**	$30,342	$33,221	**(10)%**	(9)%
Income from continuing operations by business					
Retail banking	**$ (830)**	$ 557	$ 1,741	**NM**	(68)%
Cards[1]	**6,876**	106	3,838	**NM**	(97)
Total	**$ 6,046**	$ 663	$ 5,579	**NM**	(88)%

Table continues on the next page, including footnotes.

Foreign currency (FX) translation impact					
Total revenue—as reported	**$27,330**	$30,342	$33,221	**(10)%**	(9)%
Impact of FX translation[2]	**—**	323	(157)		
Total revenues—ex-FX[3]	**$27,330**	$30,665	$33,064	**(11)%**	(7)%
Total operating expenses—as reported	**$20,035**	$17,834	$18,039	**12%**	(1)%
Impact of FX translation[2]	**—**	212	(80)		
Total operating expenses—ex-FX[3]	**$20,035**	$18,046	$17,959	**11%**	—%
Total provisions for credit losses and PBC—as reported	**$ (496)**	$11,702	$ 7,895	**NM**	48%
Impact of FX translation[2]	**—**	87	(51)		
Total provisions for credit losses and PBC—ex-FX[3]	**$ (496)**	$11,789	$ 7,844	**NM**	50%
Net income—as reported	**$ 6,057**	$ 667	$ 5,573	**NM**	(88)%
Impact of FX translation[2]	**—**	12	(11)		
Net income—ex-FX[3]	**$ 6,057**	$ 679	$ 5,562	**NM**	(88)%

(1) Includes both branded cards and retail services.
(2) Reflects the impact of FX translation into U.S. dollars at the 2021 average exchange rates for all periods presented.
(3) Presentation of this metric excluding FX translation is a non-GAAP financial measure.
NM Not meaningful

NORTH AMERICA GCB

As of December 31, 2021, *North America GCB* provided traditional retail banking and branded and retail services card products to retail and small business customers in the U.S. *North America GCB*'s U.S. cards product portfolio included its proprietary portfolio (Double Cash, Custom Cash, ThankYou and Value cards) and co-branded cards (including, among others, American Airlines and Costco) within branded cards, as well as its co-brand and private label relationships (including, among others, The Home Depot, Sears, Best Buy and Macy's) within retail services. For information on Citi's planned revision to its reporting structure, including the reporting of *North America GCB*'s consumer banking businesses as part of a new reporting segment, *Personal Banking and Wealth Management*, see "Strategic Refresh—Market Exits and Planned Revision to Reporting Structure" above.

At December 31, 2021, *North America GCB* had 658 retail bank branches concentrated in the six key metropolitan areas of New York, Chicago, Miami, Washington, D.C., Los Angeles and San Francisco. Also, as of December 31, 2021, *North America GCB* had $48.1 billion in retail banking loans and $219.3 billion in retail banking deposits. In addition, *North America GCB* had $133.9 billion in outstanding card loan balances.

In millions of dollars, except as otherwise noted	**2021**	2020	2019	**% Change 2021 vs. 2020**	% Change 2020 vs. 2019
Net interest income	**$17,393**	$18,938	$19,931	**(8)%**	(5)%
Non-interest revenue	**88**	346	529	**(75)**	(35)
Total revenues, net of interest expense	**$17,481**	$19,284	$20,460	**(9)%**	(6)%
Total operating expenses	**$10,832**	$10,237	$10,305	**6%**	(1)%
Net credit losses on loans	**$ 2,937**	$ 4,990	$ 5,583	**(41)%**	(11)%
Credit reserve build for loans	**(3,974)**	4,115	469	**NM**	NM
Provision for credit losses on unfunded lending commitments	**—**	—	1	**—**	100
Provisions for benefits and claims, and other assets	**19**	17	19	**12**	(11)
Provisions for credit losses and for benefits and claims	**$ (1,018)**	$ 9,122	$ 6,072	**NM**	50%
Income from continuing operations before taxes	**$ 7,667**	$ (75)	$ 4,083	**NM**	NM
Income taxes	**1,733**	(29)	926	**NM**	NM
Income from continuing operations	**$ 5,934**	$ (46)	$ 3,157	**NM**	NM
Noncontrolling interests	**—**	—	—	**—%**	—%
Net income	**$ 5,934**	$ (46)	$ 3,157	**NM**	NM
Balance Sheet data and ratios					
Average assets *(in billions of dollars)*	**$ 266**	$ 266	$ 232	**—%**	15%
Return on average assets	**2.23%**	(0.02)%	1.36%		
Efficiency ratio	**62**	53	50		
Average retail banking deposits *(in billions of dollars)*	**$ 206**	$ 176	$ 153	**17**	15
Net credit losses as a percentage of average loans	**1.69%**	2.72%	2.97%		
Revenue by business					
Retail banking	**$ 4,211**	$ 4,519	$ 4,558	**(7)%**	(1)%
Branded cards	**8,189**	8,800	9,184	**(7)**	(4)
Retail services	**5,081**	5,965	6,718	**(15)**	(11)
Total	**$17,481**	$19,284	$20,460	**(9)%**	(6)%
Income (loss) from continuing operations by business					
Retail banking	**$ (453)**	$ (232)	$ 145	**(95)%**	NM
Branded cards	**3,903**	12	1,734	**NM**	(99)%
Retail services	**2,484**	174	1,278	**NM**	(86)
Total	**$ 5,934**	$ (46)	$ 3,157	**NM**	NM

NM Not meaningful

2021 vs. 2020

Net income was $5.9 billion, compared to a net loss of $46 million in the prior year, reflecting significantly lower cost of credit, partially offset by lower revenues and higher expenses.

Revenues decreased 9%, reflecting lower revenues in retail banking, branded cards and retail services.

Retail banking revenues decreased 7%, as the benefit of strong deposit growth and growth in assets under management (increase of 8%, reflecting favorable market conditions and strong client engagement) was more than offset by lower deposit spreads, as well as lower mortgage revenues. Average deposits increased 17%, driven by higher levels of consumer liquidity due to government stimulus, as well as continued strategic efforts to drive organic growth.

Cards revenues decreased 10%. Branded cards revenues decreased 7%, primarily driven by continued higher payment rates, reflecting increased customer liquidity from government stimulus and relief programs, partially offset by higher spending-related revenues. Credit card spend volume increased 21%, reflecting a continued recovery in sales activity from the pandemic-driven low levels in the prior year.

Retail services revenues decreased 15%, primarily driven by lower average loans (down 7%), reflecting higher payment rates from the increased customer liquidity from government stimulus and relief programs, as well as higher partner payments, reflecting higher income sharing as a result of lower net credit losses. For additional information on partner payments, see Note 5 to the Consolidated Financial Statements. Credit card spend volume increased 18%, reflecting a continued recovery in sales activity from the pandemic-driven low levels in the prior year.

Expenses increased 6%, primarily driven by continued investments in Citi's transformation, as well as business-led investments and higher volume-related expenses, partially offset by productivity savings.

Provisions reflected a benefit of $1.0 billion, compared to costs of $9.1 billion in the prior year, primarily driven by a net ACL release compared to a net ACL build in the prior year, as well as lower net credit losses. Net credit losses decreased 41%, consisting of lower net credit losses in both branded cards (down 39% to $1.7 billion) and retail services (down 46% to $1.2 billion), primarily driven by lower loan volumes and improved delinquencies, primarily as a result of the higher payment rates.

The net ACL release was $4.0 billion, compared to a net build of $4.1 billion in the prior year, reflecting improvement in portfolio credit quality and the continued improvement in the macroeconomic outlook. For additional information on Citi's ACL, see "Significant Accounting Policies and Significant Estimates" below.

For additional information on *North America GCB*'s retail banking, and its branded cards and retail services portfolios, see "Credit Risk—Consumer Credit" below.

For additional information about trends, uncertainties and risks related to *North America GCB*'s future results, see "Executive Summary" above and "Risk Factors—Strategic Risks" below.

LATIN AMERICA GCB

As of December 31, 2021, *Latin America GCB* provided traditional retail banking and branded card products to consumer and small business customers in Mexico through Citibanamex.

As discussed above, Citi intends to exit its consumer, small business and middle-market banking operations in Mexico. For additional information, see Citi's Current Report on Form 8-K filed with the SEC on January 11, 2022. For information on Citi's planned revision to its reporting structure, including the reporting of the Mexico consumer, small business and middle-market banking operations as part of a new reporting segment, *Legacy Franchises*, see "Strategic Refresh—Market Exits and Planned Revision to Reporting Structure" above.

At December 31, 2021, *Latin America GCB* had 1,276 retail branches in Mexico, with $8.6 billion in retail banking loans and $24.8 billion in deposits. In addition, the business had $4.7 billion in outstanding card loan balances.

In millions of dollars, except as otherwise noted	**2021**	2020	2019	**% Change 2021 vs. 2020**	% Change 2020 vs. 2019
Net interest income	**$2,874**	$3,172	$3,735	**(9)%**	(15)%
Non-interest revenue	**1,376**	1,294	1,599	**6**	(19)
Total revenues, net of interest expense	**$4,250**	$4,466	$5,334	**(5)%**	(16)%
Total operating expenses	**$2,949**	$2,871	$3,001	**3%**	(4)%
Net credit losses on loans	**$ 920**	$ 866	$1,109	**6%**	(22)%
Credit reserve build (release) for loans	**(825)**	316	(38)	**NM**	NM
Provision for credit losses on unfunded lending commitments	**—**	—	—	**—**	—
Provisions for benefits and claims, and other assets	**80**	87	54	**(8)**	61
Provisions for credit losses and for benefits and claims (PBC)	**$ 175**	$1,269	$1,125	**(86)%**	13%
Income from continuing operations before taxes	**$1,126**	$ 326	$1,208	**NM**	(73)%
Income taxes	**328**	85	323	**NM**	(74)
Income from continuing operations	**$ 798**	$ 241	$ 885	**NM**	(73)%
Noncontrolling interests	**—**	—	—	**— %**	—
Net income	**$ 798**	$ 241	$ 885	**NM**	(73)%
Balance Sheet data and ratios					
Average assets *(in billions of dollars)*	**$ 35**	$ 32	$ 35	**9 %**	(9)%
Return on average assets	**2.28%**	0.75%	2.53%		
Efficiency ratio	**69**	64	56		
Average deposits *(in billions of dollars)*	**$ 24**	$ 23	$ 23	**4**	—
Net credit losses as a percentage of average loans	**6.87%**	5.97%	6.45%		
Revenue by business					
Retail banking	**$3,119**	$3,103	$3,681	**1%**	(16)%
Branded cards	**1,131**	1,363	1,653	**(17)**	(18)
Total	**$4,250**	$4,466	$5,334	**(5)%**	(16)%
Income from continuing operations by business					
Retail banking	**$ 435**	$ 120	$ 586	**NM**	(80)%
Branded cards	**363**	121	299	**NM**	(60)
Total	**$ 798**	$ 241	$ 885	**NM**	(73)%
FX translation impact					
Total revenues—as reported	**$4,250**	$4,466	$5,334	**(5)%**	(16)%
Impact of FX translation[1]	**—**	211	(246)		
Total revenues—ex-FX[2]	**$4,250**	$4,677	$5,088	**(9)%**	(8)%
Total operating expenses—as reported	**$2,949**	$2,871	$3,001	**3%**	(4)%
Impact of FX translation[1]	**—**	129	(132)		
Total operating expenses—ex-FX[2]	**$2,949**	$3,000	$2,869	**(2)%**	5%
Provisions for credit losses and PBC—as reported	**$ 175**	$1,269	$1,125	**(86)%**	13%
Impact of FX translation[1]	**—**	66	(58)		
Provisions for credit losses and PBC—ex-FX[2]	**$ 175**	$1,335	$1,067	**(87)%**	25%
Net income—as reported	**$ 798**	$ 241	$ 885	**NM**	(73)%
Impact of FX translation[1]	**—**	9	(37)		
Net income—ex-FX[2]	**$ 798**	$ 250	$ 848	**NM**	(71)%

(1) Reflects the impact of FX translation into U.S. dollars at the 2021 average exchange rates for all periods presented.
(2) Presentation of this metric excluding FX translation is a non-GAAP financial measure.
NM Not meaningful

The discussion of the results of operations for Latin America GCB below excludes the impact of FX translation for all periods presented. Presentations of the results of operations, excluding the impact of FX translation, are non-GAAP financial measures. For a reconciliation of certain of these metrics to the reported results, see the table above.

2021 vs. 2020

Net income was $798 million, compared to $250 million in the prior year, reflecting significantly lower cost of credit and modestly lower expenses, partially offset by lower revenues.

Revenues decreased 9%, reflecting lower cards and retail banking revenues, largely due to the continued impact of the pandemic.

Retail banking revenues decreased 4%, primarily driven by lower loan volumes and deposit spreads, partially offset by growth in assets under management. Average loans decreased 13%, reflecting the impact of the pandemic on customer activity. Assets under management increased 8%, reflecting favorable market conditions, as well as strong client engagement.

Cards revenues decreased 21%, primarily driven by lower average loans (down 11%), reflecting higher payment rates. Credit card spend volume increased 16%, reflecting a continued recovery in sales activity from the pandemic-driven low levels in the prior year.

Expenses decreased 2%, as productivity savings more than offset continued investments in Citi's transformation.

Provisions of $174 million decreased 87%, primarily driven by a net ACL release compared to a net ACL build in the prior year, partially offset by higher net credit losses resulting from pandemic-related charge-offs.

The net ACL release was $826 million, compared to a build of $329 million in the prior year. The release reflected an improvement in portfolio credit quality, as well as continued improvement in the macroeconomic outlook and lower loan volumes. For additional information on Citi's ACL, see "Significant Accounting Policies and Significant Estimates" below.

For additional information on *Latin America GCB*'s retail banking and its branded cards portfolios, see "Credit Risk—Consumer Credit" below.

For additional information about trends, uncertainties and risks related to *Latin America GCB*'s future results, see "Executive Summary" above and "Risk Factors—Strategic Risks" below.

ASIA GCB

As of December 31, 2021, *Asia GCB* provided traditional retail banking and branded card products to retail and small business customers. Included within *Asia GCB* were traditional retail banking and branded card products provided to retail customers in certain *EMEA* countries, primarily the UAE, Poland and Russia.

As discussed above, Citi is pursuing exits of its consumer franchises in 13 markets across *Asia* and *EMEA* and will focus its consumer banking franchise in the two regions on four wealth centers: Singapore, Hong Kong, the UAE and London. In 2021, Citi entered into agreements to sell its consumer banking businesses in Australia and the Philippines, and made a decision to wind down and close its Korea consumer banking business (for additional information, see Note 2 to the Consolidated Financial Statements).

In addition, in January 2022, Citi entered into agreements to sell its consumer banking businesses in Indonesia, Malaysia, Taiwan, Thailand and Vietnam. For information on Citi's planned revision to its reporting structure, including the reporting of the 13 exit markets as part of a new reporting segment, *Legacy Franchises*, see "Strategic Refresh—Market Exits and Planned Revision to Reporting Structure" above.

At December 31, 2021, on a combined basis, the businesses had 220 retail branches, $58.9 billion in retail banking loans and $117.7 billion in deposits. In addition, the businesses had $13.1 billion in outstanding card loan balances. These amounts exclude approximately $10 billion of loans ($7 billion of retail banking loans and $3 billion of credit card loan balances) and $8 billion of deposits reclassified to held-for-sale (HFS) as a result of Citi's agreements to sell its consumer banking businesses in Australia and the Philippines. Australia and the Philippines are the only consumer businesses reclassified as HFS at December 31, 2021. For additional information, see Note 2 to the Consolidated Financial Statements.

In millions of dollars, except as otherwise noted[1]	**2021**	2020	2019	**% Change 2021 vs. 2020**	% Change 2020 vs. 2019
Net interest income	**$ 3,971**	$4,441	$4,789	**(11)%**	(7)%
Non-interest revenue	**1,628**	2,151	2,638	**(24)**	(18)
Total revenues, net of interest expense	**$ 5,599**	$6,592	$7,427	**(15)%**	(11)%
Total operating expenses	**$ 6,254**	$4,726	$4,733	**32%**	—%
Net credit losses on loans	**$ 725**	$ 790	$ 690	**(8)%**	14%
Credit reserve build for loans	**(375)**	520	8	**NM**	NM
Provisions for other assets	**(3)**	1	—	**NM**	—
Provisions for credit losses	**$ 347**	$1,311	$ 698	**(74)%**	88%
Income (loss) from continuing operations before taxes	**$(1,002)**	$ 555	$1,996	**NM**	(72)%
Income taxes (benefits)	**(316)**	87	459	**NM**	(81)
Income (loss) from continuing operations	**$ (686)**	$ 468	$1,537	**NM**	(70)%
Noncontrolling interests	**(11)**	(4)	6	**NM**	NM
Net income (loss)	**$ (675)**	$ 472	$1,531	**NM**	(69)%
Balance Sheet data and ratios					
Average assets *(in billions of dollars)*	**$ 139**	$ 129	$ 122	**8%**	6%
Return on average assets	**(0.49)%**	0.37%	1.25%		
Efficiency ratio	**112**	72	64		
Average deposits *(in billions of dollars)*	**$ 122**	$ 113	$ 101	**8**	12
Net credit losses as a percentage of average loans	**0.92%**	0.99%	0.88%		
Revenue by business					
Retail banking	**$ 3,446**	$4,374	$4,519	**(21)%**	(3)%
Branded cards	**2,153**	2,218	2,908	**(3)**	(24)
Total	**$ 5,599**	$6,592	$7,427	**(15)%**	(11)%
Income (loss) from continuing operations by business					
Retail banking	**$ (812)**	$ 669	$1,010	**NM**	(34)%
Branded cards	**126**	(201)	527	**NM**	NM
Total	**$ (686)**	$ 468	$1,537	**NM**	(70)%

Table continues on the next page including footnotes.

FX translation impact					
Total revenues—as reported	**$ 5,599**	$6,592	$7,427	**(15)%**	(11)%
Impact of FX translation[2]	**—**	112	89		
Total revenues—ex-FX[3]	**$ 5,599**	$6,704	$7,516	**(16)%**	(11)%
Total operating expenses—as reported	**$ 6,254**	$4,726	$4,733	**32%**	—%
Impact of FX translation[2]	**—**	83	52		
Total operating expenses—ex-FX[3]	**$ 6,254**	$4,809	$4,785	**30%**	1%
Provisions for credit losses—as reported	**$ 347**	$1,311	$ 698	**(74)%**	88%
Impact of FX translation[2]	**—**	21	7		
Provisions for credit losses—ex-FX[3]	**$ 347**	$1,332	$ 705	**(74)%**	89%
Net income (loss)—as reported	**$ (675)**	$ 472	$1,531	**NM**	(69)%
Impact of FX translation[2]	**—**	3	26		
Net income (loss)—ex-FX[3]	**$ (675)**	$ 475	$1,557	**NM**	(69)%

(1) *Asia GCB* includes the results of operations of *GCB* activities in certain *EMEA* countries for all periods presented.
(2) Reflects the impact of FX translation into U.S. dollars at the 2021 average exchange rates for all periods presented.
(3) Presentation of this metric excluding FX translation is a non-GAAP financial measure.
NM Not meaningful

The discussion of the results of operations for Asia GCB below excludes the impact of FX translation for all periods presented. Presentations of the results of operations, excluding the impact of FX translation, are non-GAAP financial measures. For a reconciliation of certain of these metrics to the reported results, see the table above.

2021 vs. 2020

Net loss was $675 million, compared to net income of $475 million in the prior year. The net loss included the following items related to the 13 exit markets: (i) approximately $1.1 billion (approximately $0.8 billion after-tax) related to charges incurred from the voluntary early retirement program (VERP) in connection with the wind-down of the Korea consumer banking business; (ii) an approximate $0.7 billion pretax loss ($0.6 billion after-tax) related to the agreement to sell the Australia consumer banking business, largely reflecting the impact of a CTA loss (net of hedges); and (iii) contract modification costs related to the *Asia* divestitures of $119 million ($98 million after-tax).

Excluding the above items, *net income* was $807 million compared to net income of $475 million in the prior year, reflecting significantly lower cost of credit, partially offset by higher expenses and lower revenues.

Revenues decreased 16%, including the Australia loss on sale. Excluding the Australia loss on sale, revenues declined 6%, reflecting lower retail banking and cards revenues, largely due to the continued impact of the pandemic, including lower interest rates.

Retail banking revenues decreased 22%, including the Australia loss on sale. Excluding the Australia loss on sale, revenues decreased 7%, as growth in both investment revenues and deposits was more than offset by lower deposit spreads due to lower interest rates and lower FX and insurance revenues. Assets under management increased 3%, reflecting the impact of improved market conditions, as well as client engagement. Average deposits increased 6% and average loans decreased 2%. The decline in retail banking revenues was also impacted by a 3% decrease in retail lending revenues, reflecting a decline in personal loans driven by spread compression.

Cards revenues decreased 5%, as lower average loans (down 14%, including the reclassification to held-for-sale related to Australia and the Philippines and higher payment rates) were partially offset by higher spending-related revenues (credit card spend volume up 8%), reflecting a continued recovery in sales activity from the pandemic-driven low levels in the prior year.

Expenses increased 30%, including approximately $1.2 billion of costs related to the *Asia* divestitures. Excluding the costs related to the *Asia* divestitures, expenses increased 6%, primarily driven by continued investments in Citi's transformation, as well as business-led investments, partially offset by productivity savings.

Provisions decreased 74%, primarily driven by a net ACL release compared to a net ACL build in the prior year, as well as lower net credit losses. Net credit losses decreased 10%, primarily reflecting lower cards loan volumes and improved delinquencies.

The net ACL release was $376 million, compared to a build of $528 million in the prior year. The release reflected an improvement in portfolio credit quality. For additional information on Citi's ACL, see "Significant Accounting Policies and Significant Estimates" below.

For additional information on *Asia GCB*'s retail banking portfolios and its branded cards portfolios, see "Credit Risk—Consumer Credit" below.

For additional information about trends, uncertainties and risks related to *Asia GCB*'s future results, see "Executive Summary" above and "Risk Factors—Strategic Risks" and "Significant Accounting Policies and Significant Estimates" below.

CORPORATE/OTHER

Activities not assigned to the operating segments (*ICG* and *GCB*) are included in *Corporate/Other*. As of December 31, 2021, *Corporate/Other* included certain unallocated costs of global staff functions (including certain finance, risk, human resources, legal and compliance), other corporate expenses and unallocated global operations and technology expenses and income taxes, as well as results of Corporate Treasury, certain *North America* legacy consumer loan portfolios, discontinued operations and other legacy assets. For information on Citi's planned revision to its reporting structure, including the reporting of the *North America* legacy consumer loan portfolios, discontinued operations and other legacy assets as part of a new reporting segment, *Legacy Franchises*, see "Strategic Refresh—Market Exits and Planned Revision to Reporting Structure" above. At December 31, 2021, *Corporate/Other* had $97 billion in assets.

In millions of dollars	**2021**	2020	2019	**% Change 2021 vs. 2020**	% Change 2020 vs. 2019
Net interest income	**$ 659**	$ (133)	$1,898	**NM**	NM
Non-interest revenue	**8**	204	124	**(96)%**	65%
Total revenues, net of interest expense	**$ 667**	$ 71	$2,022	**NM**	(96)%
Total operating expenses	**$1,645**	$ 1,923	$1,783	**(14)%**	8%
Net credit losses (recoveries) on loans	**$ (83)**	$ (22)	$ (8)	**NM**	NM
Credit reserve build (release) for loans	**(291)**	188	(60)	**NM**	NM
Provision (release) for credit losses on unfunded lending commitments	**(11)**	11	(7)	**NM**	NM
Provisions (releases) for benefits and claims, HTM debt securities and other assets	**16**	1	—	**100%**	—%
Provisions (releases) for credit losses and for benefits and claims	**$ (369)**	$ 178	$ (75)	**NM**	NM
Income (loss) from continuing operations before taxes	**$ (609)**	$(2,030)	$ 314	**70%**	NM
Income taxes (benefits)	**(818)**	(921)	(802)	**11**	(15)%
Income (loss) from continuing operations	**$ 209**	$(1,109)	$1,116	**NM**	NM
(Loss) from discontinued operations, net of taxes	**7**	(20)	(4)	**NM**	NM
Net income (loss) before attribution of noncontrolling interests	**$ 216**	$(1,129)	$1,112	**NM**	NM
Noncontrolling interests	**1**	(6)	20	**NM**	NM
Net income (loss)	**$ 215**	$(1,123)	$1,092	**NM**	NM

NM Not meaningful

2021 vs. 2020

Net income was $215 million, compared to a net loss of $1.1 billion in the prior year, reflecting higher revenues, lower expenses and lower cost of credit.

Revenues of $667 million compared to $71 million in the prior year, primarily driven by higher net revenue from the investment portfolio.

Expenses decreased 14%, reflecting the absence of a civil money penalty in the prior year and the wind-down of legacy assets, partially offset by increases related to Citi's transformation.

Provisions reflected a net benefit of $369 million, compared to costs of $178 million in the prior year, primarily driven by a net ACL release in the current year ($286 million compared to a net build of $200 million in the prior year). The release reflected the continued improvement in the macroeconomic outlook.

For additional information on Citi's ACL, see "Significant Accounting Policies and Significant Estimates" below.

For additional information about trends, uncertainties and risks related to *Corporate/Other*'s future results, see "Executive Summary" above and "Risk Factors—Strategic Risks" below.

CAPITAL RESOURCES

Overview

Capital is used principally to support assets in Citi's businesses and to absorb credit, market and operational losses. Citi primarily generates capital through earnings from its operating businesses. Citi may augment its capital through issuances of common stock and noncumulative perpetual preferred stock, among other issuances. Further, Citi's capital levels may also be affected by changes in accounting and regulatory standards, as well as U.S. corporate tax laws and the impact of future events on Citi's business results, such as changes in interest and foreign exchange rates, as well as business and asset dispositions. For additional information on capital-related trends, uncertainties and risks related to Citi's legacy and exit businesses, including the impact of CTA losses, see "Executive Summary" above and "Risk Factors—Strategic Risks" and "—Operational Risks" below.

During 2021, Citi returned a total of $11.8 billion of capital to common shareholders in the form of $4.2 billion in dividends and $7.6 billion in share repurchases totaling approximately 105 million common shares.

Capital Management

Citi's capital management framework is designed to ensure that Citigroup and its principal subsidiaries maintain sufficient capital consistent with each entity's respective risk profile, management targets and all applicable regulatory standards and guidelines. Citi assesses its capital adequacy against a series of internal quantitative capital goals, designed to evaluate its capital levels in expected and stressed economic environments. Underlying these internal quantitative capital goals are strategic capital considerations, centered on preserving and building financial strength.

The Citigroup Capital Committee, with oversight from the Risk Management Committee of Citigroup's Board of Directors, has responsibility for Citi's aggregate capital structure, including the capital assessment and planning process, which is integrated into Citi's capital plan. Balance sheet management, including oversight of capital adequacy, for Citigroup's subsidiaries is governed by each entity's Asset and Liability Committee, where applicable.

For additional information regarding Citi's capital planning and stress testing exercises, see "Stress Testing Component of Capital Planning" below.

Current Regulatory Capital Standards

Citi is subject to regulatory capital standards issued by the Federal Reserve Board, which constitute the U.S. Basel III rules. These rules establish an integrated capital adequacy framework, encompassing both risk-based capital ratios and leverage ratios.

Risk-Based Capital Ratios

The U.S. Basel III rules set forth the composition of regulatory capital (including the application of regulatory capital adjustments and deductions), as well as two comprehensive methodologies (a Standardized Approach and Advanced Approaches) for measuring total risk-weighted assets.

Total risk-weighted assets under the Advanced Approaches, which are primarily models based, include credit, market and operational risk-weighted assets. The Standardized Approach generally applies prescribed supervisory risk weights to broad categories of credit risk exposures. As a result, credit risk-weighted assets calculated under the Advanced Approaches are more risk sensitive than those calculated under the Standardized Approach. Market risk-weighted assets are currently calculated on a generally consistent basis under both approaches. The Standardized Approach excludes operational risk-weighted assets.

Under the U.S. Basel III rules, both Citi and Citibank, N.A. (Citibank) are required to maintain stated minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios of 4.5%, 6.0% and 8.0%, respectively. Further, the U.S. Basel III rules implement the "capital floor provision" of the so-called "Collins Amendment" of the Dodd-Frank Act, which requires Advanced Approaches banking organizations to calculate each of the three risk-based capital ratios (Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital) under both the U.S. Basel III Standardized Approach and the Advanced Approaches and comply with the more binding of each of the resulting risk-based capital ratios.

Tier 1 Leverage Ratio

Under the U.S. Basel III rules, Citi is also required to maintain a minimum Tier 1 Leverage ratio of 4.0%. The Tier 1 Leverage ratio, a non-risk-based measure of capital adequacy, is defined as Tier 1 Capital as a percentage of quarterly adjusted average total assets less amounts deducted from Tier 1 Capital.

Supplementary Leverage Ratio

Citi is also required to calculate a Supplementary Leverage ratio, which differs from the Tier 1 Leverage ratio by also including certain off-balance sheet exposures within the denominator of the ratio (Total Leverage Exposure). The Supplementary Leverage ratio represents end-of-period Tier 1 Capital to Total Leverage Exposure, with the latter defined as the sum of the daily average of on-balance sheet assets for the quarter and the average of certain off-balance sheet exposures calculated as of the last day of each month in the quarter, less applicable Tier 1 Capital deductions. Advanced Approaches banking organizations are required to maintain a stated minimum Supplementary Leverage ratio of 3.0%.

Further, U.S. GSIBs, including Citi, are subject to enhanced Supplementary Leverage ratio standards. These enhanced standards establish a 2.0% leverage buffer in addition to the stated 3.0% minimum Supplementary Leverage ratio requirement, for a total effective minimum Supplementary Leverage ratio requirement of 5.0%. If a U.S. GSIB fails to exceed this requirement, it will be subject to increasingly onerous restrictions (depending upon the extent of the shortfall) regarding capital distributions and discretionary executive bonus payments.

Temporary Supplementary Leverage Ratio Relief

In April 2020, the Federal Reserve Board issued an interim final rule that temporarily changed the calculation of the Supplementary Leverage ratio for bank holding companies, including Citigroup, by excluding U.S. Treasuries and deposits at Federal Reserve Banks from Total Leverage Exposure.

The interim final rule was effective for Citigroup's Supplementary Leverage ratio, as well as for Citigroup's leverage-based total loss absorbing capacity (TLAC) and long-term debt (LTD) requirements, and expired as scheduled on March 31, 2021. Citigroup's reported Supplementary Leverage ratio of 7.0% during the fourth quarter of 2020 benefited 109 basis points, as a result of the temporary relief.

Regulatory Capital Treatment—Modified Transition of the Current Expected Credit Losses Methodology

In September 2020, the U.S. banking agencies issued a final rule (substantially unchanged from a March 2020 interim final rule) that modified the regulatory capital transition provision related to the current expected credit losses (CECL) methodology. The September 2020 final rule does not have any impact on U.S. GAAP accounting.

The final rule permitted banks to delay for two years the "Day One" adverse regulatory capital effects resulting from adoption of the CECL methodology on January 1, 2020 until January 1, 2022, followed by a three-year transition to phase out the regulatory capital benefit provided by the delay.

In addition, for the ongoing impact of CECL, the agencies utilized a 25% scaling factor as an approximation of the increased reserve build under CECL compared to the previous incurred loss model and, therefore, allowed banks to add back to Common Equity Tier 1 Capital an amount equal to 25% of the change in CECL-based allowances in each quarter between January 1, 2020 and December 31, 2021. Beginning January 1, 2022, the cumulative 25% change in CECL-based allowances between January 1, 2020 and December 31, 2021 will be phased in to regulatory capital (i) at 25% per year on January 1 of each year over the three-year transition period, and (ii) along with the delayed "Day One" impact.

Citigroup and Citibank elected the modified CECL transition provision provided by the rule beginning with the quarter ended March 31, 2020. Accordingly, the Day One regulatory capital effects resulting from adoption of the CECL methodology, as well as the ongoing adjustments for 25% of the change in CECL-based allowances in each quarter between January 1, 2020 and December 31, 2021, started to be phased in on January 1, 2022 and will be fully reflected in Citi's regulatory capital as of January 1, 2025.

As of December 31, 2021, Citigroup's reported Common Equity Tier 1 Capital ratio of 12.2% benefited from the deferrals of the CECL transition provision by 24 basis points (bps), which resulted in an approximate 6 bps decrease to Citigroup's Common Equity Tier 1 Capital ratio upon commencement of the phase-in on January 1, 2022. In addition, this phase-in is expected to result in an additional 6 bps decrease to Citigroup's Common Equity Tier 1 Capital ratio on January 1 of each year through January 1, 2025. For additional information on Citigroup's and Citibank's regulatory capital ratios excluding the impact of the CECL transition provision, see "Capital Resources (Full Adoption of CECL)" below.

TLAC Holdings

As previously disclosed, in January 2021, the U.S. banking agencies issued a final rule that created a new regulatory capital deduction applicable to Advanced Approaches banking organizations for certain investments in covered debt instruments issued by GSIBs. The final rule became effective for Citigroup and Citibank on April 1, 2021, and did not have a significant impact on either Citigroup's or Citibank's regulatory capital.

Regulatory Capital Buffers

Citi and Citibank are required to maintain several regulatory capital buffers above stated minimum capital requirements. These capital buffers would be available to absorb losses in advance of any potential impairment of regulatory capital below the stated minimum regulatory capital ratio requirements.

Banking organizations that fall below their regulatory capital buffers are subject to limitations on capital distributions and discretionary bonus payments to executive officers based on a percentage of "Eligible Retained Income" (ERI), with increasing restrictions based upon the severity of the breach. ERI is equal to the greater of (i) the bank's net income for the four calendar quarters preceding the current calendar quarter, net of any distributions and tax effects not already reflected in net income, and (ii) the average of the bank's net income for the four calendar quarters preceding the current calendar quarter.

As of December 31, 2021, Citi's regulatory capital ratios exceeded effective regulatory minimum requirements. Accordingly, Citi is not subject to payout limitations as a result of Basel III requirements.

Stress Capital Buffer

Citigroup is subject to the Federal Reserve Board's Stress Capital Buffer (SCB) rule, which integrates the annual stress testing requirements with ongoing regulatory capital requirements. The SCB equals the peak-to-trough Common Equity Tier 1 Capital ratio decline under the Supervisory Severely Adverse scenario used in the Comprehensive Capital Analysis and Review (CCAR) and Dodd-Frank Act Stress Testing (DFAST), plus four quarters of planned common stock dividends, subject to a floor of 2.5%. SCB-based minimum capital requirements will be reviewed and updated annually by the Federal Reserve Board as part of the CCAR process. For additional information regarding CCAR and DFAST, see "Stress Testing Component of Capital Planning" below. The fixed 2.5% Capital Conservation Buffer (for additional information, see below) will continue to apply under the Advanced Approaches.

In August 2021, the Federal Reserve Board finalized and announced Citi's SCB requirement of 3.0%. Accordingly, effective October 1, 2021, Citigroup is required to maintain a 10.5% effective minimum Common Equity Tier 1 Capital ratio under the Standardized Approach. Previously, from October 1, 2020 through September 30, 2021, Citi had been subject to a 2.5% SCB, and a 10.0% effective minimum Common Equity Tier 1 Capital ratio under the Standardized Approach.

Capital Conservation Buffer and Countercyclical Capital Buffer

Citigroup is subject to a fixed 2.5% Capital Conservation Buffer under the Advanced Approaches. Citibank is subject to the fixed 2.5% Capital Conservation Buffer under both the Advanced Approaches and the Standardized Approach.

In addition, Advanced Approaches banking organizations, such as Citigroup and Citibank, are subject to a discretionary Countercyclical Capital Buffer. The Federal Reserve Board last voted to affirm the Countercyclical Capital Buffer amount at the current level of 0% in December 2020.

GSIB Surcharge

The Federal Reserve Board imposes a risk-based capital surcharge upon U.S. bank holding companies that are identified as global systemically important bank holding companies (GSIBs), including Citi. The GSIB surcharge augments the SCB, Capital Conservation Buffer and, if invoked, any Countercyclical Capital Buffer.

A U.S. bank holding company that is designated a GSIB is required, on an annual basis, to calculate a surcharge using two methods and is subject to the higher of the resulting two surcharges. The first method ("method 1") is based on the Basel Committee's GSIB methodology. Under the second method ("method 2"), the substitutability category under the Basel Committee's GSIB methodology is replaced with a quantitative measure intended to assess a GSIB's reliance on short-term wholesale funding. In addition, method 1 incorporates relative measures of systemic importance across certain global banking organizations and a year-end spot foreign exchange rate, whereas method 2 uses fixed measures of systemic importance and application of an average foreign exchange rate over a three-year period. The GSIB surcharges calculated under both method 1 and method 2 are based on measures of systemic importance from the year immediately preceding that in which the GSIB surcharge calculations are being performed (e.g., the method 1 and method 2 GSIB surcharges calculated during 2021 will be based on 2020 systemic indicator data). Generally, Citi's surcharge determined under method 2 will result in a higher surcharge than its surcharge determined under method 1.

Should a GSIB's systemic importance increase for more than one year, such that it becomes subject to a higher GSIB surcharge, the higher surcharge would not become effective for a full year after the second consecutive higher score (e.g., a higher surcharge calculated using data as of December 31, 2020 and December 30, 2021 would not become effective until January 1, 2023). However, if after two consecutive years of a higher score, a GSIB's systemic importance changes such that the GSIB would be subject to a lower surcharge, the GSIB would be subject to the lower surcharge in the calendar year commencing one year later (e.g., a lower surcharge calculated using data as of December 31, 2022 would become effective January 1, 2024).

The following table sets forth Citi's effective GSIB surcharge as determined under method 1 and method 2 during 2021 and 2020:

	2021	2020
Method 1	**2.0%**	2.0%
Method 2	**3.0**	3.0

Citi's GSIB surcharge effective during both 2021 and 2020 was 3.0%, as derived under the higher method 2 result. Citi's GSIB surcharge effective for 2022 will remain unchanged at 3.0%, as derived under the higher method 2 result.

Citi expects that its method 2 GSIB surcharge will continue to remain higher than its method 1 GSIB surcharge. Accordingly, based on Citi's method 2 result as of December 31, 2020, and its estimated method 2 result as of December 31, 2021, Citi's GSIB surcharge is expected to increase to 3.5% effective January 1, 2023. Citi's GSIB surcharge effective for 2024 will likely be based on the lower of its method 2 scores for year-end 2021 and 2022, and therefore is not expected to exceed 3.5%.

Prompt Corrective Action Framework

In general, the Prompt Corrective Action (PCA) regulations direct the U.S. banking agencies to enforce increasingly strict limitations on the activities of insured depository institutions that fail to meet certain regulatory capital thresholds. The PCA framework contains five categories of capital adequacy as measured by risk-based capital and leverage ratios: (i) "well capitalized," (ii) "adequately capitalized," (iii) "undercapitalized," (iv) "significantly undercapitalized" and (v) "critically undercapitalized."

Accordingly, an insured depository institution, such as Citibank, must maintain minimum Common Equity Tier 1 Capital, Tier 1 Capital, Total Capital and Tier 1 Leverage ratios of 6.5%, 8.0%, 10.0% and 5.0%, respectively, to be considered "well capitalized." In addition, insured depository institution subsidiaries of U.S. GSIBs, including Citibank, must maintain a minimum

Supplementary Leverage ratio of 6.0% to be considered "well capitalized." Citibank was "well capitalized" as of December 31, 2021.

Furthermore, to be "well capitalized" under current federal bank regulatory agency definitions, a bank holding company must have a Tier 1 Capital ratio of at least 6.0%, a Total Capital ratio of at least 10.0% and not be subject to a Federal Reserve Board directive to maintain higher capital levels.

Stress Testing Component of Capital Planning

Citi is subject to an annual assessment by the Federal Reserve Board as to whether Citigroup has effective capital planning processes as well as sufficient regulatory capital to absorb losses during stressful economic and financial conditions, while also meeting obligations to creditors and counterparties and continuing to serve as a credit intermediary. This annual assessment includes two related programs: the Comprehensive Capital Analysis and Review (CCAR) and Dodd-Frank Act Stress Testing (DFAST).

For the largest and most complex firms, such as Citi, CCAR includes a qualitative evaluation of a firm's abilities to determine its capital needs on a forward-looking basis. In conducting the qualitative assessment, the Federal Reserve Board evaluates firms' capital planning practices, focusing on six areas of capital planning—namely, governance, risk management, internal controls, capital policies, incorporating stressful conditions and events, and estimating impact on capital positions. As part of the CCAR process, the Federal Reserve Board evaluates Citi's capital adequacy, capital adequacy process and its planned capital distributions, such as dividend payments and common share repurchases. The Federal Reserve Board assesses whether Citi has sufficient capital to continue operations throughout times of economic and financial market stress and whether Citi has robust, forward-looking capital planning processes that account for its unique risks.

All CCAR firms, including Citi, are subject to a rigorous evaluation of their capital planning process. Firms with weak practices may be subject to a deficient supervisory rating, and potentially an enforcement action, for failing to meet supervisory expectations. For additional information regarding CCAR, see "Risk Factors—Strategic Risks" below.

DFAST is a forward-looking quantitative evaluation of the impact of stressful economic and financial market conditions on Citi's regulatory capital. This program serves to inform the Federal Reserve Board and the general public as to how Citi's regulatory capital ratios might change using a hypothetical set of adverse economic conditions as designed by the Federal Reserve Board. In addition to the annual supervisory stress test conducted by the Federal Reserve Board, Citi is required to conduct annual company-run stress tests under the same adverse economic conditions designed by the Federal Reserve Board.

Both CCAR and DFAST include an estimate of projected revenues, losses, reserves, pro forma regulatory capital ratios, and any other additional capital measures deemed relevant by Citi. Projections are required over a nine-quarter planning horizon under two supervisory scenarios (baseline and severely adverse conditions). All risk-based capital ratios reflect application of the Standardized Approach framework under the U.S. Basel III rules.

In addition, Citibank is required to conduct the annual Dodd-Frank Act Stress Test. The annual stress test consists of a forward-looking quantitative evaluation of the impact of stressful economic and financial market conditions under several scenarios on Citibank's regulatory capital. This program serves to inform the Office of the Comptroller of the Currency as to how Citibank's regulatory capital ratios might change during a hypothetical set of adverse economic conditions and to ultimately evaluate the reliability of Citibank's capital planning process.

Citigroup and Citibank are required to disclose the results of their company-run stress tests.

Temporary Federal Reserve Board Limitations on Capital Distributions

From the third quarter of 2020 to the second quarter of 2021, the Federal Reserve Board placed temporary limitations on capital distributions for Citi and other large banking organizations, to ensure that large banks maintained a high level of capital resilience throughout the COVID-19 pandemic. Commencing July 1, 2021, Citi's common stock dividends and share repurchases were no longer subject to limitations based on the average of Citi's net income for the four preceding calendar quarters.

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

Citigroup's Capital Resources

The following table sets forth Citi's effective minimum risk-based capital requirements as of December 31, 2021, September 30, 2021 and December 31, 2020:

	Advanced Approaches			Standardized Approach		
	Dec. 31, 2021	Sept. 30, 2021	Dec. 31, 2020	**Dec. 31, 2021**	Sept. 30, 2021	Dec. 31, 2020
Common Equity Tier 1 Capital ratio[1]	**10.0%**	10.0%	10.0%	**10.5%**	10.0%	10.0%
Tier 1 Capital ratio[1]	**11.5**	11.5	11.5	**12.0**	11.5	11.5
Total Capital ratio[1]	**13.5**	13.5	13.5	**14.0**	13.5	13.5

(1) Beginning October 1, 2021, Citi's effective minimum risk-based capital requirements include the 3.0% SCB and 3.0% GSIB surcharge under the Standardized Approach, and the 2.5% Capital Conservation Buffer and 3.0% GSIB surcharge under the Advanced Approaches (all of which must be composed of Common Equity Tier 1 Capital). For prior periods presented, Citi's effective minimum risk-based capital requirements included a 2.5% SCB and 3.0% GSIB surcharge under the Standardized Approach, and the 2.5% Capital Conservation Buffer and 3.0% GSIB surcharge under the Advanced Approaches.

The following tables set forth Citi's capital components and ratios as of December 31, 2021, September 30, 2021 and December 31, 2020:

	Advanced Approaches[5]			Standardized Approach[5]		
In millions of dollars, except ratios	**Dec. 31, 2021**	Sept. 30, 2021	Dec. 31, 2020	**Dec. 31, 2021**	Sept. 30, 2021	Dec. 31, 2020
Common Equity Tier 1 Capital[1]	**$ 149,305**	$ 149,631	$ 147,274	**$ 149,305**	$ 149,631	$ 147,274
Tier 1 Capital	**169,568**	168,902	167,053	**169,568**	168,902	167,053
Total Capital (Tier 1 Capital + Tier 2 Capital)[1]	**194,006**	194,423	196,051	**203,838**	204,288	205,002
Total Risk-Weighted Assets	**1,209,374**	1,265,297	1,278,977	**1,219,175**	1,284,316	1,242,381
Credit Risk[1]	**$ 840,483**	$ 871,668	$ 859,698	**$1,135,906**	$1,187,516	$1,121,871
Market Risk	**78,634**	93,376	116,181	**83,269**	96,800	120,510
Operational Risk	**290,257**	300,253	303,098	**—**	—	—
Common Equity Tier 1 Capital ratio[2]	**12.35%**	11.83%	11.51%	**12.25%**	11.65%	11.85%
Tier 1 Capital ratio[2]	**14.02**	13.35	13.06	**13.91**	13.15	13.45
Total Capital ratio[2]	**16.04**	15.37	15.33	**16.72**	15.91	16.50

In millions of dollars, except ratios	Effective Minimum Requirement	Dec. 31, 2021	Sept. 30, 2021	Dec. 31, 2020
Quarterly Adjusted Average Total Assets[1][3]		**$2,351,434**	$2,311,830	$2,265,615
Total Leverage Exposure[1][4]		**2,957,764**	2,911,050	2,391,033
Tier 1 Leverage ratio	**4.0%**	**7.21%**	7.31%	7.37%
Supplementary Leverage ratio	**5.0**	**5.73**	5.80	6.99

(1) Citi has elected to apply the modified transition provision related to the impact of the CECL accounting standard on regulatory capital, as provided by the U.S. banking agencies' September 2020 final rule. Under the modified CECL transition provision, the changes in retained earnings (after-tax), deferred tax assets (DTAs) arising from temporary differences, and the ACL upon the January 1, 2020 CECL adoption date were deferred and have commenced phase-in to regulatory capital at 25% per year beginning January 1, 2022. For the ongoing impact of CECL, Citigroup was allowed to adjust retained earnings and the ACL in an amount equal to 25% of the change in the ACL (pretax) for each period between January 1, 2020 and December 31, 2021. The cumulative adjustments to retained earnings and the ACL between January 1, 2020 and December 31, 2021 commenced phase-in to regulatory capital at 25% per year beginning January 1, 2022, along with the deferred impacts related to the January 1, 2020 CECL adoption date. Corresponding adjustments to average on-balance sheet assets are reflected in quarterly adjusted average total assets and Total Leverage Exposure. Additionally, the increase in DTAs arising from temporary differences upon the January 1, 2020 adoption date were deducted from risk-weighted assets (RWA) and commenced phase-in to RWA at 25% per year beginning January 1, 2022.

(2) Citi's reportable Common Equity Tier 1 Capital and Tier 1 Capital ratios were derived under the Basel III Standardized Approach as of December 31, 2021 and September 30, 2021, and under the Basel III Advanced Approaches framework as of December 31, 2020, whereas Citi's reportable Total Capital ratio was the lower derived under the Basel III Advanced Approaches framework for all periods presented.

(3) Tier 1 Leverage ratio denominator. Represents quarterly average total assets less amounts deducted from Tier 1 Capital.

(4) Supplementary Leverage ratio denominator. Commencing with the second quarter of 2020 and continuing through the first quarter of 2021, Citigroup's Total Leverage Exposure temporarily excluded U.S. Treasuries and deposits at Federal Reserve Banks. For additional information, see "Temporary Supplementary Leverage Ratio Relief" above.

(5) Certain of the above prior-period amounts have been revised to conform with enhancements made in the current period.

Common Equity Tier 1 Capital Ratio

As set forth in the table above, Citi's Common Equity Tier 1 Capital ratio at December 31, 2021 increased from September 30, 2021, primarily due to a decrease in risk-weighted assets and a temporary pause in common share repurchases in the fourth quarter of 2021 in preparation for the implementation of the Standardized Approach for Counterparty Credit Risk (SA-CCR) on January 1, 2022. Citi's Common Equity Tier 1 Capital ratio increased from year-end 2020, largely driven by net income of $22.0 billion, a net decrease in risk-weighted assets and a temporary pause in common share repurchases in the fourth quarter of 2021 in preparation for the implementation of SA-CCR, partially offset by the return of $11.8 billion of capital to common shareholders in the form of share repurchases and dividends, as well as adverse net movements in *AOCI*.

Components of Citigroup Capital

In millions of dollars	**December 31, 2021**	December 31, 2020
Common Equity Tier 1 Capital		
Citigroup common stockholders' equity[1]	**$183,108**	$180,118
Add: Qualifying noncontrolling interests	**143**	141
Regulatory capital adjustments and deductions:		
Add: CECL transition and 25% provision deferral[2]	**3,028**	5,348
Less: Accumulated net unrealized gains (losses) on cash flow hedges, net of tax	**101**	1,593
Less: Cumulative unrealized net gain (loss) related to changes in fair value of financial liabilities attributable to own creditworthiness, net of tax	**(896)**	(1,109)
Less: Intangible assets:		
Goodwill, net of related DTLs[3]	**20,619**	21,124
Identifiable intangible assets other than MSRs, net of related DTLs	**3,800**	4,166
Less: Defined benefit pension plan net assets; other	**2,080**	921
Less: DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards[4]	**11,270**	11,638
Total Common Equity Tier 1 Capital (Standardized Approach and Advanced Approaches)	**$149,305**	$147,274
Additional Tier 1 Capital		
Qualifying noncumulative perpetual preferred stock[1]	**$ 18,864**	$ 19,324
Qualifying trust preferred securities[5]	**1,399**	1,393
Qualifying noncontrolling interests	**34**	35
Regulatory capital deductions:		
Less: Permitted ownership interests in covered funds[6]	**—**	917
Less: Other	**34**	56
Total Additional Tier 1 Capital (Standardized Approach and Advanced Approaches)	**$ 20,263**	$ 19,779
Total Tier 1 Capital (Common Equity Tier 1 Capital + Additional Tier 1 Capital) (Standardized Approach and Advanced Approaches)	**$169,568**	$167,053
Tier 2 Capital		
Qualifying subordinated debt	**$ 20,064**	$ 23,481
Qualifying trust preferred securities[7]	**248**	331
Qualifying noncontrolling interests	**42**	41
Eligible allowance for credit losses[2][8]	**14,209**	14,127
Regulatory capital deduction:		
Less: Other	**293**	31
Total Tier 2 Capital (Standardized Approach)	**$ 34,270**	$ 37,949
Total Capital (Tier 1 Capital + Tier 2 Capital) (Standardized Approach)	**$203,838**	$205,002
Adjustment for excess of eligible credit reserves over expected credit losses[2][8]	**$ (9,832)**	$ (8,951)
Total Tier 2 Capital (Advanced Approaches)	**$ 24,438**	$ 28,998
Total Capital (Tier 1 Capital + Tier 2 Capital) (Advanced Approaches)	**$194,006**	$196,051

Footnotes continue on the following page.

(1) Issuance costs of $131 million and $156 million related to noncumulative perpetual preferred stock outstanding at December 31, 2021 and 2020, respectively, are excluded from common stockholders' equity and netted against such preferred stock in accordance with Federal Reserve Board regulatory reporting requirements, which differ from those under U.S. GAAP.

(2) Citi has elected to apply the modified transition provision related to the impact of the CECL accounting standard on regulatory capital, as provided by the U.S. banking agencies' September 2020 final rule. Under the modified CECL transition provision, the changes in retained earnings (after-tax) and the ACL upon the January 1, 2020 CECL adoption date were deferred and commenced phase-in to regulatory capital at 25% per year beginning January 1, 2022. For the ongoing impact of CECL, Citigroup was allowed to adjust retained earnings and the ACL in an amount equal to 25% of the change in the ACL (pretax) for each period between January 1, 2020 and December 31, 2021. The cumulative adjustments to retained earnings and the ACL between January 1, 2020 and December 31, 2021 have also commenced phase in to regulatory capital at 25% per year beginning January 1, 2022, along with the deferred impacts related to the January 1, 2020 CECL adoption date.

(3) Includes goodwill "embedded" in the valuation of significant common stock investments in unconsolidated financial institutions.

(4) Of Citi's $24.8 billion of net DTAs at December 31, 2021, $15.3 billion was included in Common Equity Tier 1 Capital pursuant to the U.S. Basel III rules, while $9.5 billion was excluded. Excluded from Citi's Common Equity Tier 1 Capital as of December 31, 2021 was $11.3 billion of net DTAs arising from net operating loss, foreign tax credit and general business credit tax carry-forwards. The amount excluded was reduced by $1.8 billion of net DTLs primarily associated with goodwill and certain other intangible assets that are separately deducted from capital. DTAs arising from tax carry-forwards are required to be entirely deducted from Common Equity Tier 1 Capital under the U.S. Basel III rules. DTAs arising from temporary differences are required to be deducted from capital only if these DTAs exceed 10%/15% limitation under the U.S. Basel III rules. Citi's DTAs do not currently exceed this limitation and, therefore, are not subject to deduction from Common Equity Tier 1 Capital, but are subject to risk weighting at 250%.

(5) Represents Citigroup Capital XIII trust preferred securities, which are permanently grandfathered as Tier 1 Capital under the U.S. Basel III rules.

(6) Banking entities are required to be in compliance with the Volcker Rule of the Dodd-Frank Act, which prohibits conducting certain proprietary investment activities and limits their ownership of, and relationships with, covered funds. Commencing January 1, 2021, Citi no longer deducts permitted market-making positions in third-party covered funds from Tier 1 Capital, in accordance with the revised Volcker Rule 2.0 issued by the U.S. agencies in November 2019. Upon the removal of the capital deduction, permitted market-making positions in third-party covered funds are included in risk-weighted assets.

(7) Represents the amount of non-grandfathered trust preferred securities that were previously eligible for inclusion in Tier 2 Capital under the U.S. Basel III rules. Commencing January 1, 2022, non-grandfathered trust preferred securities have been fully phased out of Tier 2 Capital.

(8) Under the Standardized Approach, the allowance for credit losses is eligible for inclusion in Tier 2 Capital up to 1.25% of credit risk-weighted assets, with any excess allowance for credit losses being deducted in arriving at credit risk-weighted assets, which differs from the Advanced Approaches framework, in which eligible credit reserves that exceed expected credit losses are eligible for inclusion in Tier 2 Capital to the extent that the excess reserves do not exceed 0.6% of credit risk-weighted assets. The total amount of eligible credit reserves in excess of expected credit losses that were eligible for inclusion in Tier 2 Capital, subject to limitation, under the Advanced Approaches framework was $4.4 billion and $5.2 billion at December 30, 2021 and December 31, 2020, respectively.

Citigroup Capital Rollforward

In millions of dollars	Three months ended December 31, 2021	Twelve months ended December 31, 2021
Common Equity Tier 1 Capital, beginning of period	**$149,631**	**$147,274**
Net income	3,173	21,952
Common and preferred dividends declared	(1,249)	(5,236)
Net change in treasury stock	6	(7,111)
Net increase in common stock and additional paid-in capital	87	132
Net change in foreign currency translation adjustment net of hedges, net of tax	(462)	(2,525)
Net change in unrealized gains (losses) on debt securities AFS, net of tax	(1,396)	(3,934)
Net decrease in defined benefit plans liability adjustment, net of tax	76	1,012
Net change in adjustment related to change in fair value of financial liabilities attributable to own creditworthiness, net of tax	(3)	19
Net decrease in excluded component of fair value hedges	12	—
Net decrease in goodwill, net of related DTLs	70	505
Net decrease in identifiable intangible assets other than MSRs, net of related DTLs	99	366
Net increase in defined benefit pension plan net assets	(133)	(936)
Net change in DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards	(373)	368
Net decrease in CECL 25% provision deferral	(361)	(2,320)
Other	128	(261)
Net change in Common Equity Tier 1 Capital	**$ (326)**	**$ 2,031**
Common Equity Tier 1 Capital, end of period (Standardized Approach and Advanced Approaches)	**$149,305**	**$149,305**
Additional Tier 1 Capital, beginning of period	**$ 19,271**	**$ 19,779**
Net change in qualifying perpetual preferred stock	994	(460)
Net increase in qualifying trust preferred securities	1	6
Net decrease in permitted ownership interests in covered funds	—	917
Other	(3)	21
Net increase in Additional Tier 1 Capital	**$ 992**	**$ 484**
Tier 1 Capital, end of period (Standardized Approach and Advanced Approaches)	**$169,568**	**$169,568**
Tier 2 Capital, beginning of period (Standardized Approach)	**$ 35,386**	**$ 37,949**
Net decrease in qualifying subordinated debt	(392)	(3,417)
Net change in eligible allowance for credit losses	(651)	82
Other	(73)	(344)
Net decrease in Tier 2 Capital (Standardized Approach)	**$ (1,116)**	**$ (3,679)**
Tier 2 Capital, end of period (Standardized Approach)	**$ 34,270**	**$ 34,270**
Total Capital, end of period (Standardized Approach)	**$203,838**	**$203,838**
Tier 2 Capital, beginning of period (Advanced Approaches)	**$ 25,521**	**$ 28,998**
Net decrease in qualifying subordinated debt	(392)	(3,417)
Net decrease in excess of eligible credit reserves over expected credit losses	(618)	(799)
Other	(73)	(344)
Net decrease in Tier 2 Capital (Advanced Approaches)	**$ (1,083)**	**$ (4,560)**
Tier 2 Capital, end of period (Advanced Approaches)	**$ 24,438**	**$ 24,438**
Total Capital, end of period (Advanced Approaches)	**$194,006**	**$194,006**

Citigroup Risk-Weighted Assets Rollforward (Basel III Standardized Approach)

In millions of dollars	Three months ended December 31, 2021	Twelve months ended December 31, 2021
Total Risk-Weighted Assets, beginning of period	**$1,284,316**	**$1,242,381**
Changes in Credit Risk-Weighted Assets		
General credit risk exposures	(1,475)	(1,775)
Repo-style transactions[1]	(15,160)	(9,737)
Securitization exposures[2]	(1,306)	3,593
Equity exposures	(340)	494
Over-the-counter (OTC) derivatives[3]	(22,954)	3,224
Other exposures[4]	(7,167)	15,112
Off-balance sheet exposures	(3,208)	3,124
Net change in Credit Risk-Weighted Assets	**$ (51,610)**	**$ 14,035**
Changes in Market Risk-Weighted Assets		
Risk levels	$ (4,108)	$ (21,499)
Model and methodology updates	(9,423)	(15,742)
Net decrease in Market Risk-Weighted Assets[5]	**$ (13,531)**	**$ (37,241)**
Total Risk-Weighted Assets, end of period	**$1,219,175**	**$1,219,175**

(1) Repo-style transactions include repurchase and reverse repurchase transactions as well as securities borrowing and securities lending transactions. Repo-style transactions decreased during the three months and 12 months ended December 31, 2021, primarily due to exposure-driven decreases.
(2) Securitization exposures increased during the 12 months ended December 31, 2021, primarily due to increases in new deals.
(3) OTC derivatives decreased during the three months ended December 31, 2021, primarily due to decreases in mark-to-market and notional movement. OTC derivatives increased during the 12 months ended December 31, 2021, primarily due to increases in mark-to-market for bilateral derivatives.
(4) Other exposures include cleared transactions, unsettled transactions, and other assets. Other exposures decreased during the three months ended December 31, 2021 primarily due to decreases in cleared transactions. Other exposures increased during the 12 months ended December 31, 2021 primarily due to increases in various other assets.
(5) Market risk-weighted assets decreased during the three months and 12 months ended December 31, 2021, primarily due to exposure changes.

Citigroup Risk-Weighted Assets Rollforward (Basel III Advanced Approaches)

In millions of dollars	Three months ended December 31, 2021	Twelve months ended December 31, 2021
Total Risk-Weighted Assets, beginning of period	**$1,265,297**	**$1,278,977**
Changes in Credit Risk-Weighted Assets		
Retail exposures[1]	(8,043)	(13,426)
Wholesale exposures[2]	(8,408)	(10,630)
Repo-style transactions	2,516	(3,861)
Securitization exposures[3]	528	5,816
Equity exposures	(253)	206
Over-the-counter (OTC) derivatives[4]	(8,465)	(510)
Derivatives CVA[5]	(5,988)	(2,715)
Other exposures[6]	(1,646)	7,003
Supervisory 6% multiplier	(1,426)	(1,098)
Net decrease in Credit Risk-Weighted Assets	**$ (31,185)**	**$ (19,215)**
Changes in Market Risk-Weighted Assets		
Risk levels	$ (5,320)	$ (21,805)
Model and methodology updates	(9,422)	(15,742)
Net decrease in Market Risk-Weighted Assets[7]	**$ (14,742)**	**$ (37,547)**
Net decrease in Operational Risk-Weighted Assets[8]	**$ (9,996)**	**$ (12,841)**
Total Risk-Weighted Assets, end of period	**$1,209,374**	**$1,209,374**

(1) Retail exposures decreased during the three months ended December 31, 2021, primarily driven by model recalibrations. Retail exposures decreased during the 12 months ended December 31, 2021, primarily driven by seasonal holiday spending repayments, less spending on qualifying revolving (card) exposures and model recalibrations.
(2) Wholesale exposures decreased during the three months and 12 months ended December 31, 2021, primarily due to reductions in commercial loans and wholesale loan commitments.
(3) Securitization exposures increased during the 12 months ended December 31, 2021, primarily due to increases in new deals.
(4) OTC derivatives decreased during the three months ended December 31,2021, primarily due to decreases in mark-to-market and notional movement.
(5) Derivatives CVA decreased during the three months ended December 31, 2021, primarily due to decreases in exposure and volatility, as well as lower credit spreads and sensitivity.
(6) Other exposures increased during the 12 months ended December 31, 2021, primarily due to increases in various other assets.
(7) Market risk-weighted assets decreased during the three months and 12 months ended December 31, 2021, primarily due to exposure changes.
(8) Operational risk-weighted assets decreased during the three months and 12 months ended December 31, 2021, primarily due to changes in operational loss severity and frequency.

Supplementary Leverage Ratio

The following table sets forth Citi's Supplementary Leverage ratio and related components as of December 31, 2021, September 30, 2021 and December 31, 2020:

In millions of dollars, except ratios	**December 31, 2021**	September 30, 2021	December 31, 2020
Tier 1 Capital	**$ 169,568**	$ 168,902	$ 167,053
Total Leverage Exposure			
On-balance sheet assets[1][2][3]	**$2,389,237**	$2,349,414	$1,864,374
Certain off-balance sheet exposures:[4]			
Potential future exposure on derivative contracts	**222,241**	222,157	186,959
Effective notional of sold credit derivatives, net[5]	**23,788**	21,987	32,640
Counterparty credit risk for repo-style transactions[6]	**25,775**	21,174	20,965
Unconditionally cancelable commitments	**70,196**	70,541	71,163
Other off-balance sheet exposures	**264,330**	263,361	253,754
Total of certain off-balance sheet exposures	**$ 606,330**	$ 599,220	$ 565,481
Less: Tier 1 Capital deductions	**37,803**	37,584	38,822
Total Leverage Exposure[3]	**$2,957,764**	$2,911,050	$2,391,033
Supplementary Leverage ratio	**5.73%**	5.80%	6.99%

(1) Represents the daily average of on-balance sheet assets for the quarter.

(2) Citi has elected to apply the modified transition provision related to the impact of the CECL accounting standard on regulatory capital, as provided by the U.S. banking agencies' September 2020 final rule. Under the modified CECL transition provision, the changes in DTAs arising from temporary differences and the ACL upon the January 1, 2020 CECL adoption date were deferred and commenced phase-in to regulatory capital at 25% per year beginning January 1, 2022. For the ongoing impact of CECL, Citigroup was allowed to adjust the ACL in an amount equal to 25% of the change in the ACL (pretax) for each period between January 1, 2020 and December 31, 2021. The cumulative adjustments to the ACL between January 1, 2020 and December 31, 2021 have also commenced phase in to regulatory capital at 25% per year beginning January 1, 2022, along with the deferred impacts related to the January 1, 2020 CECL adoption date. Corresponding adjustments to average on-balance sheet assets are reflected in Total Leverage Exposure.

(3) Commencing with the second quarter of 2020 and continuing through the first quarter of 2021, Citigroup's Total Leverage Exposure temporarily excluded U.S. Treasuries and deposits at Federal Reserve Banks. For additional information, see "Temporary Supplementary Leverage Ratio Relief" above.

(4) Represents the average of certain off-balance sheet exposures calculated as of the last day of each month in the quarter.

(5) Under the U.S. Basel III rules, banking organizations are required to include in Total Leverage Exposure the effective notional amount of sold credit derivatives, with netting of exposures permitted if certain conditions are met.

(6) Repo-style transactions include repurchase or reverse repurchase transactions as well as securities borrowing or securities lending transactions.

As set forth in the table above, Citigroup's Supplementary Leverage ratio was 5.7% at December 31, 2021, compared to 5.8% at September 30, 2021 and 7.0% at December 31, 2020. The quarter-over-quarter decrease was primarily driven by an increase in Total Leverage Exposure, primarily driven by an increase in average on-balance sheet assets, as well as adverse net movements in AOCI, partially offset by net income in the quarter. The year-over-year decrease was primarily driven by an increase in Total Leverage Exposure, largely due to an approximate 100 basis point impact from the expiration of the Federal Reserve Board's temporary Supplementary Leverage ratio relief. For additional information, see "Temporary Supplementary Leverage Ratio Relief" above.

Capital Resources of Citigroup's Subsidiary U.S. Depository Institutions

Citigroup's subsidiary U.S. depository institutions are also subject to regulatory capital standards issued by their respective primary bank regulatory agencies, which are similar to the standards of the Federal Reserve Board.

The following tables set forth the capital components and ratios for Citibank, Citi's primary subsidiary U.S. depository institution, as of December 31, 2021, September 30, 2021 and December 31, 2020:

	Effective	Advanced Approaches[8]			Standardized Approach[8]		
In millions of dollars, except ratios	Minimum Requirement[1]	**December 31, 2021**	September 30, 2021	December 31, 2020	**December 31, 2021**	September 30, 2021	December 31, 2020
Common Equity Tier 1 Capital[2]		**$ 148,548**	$ 147,459	$ 142,854	**$ 148,548**	$ 147,459	$ 142,854
Tier 1 Capital		**150,679**	149,588	144,962	**150,679**	149,588	144,962
Total Capital (Tier 1 Capital + Tier 2 Capital)[2][3]		**166,921**	166,196	161,447	**175,427**	174,745	169,449
Total Risk-Weighted Assets		**1,017,774**	1,067,406	1,047,088	**1,066,015**	1,107,021	1,054,056
Credit Risk[2]		**$ 737,802**	$ 761,259	$ 737,953	**$1,016,293**	$1,048,581	$ 989,222
Market Risk		**48,089**	55,566	63,984	**49,722**	58,440	64,834
Operational Risk		**231,883**	250,581	245,151	**—**	—	—
Common Equity Tier 1 Capital ratio[4][5]	**7.0%**	**14.60%**	13.81%	13.64%	**13.93%**	13.32%	13.55%
Tier 1 Capital ratio[4][5]	**8.5**	**14.80**	14.01	13.84	**14.13**	13.51	13.75
Total Capital ratio[4][5]	**10.5**	**16.40**	15.57	15.42	**16.46**	15.79	16.08

In millions of dollars, except ratios	Effective Minimum Requirement	**December 31, 2021**	September 30, 2021	December 31, 2020
Quarterly Adjusted Average Total Assets[2][6]		**$1,716,596**	$1,682,993	$1,667,105
Total Leverage Exposure[2][7]		**2,236,839**	2,205,471	2,172,052
Tier 1 Leverage ratio[5]	**5.0%**	**8.78%**	8.89%	8.70%
Supplementary Leverage ratio[5]	**6.0**	**6.74**	6.78	6.67

(1) For all periods presented, Citibank's effective minimum risk-based capital requirements are inclusive of the 2.5% Capital Conservation Buffer (all of which must be composed of Common Equity Tier 1 Capital).
(2) Citibank has elected to apply the modified transition provision related to the impact of the CECL accounting standard on regulatory capital, as provided by the U.S. banking agencies' September 2020 final rule. Under the modified CECL transition provision, the changes in retained earnings (after-tax), deferred tax assets (DTAs) arising from temporary differences, and the ACL upon the January 1, 2020 CECL adoption date were deferred and have commenced phase-in to regulatory capital at 25% per year beginning on January 1, 2022. For the ongoing impact of CECL, Citibank was allowed to adjust retained earnings and the ACL in an amount equal to 25% of the change in the ACL (pretax) for each period between January 1, 2020 and December 31, 2021. The cumulative adjustments to retained earnings and the ACL between January 1, 2020 and December 31, 2021 have also commenced phase-in to regulatory capital at 25% per year beginning January 1, 2022, along with the deferred impacts related to the January 1, 2020 CECL adoption date. Corresponding adjustments to average on-balance sheet assets are reflected in quarterly adjusted average total assets and Total Leverage Exposure. Additionally, the increase in DTAs arising from temporary differences upon the January 1, 2020 adoption date were deducted from risk-weighted assets (RWA) and commenced phase-in to RWA at 25% per year beginning January 1, 2022.
(3) Under the Advanced Approaches framework, eligible credit reserves that exceed expected credit losses are eligible for inclusion in Tier 2 Capital to the extent that the excess reserves do not exceed 0.6% of credit risk-weighted assets, which differs from the Standardized Approach in which the ACL is eligible for inclusion in Tier 2 Capital up to 1.25% of credit risk-weighted assets, with any excess ACL being deducted in arriving at credit risk-weighted assets.
(4) Citibank's reportable Common Equity Tier 1 Capital and Tier 1 Capital ratios were the lower derived under the Basel III Standardized Approach, whereas Total Capital ratio was derived under the Basel III Advanced Approaches framework for all periods presented.
(5) Citibank must maintain minimum Common Equity Tier 1 Capital, Tier 1 Capital, Total Capital and Tier 1 Leverage ratios of 6.5%, 8.0%, 10.0% and 5.0%, respectively, to be considered "well capitalized" under the revised Prompt Corrective Action (PCA) regulations applicable to insured depository institutions as established by the U.S. Basel III rules. Citibank must also maintain a minimum Supplementary Leverage ratio of 6.0% to be considered "well capitalized."
(6) Tier 1 Leverage ratio denominator. Represents quarterly average total assets less amounts deducted from Tier 1 Capital.
(7) Supplementary Leverage ratio denominator.
(8) Certain of the above prior-period amounts have been revised to conform with enhancements made in the current period.

As indicated in the table above, Citibank's capital ratios at December 31, 2021 were in excess of the stated and effective minimum requirements under the U.S. Basel III rules. In addition, Citibank was also "well capitalized" as of December 31, 2021.

Impact of Changes on Citigroup and Citibank Capital Ratios

The following tables present the estimated sensitivity of Citigroup's and Citibank's capital ratios to changes of $100 million in Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital (numerator), and changes of $1 billion in Advanced Approaches and Standardized Approach risk-weighted assets and quarterly adjusted average total assets, as well as Total Leverage Exposure (denominator), as of December 31, 2021. This information is provided for the purpose of analyzing the impact that a change in Citigroup's or Citibank's financial position or results of operations could have on these ratios. These sensitivities only consider a single change to either a component of capital, risk-weighted assets, quarterly adjusted average total assets or Total Leverage Exposure. Accordingly, an event that affects more than one factor may have a larger basis point impact than is reflected in these tables.

	Common Equity Tier 1 Capital ratio		Tier 1 Capital ratio		Total Capital ratio	
In basis points	Impact of $100 million change in Common Equity Tier 1 Capital	Impact of $1 billion change in risk-weighted assets	Impact of $100 million change in Tier 1 Capital	Impact of $1 billion change in risk-weighted assets	Impact of $100 million change in Total Capital	Impact of $1 billion change in risk-weighted assets
Citigroup						
Advanced Approaches	0.8	1.0	0.8	1.2	0.8	1.3
Standardized Approach	0.8	1.0	0.8	1.1	0.8	1.4
Citibank						
Advanced Approaches	1.0	1.4	1.0	1.5	1.0	1.6
Standardized Approach	0.9	1.3	0.9	1.3	0.9	1.5

	Tier 1 Leverage ratio		Supplementary Leverage ratio	
In basis points	Impact of $100 million change in Tier 1 Capital	Impact of $1 billion change in quarterly adjusted average total assets	Impact of $100 million change in Tier 1 Capital	Impact of $1 billion change in Total Leverage Exposure
Citigroup	0.4	0.3	0.3	0.2
Citibank	0.6	0.5	0.4	0.3

Citigroup Broker-Dealer Subsidiaries

At December 31, 2021, Citigroup Global Markets Inc., a U.S. broker-dealer registered with the SEC that is an indirect wholly owned subsidiary of Citigroup, had net capital, computed in accordance with the SEC's net capital rule, of $13 billion, which exceeded the minimum requirement by $8 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 Citigroup, had total capital of $28 billion at December 31, 2021, which exceeded the PRA's minimum regulatory capital requirements.

In addition, certain of Citi's other broker-dealer subsidiaries are subject to regulation in the countries in which they operate, including requirements to maintain specified levels of net capital or its equivalent. Citigroup's other principal broker-dealer subsidiaries were in compliance with their regulatory capital requirements at December 31, 2021.

Total Loss-Absorbing Capacity (TLAC)

U.S. GSIBs, including Citi, are required to maintain minimum levels of TLAC and eligible long-term debt (LTD), each set by reference to the GSIB's consolidated risk-weighted assets (RWA) and total leverage exposure.

Minimum External TLAC Requirement

The minimum external TLAC requirement is the greater of (i) 18% of the GSIB's RWA plus the then-applicable RWA-based TLAC buffer (see below) and (ii) 7.5% of the GSIB's total leverage exposure plus a leverage-based TLAC buffer of 2% (i.e., 9.5%).

The RWA-based TLAC buffer equals the 2.5% capital conservation buffer, plus any applicable countercyclical capital buffer (currently 0%), plus the GSIB's capital surcharge as determined under method 1 of the GSIB surcharge rule (2.0% for Citi for 2021). Accordingly, Citi's total current minimum TLAC requirement was 22.5% of RWA for 2021.

Minimum LTD Requirement

The minimum LTD requirement is the greater of (i) 6% of the GSIB's RWA plus its capital surcharge as determined under method 2 of the GSIB surcharge rule (3.0% for Citi for 2021), for a total current requirement of 9% of RWA for Citi, and (ii) 4.5% of the GSIB's total leverage exposure.

The table below details Citi's eligible external TLAC and LTD amounts and ratios, and each effective minimum TLAC and LTD ratio requirement, as well as the surplus amount in dollars in excess of each requirement.

	December 31, 2021	
In billions of dollars, except ratios	External TLAC	LTD
Total eligible amount	$ 318	$ 143
% of Standardized Approach risk-weighted assets	26.1%	11.7%
Effective minimum requirement[1][2]	22.5	9.0
Surplus amount	$ 44	$ 33
% of Total Leverage Exposure	10.8%	4.8%
Effective minimum requirement	9.5	4.5
Surplus amount	$ 37	$ 10

(1) External TLAC includes Method 1 GSIB surcharge of 2.0%.
(2) LTD includes Method 2 GSIB surcharge of 3.0%.

As of December 31, 2021, Citi exceeded each of the minimum TLAC and LTD requirements, resulting in a $10 billion surplus above its binding TLAC requirement of LTD as a percentage of Total Leverage Exposure.

For additional information on Citi's TLAC-related requirements, see "Risk Factors—Compliance Risks" and "Liquidity Risk—Total Loss-Absorbing Capacity (TLAC)" below.

Capital Resources (Full Adoption of CECL)[1]

The following tables set forth Citigroup's and Citibank's capital components and ratios had the full impact of CECL been adopted as of December 31, 2021:

	Citigroup				Citibank		
	Effective Minimum Requirement, Advanced Approaches	Effective Minimum Requirement, Standardized Approach[2]	Advanced Approaches	Standardized Approach	Effective Minimum Requirement[3]	Advanced Approaches	Standardized Approach
Common Equity Tier 1 Capital ratio	10.0%	10.5%	12.10%	12.01%	7.0%	14.32%	13.68%
Tier 1 Capital ratio	11.5	12.0	13.78	13.68	8.5	14.53	13.88
Total Capital ratio	13.5	14.0	15.86	16.49	10.5	16.15	16.21

	Effective Minimum Requirement	Citigroup	Effective Minimum Requirement	Citibank
Tier 1 Leverage ratio	4.0%	7.09%	5.0%	8.62%
Supplementary Leverage ratio	5.0	5.64	6.0	6.61

(1) See footnote 2 on the "Components of Citigroup Capital" table above.
(2) The effective minimum requirements were applicable as of December 31, 2021. See "Stress Capital Buffer" above for additional information.
(3) Citibank's effective minimum requirements were the same under the Standardized Approach and the Advanced Approaches Framework.

Adoption of the Standardized Approach for Counterparty Credit Risk

In January 2020, the U.S. banking agencies issued a final rule to introduce the Standardized Approach for Counterparty Credit Risk (SA-CCR). SA-CCR replaced the Current Exposure Method (CEM), which was the previous methodology used to calculate exposure for all derivative contracts under the Standardized Approach, as well as RWA for derivative contracts under the Advanced Approaches in cases where internal models are not used. In addition, SA-CCR replaced CEM in numerous other instances throughout the regulatory framework, including but not limited to the Supplementary Leverage Ratio, certain components of the GSIB score, single counterparty credit limits and legal lending limits.

Under SA-CCR, a banking organization calculates the exposure amount of its derivative contracts at the netting set level. Multiple derivative contracts are generally considered to be under the same netting set as long as each derivative contract is subject to the same qualifying master netting agreement. SA-CCR also introduced the concept of hedging sets, which allows a banking organization to fully or partially net derivative contracts within the same netting set that share similar risk factors. Moreover, SA-CCR incorporated updated supervisory and maturity factors to calculate the potential future exposure of a derivative contract, and provides for improved recognition of collateral. Under the final rule, the exposure amount of a netting set is equal to an alpha factor of 1.4 multiplied by the sum of the replacement cost and potential future exposure of the netting set.

Citi adopted SA-CCR as of the mandatory compliance date of January 1, 2022. Adoption of SA-CCR increased Citigroup's Standardized RWA by approximately $51 billion, which resulted in a 49 bps decrease to Citigroup's Common Equity Tier 1 Capital ratio under the Standardized Approaches on January 1, 2022. Citigroup's reported CET1 Capital ratio under the Standardized Approach as of December 31, 2021 was 12.25%, 75 bps above its 11.5% CET1 Capital target, and 175 bps above its 10.5% effective regulatory minimum CET1 Capital requirement under the Standardized Approach.

Adoption of SA-CCR also increased Citigroup's Advanced RWA by approximately $29 billion, which resulted in a 29 bps decrease to Citigroup's Common Equity Tier 1 Capital ratio under the Advanced Approaches on January 1, 2022. Citigroup's reported CET1 Capital ratio under the Advanced Approaches as of December 31, 2021 was 12.35%, 85 bps above its 11.5% CET1 Capital target, and 235 bps above its 10.0% effective regulatory minimum CET1 Capital requirement under the Advanced Approaches.

Citigroup voluntarily suspended share repurchases during the fourth quarter of 2021, in anticipation of the adverse impact resulting from SA-CCR adoption. Citi resumed common share repurchases in January 2022.

Regulatory Capital Standards Developments

Basel III Revisions

As previously disclosed, the Basel Committee on Banking Supervision (Basel Committee) has finalized certain Basel III post-crisis regulatory reforms. The reforms relate to the methodologies in deriving credit, market and operational risk-weighted assets, the imposition of a new aggregate output floor for risk-weighted assets, and revisions to the leverage ratio framework.

The U.S. banking agencies may revise the U.S. Basel III rules in the future, in response to the Basel Committee's Basel III post-crisis regulatory reforms. For information about risks related to changes in regulatory capital requirements, see "Risk Factors—Strategic Risks." below.

Tangible Common Equity, Book Value Per Share, Tangible Book Value Per Share and Return on Equity

Tangible common equity (TCE) represents common stockholders' equity less goodwill and identifiable intangible assets (other than mortgage servicing rights (MSRs)). RoTCE represents net income available to common shareholders as a percentage of average TCE. Tangible book value (TBV) per share represents TCE divided by common shares outstanding. These measures are non-GAAP financial measures. Other companies may calculate these measures in a different manner. Citi believes TCE, TBV and RoTCE provide alternate measures of capital strength and performance for investors, industry analysts and others.

	At December 31,				
In millions of dollars or shares, except per share amounts	**2021**	2020	2019	2018	2017
Total Citigroup stockholders' equity	**$201,972**	$199,442	$193,242	$196,220	$200,740
Less: Preferred stock	**18,995**	19,480	17,980	18,460	19,253
Common stockholders' equity	**$182,977**	$179,962	$175,262	$177,760	$181,487
Less:					
Goodwill	**21,299**	22,162	22,126	22,046	22,256
Identifiable intangible assets (other than MSRs)	**4,091**	4,411	4,327	4,636	4,588
Goodwill and identifiable intangible assets (other than MSRs) related to assets held-for-sale (HFS)	**510**	—	—	—	32
Tangible common equity (TCE)	**$157,077**	$153,389	$148,809	$151,078	$154,611
Common shares outstanding (CSO)	**1,984.4**	2,082.1	2,114.1	2,368.5	2,569.9
Book value per share (common stockholders' equity/CSO)	**$ 92.21**	$ 86.43	$ 82.90	$ 75.05	$ 70.62
Tangible book value per share (TCE/CSO)	**79.16**	73.67	70.39	63.79	60.16

	For the year ended December 31,				
In millions of dollars	**2021**	2020	2019	2018	2017[1]
Net income available to common shareholders	**$ 20,912**	$ 9,952	$ 18,292	$ 16,871	$ 14,583
Average common stockholders' equity	**182,421**	175,508	177,363	179,497	207,747
Average TCE	**156,253**	149,892	150,994	153,343	180,458
Return on average common stockholders' equity	**11.5%**	5.7%	10.3%	9.4%	7.0%
Return on average TCE (RoTCE)	**13.4**	6.6	12.1	11.0	8.1

(1) Year ended December 31, 2017 excludes the one-time impact of Tax Reform. For a reconciliation of these amounts, see "Significant Accounting Policies and Significant Estimates—Income Taxes" below.

RISK FACTORS

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 that Citi may face. For additional information about risks and uncertainties that could impact Citi, see "Executive Summary" and each respective business' results of operations above and "Managing Global Risk" below. The following risk factors are categorized to improve the readability and usefulness of the risk factor disclosure, and, while the headings and risk factors generally align with Citi's risk categorization, in certain instances the risk factors may not directly correspond with how Citi categorizes or manages its risks.

MARKET-RELATED 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 below), 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, the recent action of Russian military forces and support personnel in Ukraine has escalated tensions between Russia and the U.S., NATO, the EU and the U.K. The U.S. has imposed, and is likely to impose material additional, financial and economic sanctions and export controls against certain Russian organizations and/or individuals, with similar actions either implemented or planned by the EU and the U.K. and other jurisdictions. During the week of February 21, 2022, the U.S., the U.K., and the EU each imposed packages of financial and economic sanctions that, in various ways, constrain transactions with numerous Russian entities and individuals; transactions in Russian sovereign debt; and investment, trade, and financing to, from, or in certain regions of Ukraine. Citi's ability to engage in activity with certain consumer and institutional businesses in Russia and Ukraine or involving certain Russian or Ukrainian businesses and customers is dependent in part upon whether such engagement is restricted under any current or expected U.S., EU and other countries or U.K. sanctions and laws. Sanctions and export controls, as well as any actions by Russia, could adversely affect Citi's business activities and customers in and from Russia and Ukraine. Moreover, actions by Russia, and any further measures taken by the U.S. or its allies, could have negative impacts on regional and global financial markets and economic conditions. For additional information about these and other related risks, see the operational processes and systems, cybersecurity and emerging markets risk factors below. For additional information about Citi's exposures in Russia, see "Managing Global Risk—Other Risks—Country Risk—Russia" below.

Additionally, 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. Further, it remains uncertain to what extent central banks may keep interest rates low or whether central banks might raise interest rates or reduce the size of their balance sheets, particularly as inflationary pressures continue and the U.S. and global economies continue to improve. While earlier in the pandemic the Federal Reserve Board (FRB) and other central banks took actions to support the global economy, including by further reducing their benchmark interest rates, mismatches between supply and demand of goods and services contributed to a rise in inflation in 2021, prompting the FRB to announce the approaching end of the period of extraordinarily low interest rates.

Interest rates on loans Citi makes are typically based off or set at a spread over a benchmark interest rate, and would likely decline or rise as benchmark rates decline or rise, respectively. While the interest rates at which Citi pays depositors are already low and unlikely to decline much further, declining or continued low interest rates for loans could further compress Citi's net interest income. Citi's net interest income 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.

In contrast, an abrupt and sustained increase in interest rates could interfere with the global macroeconomic recovery, whether due to continued or increased inflationary pressures or otherwise. And while Citi estimates its overall net interest income would generally increase due to higher interest rates, higher rates could adversely affect Citi's funding costs, levels of deposits in its consumer and institutional businesses and certain business or product revenues. For additional information on Citi's interest rate risk, see "Managing Global Risk—Market Risk—Net Interest Income at Risk" below.

Additional areas of uncertainty include, among others, an elevated level of inflation resulting in adverse spill-over effects; the ability of Congress to raise the federal debt ceiling; slowing of the Chinese economy, including negative economic impacts associated with such slowdown or any policy actions; significant disruptions and volatility in financial markets; other geopolitical tensions and conflicts; protracted or widespread trade tensions; financial market, other economic and political disruption driven by anti-establishment movements; natural disasters; other pandemics; and election outcomes. For example, Citi's market-making businesses can suffer losses resulting from the widening of credit spreads due to unanticipated changes in financial markets. In addition, 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.

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).

STRATEGIC RISKS

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

The COVID-19 pandemic has affected all of the countries and jurisdictions in which Citi operates, including severely impacting global health, financial markets, consumer and business spending and economic conditions. The extent of the future pandemic impacts remain uncertain and will likely 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 as well as any variants becoming more prevalent and impactful; further production, distribution, acceptance and effectiveness of vaccines; availability and efficiency of testing; the public response; and government actions. The future impacts to global economic conditions may include, among others:

- further disruption of global supply chains;
- higher inflation;
- higher interest rates;
- significant disruption and volatility in financial markets;
- additional closures, reduced activity and failures of many businesses, leading to loss of revenues and net losses;
- further institution of social distancing and restrictions on businesses and the movement of the public in and among the U.S. and other countries; and
- reduced U.S. and global economic output.

The pandemic has had, and may 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. Such developments are uncertain and cannot be predicted, including the course of the coronavirus, as well as any weakness or slowing in the economic recovery or a further economic downturn, whether due to further supply chain disruptions, inflation trends, higher interest rates or otherwise.

The pandemic may not be sufficiently contained for an extended period of time. A prolonged health crisis could reduce economic activity in the U.S. and other countries, resulting in additional declines or weakness in employment trends and business and consumer confidence. These factors could 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 an 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.

The impact of the pandemic on Citi's consumer and corporate borrowers will vary by sector or industry, with some borrowers experiencing greater stress levels, particularly as credit and customer assistance support further winds down, 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. These borrowers include, among others, businesses that are more directly impacted by the institution of social distancing, the movement of the public and store closures. In addition, stress levels ultimately experienced by Citi's borrowers may be different from and more intense than assumptions made in prior estimates or models used by Citi, resulting in an increase in Citi's ACL or net credit losses, particularly as the benefits of fiscal stimulus and government support programs diminish.

Ongoing legislative and regulatory changes in the U.S. and globally to address the economic impact from the pandemic could further affect Citi's businesses, operations and financial performance. Citi could also face challenges, including legal and reputational, and scrutiny in its efforts to provide relief measures. Such 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.

Citi has taken measures to maintain the health and safety of its colleagues; however, these measures could result in additional expenses, and illness of employees could negatively affect staffing for a period of time. In addition, Citi's ability to recruit, hire and onboard colleagues in key areas could be negatively impacted by pandemic restrictions as well as Citi's COVID-19 vaccination requirement (see the qualified colleagues risk factor below).

Further, it is unclear how the macroeconomic or business environment or societal norms may be impacted after the pandemic. The post-pandemic environment may undergo unexpected developments or changes in financial markets, 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 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, the capital impact related to divestitures, forecasts of macroeconomic conditions, its implementation and maintenance of an effective capital planning process and management framework, and effectiveness in planning, managing and calculating its level of risk-weighted assets under both the Advanced Approaches and the Standardized Approach, Supplementary Leverage Ratio (SLR) and global systemically important bank holding company (GSIB) surcharge, which has been made more challenging due to elevated levels of liquidity in the financial system related to the pandemic (see the macroeconomic challenges and uncertainties risk factor above).

Changes in regulatory capital rules, requirements or interpretations could have a material impact on Citi's regulatory capital, both as a result of changes in Citi's reported regulatory capital and integration into the CCAR process and regulatory stress tests. For example, Citi was required to adopt the Standardized Approach for Counterparty Credit Risk (SA-CCR) as of January 1, 2022, which resulted in an approximate $51 billion increase in Citi's risk-weighted assets under the Standardized Approach. Citi voluntarily suspended common share repurchases during the fourth quarter of 2021, in anticipation of the adverse impact resulting from the adoption of SA-CCR. Citi will be required to adopt SA-CCR for purposes of the supervisory stress test during the 2023 cycle and SA-CCR may be considered by management during the 2022 cycle for purposes of management's own capital adequacy assessment. In addition, the U.S. banking agencies may potentially consider a number of changes to the U.S. regulatory capital framework in the future, including, but not limited to, revisions to the U.S. Basel III rules, recalibration of the GSIB surcharge and SLR, and enactment of the discretionary Countercyclical Capital Buffer. All of these potential changes could negatively impact Citi's regulatory capital position or increase Citi's regulatory capital requirements.

All CCAR firms, including Citi, will continue to be subject to a rigorous regulatory evaluation of capital planning practices, including, but not limited to, governance, risk management and internal controls. Citi's ability to return capital may be adversely impacted if such an evaluation of Citi resulted in negative findings. In addition, 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. For additional information on limitations on Citi's ability to return capital to common shareholders, as well as the CCAR process, supervisory stress test requirements and GSIB surcharge, see "Capital Resources—Overview" and "Capital Resources—Stress Testing Component of Capital Planning" above and the risk management risk factor below.

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 was 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 through the 2023 supervisory stress test cycle, while continuing to evaluate appropriate future enhancements to this framework. The impacts on Citi's capital adequacy of the FRB's incorporation of CECL in its supervisory stress tests on an ongoing basis, and of other potential regulatory changes in the FRB's stress testing methodologies, remain unclear. For additional information regarding the CECL methodology, including the transition provisions related to the adverse regulatory capital effects resulting from adoption of the CECL methodology, see "Capital Resources—Current Regulatory Capital Standards—Regulatory Capital Treatment—Modified Transition of the Current Expected Credit Losses Methodology" above and Note 1 to the Consolidated Financial Statements.

In addition, the FRB has integrated the annual stress testing requirements with ongoing regulatory capital requirements. For Citigroup, the SCB equals the maximum decline in Citi's Common Equity Tier 1 Capital ratio under the supervisory severely adverse scenario over a nine-quarter CCAR measurement period, plus four quarters of planned common stock dividends, subject to a minimum requirement of 2.5%. Effective October 1, 2021, Citi's SCB was 3.0%. 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 other regulatory capital buffers, a breach of the SCB would result in graduated limitations on capital distributions. For additional information on the SCB, including its calculation, see "Capital Resources—Regulatory Capital Buffers" above.

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

Citi, 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 differing priorities of the current U.S. presidential administration, changes in regulatory leadership or focus and actions of 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 and "Capital Resources—Regulatory Capital Standards Developments" above); and (iii) future legislative and regulatory requirements in the U.S. and globally related to climate change, including any new disclosure requirements (see the climate change risk factor below). When referring to "regulatory," Citi is including both formal regulation and the views and expectations of its regulators in their supervisory roles.

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.

Moreover, 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.

Regulatory and legislative changes have also significantly increased Citi's compliance risks and costs (see the implementation and interpretation of regulatory changes risk factor below) and can adversely affect Citi's businesses, results of operations and financial condition.

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

As part of its transformation initiatives, Citi continues to make significant investments to improve its infrastructure, risk management and controls and further enhance safety and soundness (for additional information, see the legal and regulatory proceedings risk factor below). Citi also continues to execute on its strategic refresh that includes, among other things, its exit of certain consumer banking businesses (see below) and its investments to deepen client relationships and enhance client offerings and capabilities in order to simplify the Company and enhance its allocation of resources.

For example, Citi continues to invest in its technology and digital capabilities across the franchise, including digital platforms and mobile and cloud-based solutions. In addition, Citi has been making other investments across the Company, such as in Citi's wealth management business, commercial banking business, treasury and trade solutions, securities services and other businesses, including implementing new capabilities and partnerships. Citi has also been pursuing productivity improvements through various technology and digital initiatives, organizational simplification and location strategies. Failure to properly invest in and upgrade Citi's technology and processes could result in an inability to be sufficiently competitive, serve clients effectively and avoid operational errors (for additional information, see the operational processes and systems risk factor below). There is no guarantee that these or other initiatives Citi may pursue will be as productive or effective as Citi expects, or at all.

Furthermore, Citi's strategic refresh necessitates further changes in and exits of certain businesses, which involve significant execution complexity, and could result in additional losses, charges or other negative financial impacts. For example, Citi may not be able to achieve its objectives related to its exits of 13 consumer markets in *Asia* and *EMEA* or exit of the consumer, small business and middle-market banking operations in Mexico. These exits may not be as productive, effective or timely as Citi expects and may result in additional foreign currency translation adjustments (CTA) or other losses, charges or other negative financial or strategic impacts, which could be material. For additional information on CTA losses, see the incorrect assumptions or estimates risk factor below.

Citi's investment and other initiatives may continue to evolve as its business strategies, the market environment and regulatory expectations change, which could make the initiatives more costly and more challenging to implement, and limit their effectiveness. Moreover, Citi's ability to achieve expected returns on its investments and costs savings depends, in part, on factors that it cannot control, including, among others, interest rates; inflation; impacts related to the pandemic; customer, client and competitor actions; and ongoing regulatory changes.

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, 2021, Citi's net DTAs were $24.8 billion, net of a valuation allowance of $4.2 billion, of which $9.5 billion was deducted 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 (for additional information, see "Capital Resources—Components of Citigroup Capital" above).

Of the net DTAs at December 31, 2021, $2.8 billion related to foreign tax credit (FTC) carry-forwards, net of a valuation allowance. The carry-forward utilization period for FTCs is 10 years and represents the most time-sensitive component of Citi's DTAs. The FTC carry-forwards at December 31, 2021 expire over the period of 2022–2029. 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 has not been and does not expect to be subject to the Base Erosion Anti-Abuse Tax (BEAT), which, if applicable to Citi in any given year, would have a significantly adverse effect on both Citi's net income and regulatory capital.

For additional information on Citi's DTAs, including FTCs, see "Significant Accounting Policies and Significant Estimates—Income Taxes" below and Notes 1 and 9 to the Consolidated Financial Statements.

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 Litigation or Examinations and the Payment of Additional Taxes, Penalties or Interest.

Citi is subject to various income-based tax laws of the U.S. and its states and municipalities, as well as the numerous non-U.S. jurisdictions in which it operates. These tax laws are inherently complex and Citi must make judgments and interpretations about the application of these laws, 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. For additional information on the litigation and examinations involving non-U.S. tax authorities, see Note 27 to the Consolidated Financial Statements.

A Deterioration in or Failure to Maintain Citi's Co-Branding or Private Label Credit Card Relationships, Including as a Result of Early Termination, 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 branded cards and 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. The five largest relationships across both businesses in *North America GCB* constituted an aggregate of approximately 9% of Citi's revenues in 2021 (for additional information, see *"Global Consumer Banking—North America GCB"* above). Citi's co-branding and private label agreements provide for shared economics between the parties and generally have a fixed term.

Over the last several years, a number of U.S. retailers have continued to experience declining sales due to the pandemic or otherwise, which has resulted in significant numbers of store closures and, in a number of cases, bankruptcies, as retailers attempt to cut costs and reorganize. 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 be negatively impacted by, among other things, the general economic environment; changes in consumer sentiment, spending patterns and credit card usage behaviors; a decline in sales and revenues, partner store closures, government imposed restrictions, reduced air and business travel, or other operational difficulties of the retailer or merchant; early termination due to a contractual breach or exercise of other early termination right; or other factors, including bankruptcies, liquidations, restructurings, consolidations or other similar events, whether due to the 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 early termination and bankruptcies or liquidations, could negatively impact the results of operations or financial condition of branded cards, retail services or Citi as a whole, including as a result of loss of revenues, increased expenses, higher cost of credit, impairment of purchased credit card relationships and contract-related intangibles or other losses (for information on Citi's credit card related intangibles generally, see Note 16 to the Consolidated Financial Statements).

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. The eight U.S. GSIBs, including Citi, filed their most recent resolution plans with the FRB and FDIC on July 1, 2021. 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.
Recent employment conditions have made the competition to hire and retain qualified employees significantly more challenging. 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 competition for talent recently has been particularly intense because of economic conditions associated with the pandemic. Also, the banking industry generally is subject to more comprehensive regulation of employee compensation than other industries, including deferral and clawback requirements for incentive compensation, which can make it unusually challenging for Citi to compete in labor markets against businesses that are not subject to such regulation. Citi often competes for talent with such businesses, including, among others, technology companies. Further, Citi's vaccination requirement for its U.S.-based employees could make it more difficult to compete for or retain colleagues. Other factors that could impact its ability to attract, retain and motivate colleagues include, among other things, Citi's presence in a particular market or region, the professional opportunities it offers and its reputation. For information on Citi's colleagues and workforce management, see "Human Capital Resources and Management" below.

Financial Services Companies and Others as well as Emerging Technologies Pose Increasingly Competitive Challenges to Citi.
Citi operates in an increasingly evolving and competitive business environment, which includes both financial and non-financial services firms, such as traditional banks, online banks, financial technology companies and others. These companies compete on the basis of, among other factors, size, reach, quality and type of products and services offered, price, technology and reputation. Certain competitors may be subject to different and, in some cases, less stringent legal and regulatory requirements, placing Citi at a competitive disadvantage.

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.

Moreover, emerging technologies have the potential to intensify competition and accelerate disruption in the financial services industry. For example, there is increasing interest from clients and investors in digital assets such as cryptocurrencies. Financial services firms and other market participants have begun to offer services related to those assets such as custody and trading. However, Citi may not be able to provide the same or similar services for legal or regulatory reasons and such services increase compliance risk. In addition, changes in the payments space (e.g., instant and 24x7 payments) are accelerating, and, as a result, certain of Citi's products and services could become less competitive.

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

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

OPERATIONAL RISKS

A Failure 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 its technology, including the accurate, timely and secure processing, management, storage and transmission of confidential transactions, data and other information as well as the monitoring of a substantial amount of data and complex transactions in real time. 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 pandemic-related risk factor above and the cybersecurity risk factor below).

Although Citi has continued to upgrade its technology, including systems to automate processes and enhance efficiencies, operational incidents are unpredictable and can arise from numerous sources, not all of which are fully within Citi's control. These include, among others, human error, such as manual transaction processing errors; 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 (see also the climate change risk factor below). For example, Citi has experienced and could experience further losses associated with manual transaction processing errors (for additional information, see "Revlon-Related Wire Transfer Litigation" in Note 27 to the Consolidated Financial Statements).

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; the fair values of certain assets and liabilities; and the assessment of goodwill or other assets 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 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, U.S. unemployment rate and U.S. Real GDP, and the credit indicators, composition and other characteristics of Citi's loan and other applicable financial assets. 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 and financial condition, as well as regulatory capital due to the CECL phase-in beginning January 1, 2022.

Moreover, Citi has incurred losses related to its foreign operations that are reported in the CTA components of *Accumulated other comprehensive income (loss) (AOCI)*. In accordance with U.S. GAAP, a sale, substantial liquidation or any other deconsolidation event of any foreign operations, such as those related to Citi's legacy or exit businesses, would result in reclassification of any foreign CTA component of *AOCI* related to that foreign operation, including related hedges and taxes, into Citi's earnings. For example, Citi incurred a pretax loss of approximately $680 million ($580 million after-tax) in the third quarter of 2021 related to the sale of Citi's Australia consumer banking business in *Asia GCB*, primarily reflecting the impact of a CTA loss. For additional information on Citi's accounting policy for foreign currency translation and its foreign CTA components of *AOCI*, see Notes 1 and 19 to the Consolidated Financial Statements. For additional information on the key areas for which assumptions and estimates are used in preparing Citi's financial statements, including those related to Citi's ACL, see "Significant Accounting Policies and Significant Estimates" below and Notes 1 and 27 to the Consolidated Financial Statements.

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. For additional information on Citi's accounting policies and changes in accounting, including the expected impacts on Citi's results of operations and financial condition, see Note 1 to the Consolidated Financial Statements.

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 use of models in enacting processes and strategies as well as in analyzing and monitoring the various risks Citi assumes in conducting its activities. For example, Citi uses models as part of its comprehensive stress testing initiatives across the Company. Citi also relies on data to aggregate, assess and manage various risk exposures. Management of these risks is made 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 unintentionally from untimely, inaccurate or incomplete processes.

In addition, in October 2020, Citigroup and Citibank entered into consent orders with the FRB and OCC that require Citigroup and Citibank to make improvements in various aspects of enterprise-wide risk management, compliance, data quality management and governance and internal controls (see "Citi's Consent Order Compliance" above and 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 *ICG* and *GCB*. 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 $271 billion and end-of-period corporate loans of $397 billion at year-end 2021.

A default by a borrower or other counterparty, or a decline in the credit quality or value of any underlying collateral, exposes Citi to credit risk. Despite Citi's target client strategy, various macroeconomic, geopolitical and other factors, among other things, can increase Citi's credit risk and credit costs, particularly for certain sectors, industries or countries (for additional information, see the pandemic-related, co-branding and private label credit card and macroeconomic challenges and uncertainties risk factors above and the emerging markets risk factor below). For example, a weakening of economic conditions, including higher unemployment levels, can adversely affect borrowers' ability to repay their obligations. In addition, weakening economic conditions may result in Citi being unable to liquidate its collateral, as well as disputes with counterparties regarding the valuation of collateral Citi holds and Citi being unable to realize the fair value of such collateral.

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 portfolio balances 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 2022 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. For additional information on Citi's ACL, see "Significant Accounting Policies and Significant Estimates" below and Notes 1 and 15 to the Consolidated Financial Statements. For additional information on Citi's credit and country risk, see each respective business's results of operations above and "Managing Global Risk—Credit Risk" and "Managing Global Risk—Other Risks—Country Risk" below and Notes 14 and 15 to the Consolidated Financial Statements.

Concentrations of risk to clients or counterparties engaged in the same or related industries or doing business in a particular geography, especially credit and market risks, can also increase Citi's risk of significant losses. As of year-end 2021, 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 (for additional information, including concentrations of credit risk to other public sector entities, see Note 23 to the Consolidated Financial Statements). 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 (for additional information about these exposures, see Note 26 to the Consolidated Financial Statements). A rapid deterioration of a large borrower or other counterparty or within a sector or country in which Citi has large exposures or indemnifications or unexpected market dislocations could 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 both institutional and consumer deposits, which represent Citi's most stable and lowest cost source of long-term funding. The competition for deposits has continued to increase in recent years, including, among others, as a result of online banks and digital banking. Furthermore, although Citi 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 monetarily accommodative environment.

Moreover, Citi's costs to obtain and access secured funding and long-term unsecured funding are directly related to its credit spreads and changes in interest and currency exchange rates. Changes in credit spreads are driven by both external market factors and factors specific to Citi, such as negative views by investors of the financial services industry or Citi's financial prospects, and can be highly volatile. 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 and its cost of funding could increase 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.

In addition, 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 liquidity, regulatory or contractual restrictions on their ability to provide such payments, including any local regulatory stress test requirements. Citi's broker-dealer and bank subsidiaries are subject to restrictions on their ability to lend or transact with affiliates, as well as restrictions on their ability to use funds deposited with them in brokerage or bank accounts to fund their businesses. Limitations on the payments that Citi receives from its subsidiaries could also impact its liquidity. A bank holding company is

required by law to act as a source of financial and managerial strength for its subsidiary banks. As a result, the FRB may require Citi to commit resources to its subsidiary banks even if doing so is not otherwise in the interests of Citi or its shareholders or creditors, reducing the amount of funds available to meet its obligations. In addition, in the event of a subsidiary's liquidation or reorganization, Citi's right to participate in a distribution of such subsidiary's assets is subject to the prior claims of the subsidiary's creditors.

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 Global Ratings, 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. For additional information on the potential impact of a reduction in Citi's or Citibank's credit ratings, see "Managing Global Risk—Liquidity Risk" below.

COMPLIANCE RISKS

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

Citi is continually required to interpret and implement extensive and frequently changing regulatory and legislative requirements in the U.S. and other jurisdictions in which it does business, resulting in substantial compliance, regulatory and other risks and costs. In addition, there are heightened regulatory scrutiny and expectations in the U.S. and globally for large financial institutions, as well as their employees and agents, with respect to governance, infrastructure, data and risk management practices and controls. These requirements and expectations also include, among other things, those related to customer and client protection, market practices, anti-money laundering and sanctions. 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 for compliance.

Examples of regulatory or legislative changes that have resulted in increased compliance risks and costs include (i) various laws relating to the limitation of cross-border data movement and/or collection and use of customer information, including data localization and protection and privacy laws, which also can conflict with or increase compliance complexity with respect to other laws, including anti-money laundering laws; (ii) the FRB's "total loss absorbing capacity" (TLAC) requirements; and (iii) the U.S. banking agencies' regulatory capital rules and requirements, which have continued to evolve (for additional information, see the capital return risk factor and "Capital Resources" above). In addition, the U.S. banking agencies have prioritized issues of social, economic and racial justice, and are in the process of considering ways in which these issues can be mitigated, including through rulemaking, supervision and other means.

Increased and ongoing compliance and regulatory requirements, uncertainties, scrutiny and expectations 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. 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 October 2020 FRB and OCC consent orders require Citigroup and Citibank to implement targeted action plans and quarterly progress reports detailing the results and status of improvements relating principally to various aspects of enterprise-wide risk management, compliance, data quality management and governance and internal controls. These improvements will result in continued significant investments by Citi during 2022 and beyond, 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 OCC consent order requires Citibank to obtain prior approval of any significant new acquisition, including any portfolio or business acquisition, excluding ordinary course transactions. Moreover, the OCC consent order provides that the OCC has the right to assess future civil money penalties or take other supervisory and/or enforcement actions, 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 FRB could take additional enforcement or other actions if the regulatory agency believes that Citi has not met regulatory expectations regarding compliance with the consent orders. For additional information regarding the consent orders, see "Citi's Consent Order Compliance" above.

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 non-U.S. governmental entities have increasingly brought criminal actions against, or have sought criminal convictions from, financial institutions and individual employees, and criminal prosecutors in the U.S. have increasingly sought and obtained criminal guilty pleas or deferred prosecution agreements against 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 (see the incorrect assumptions or estimates risk factor above). In addition, certain settlements are subject to court approval and may not be approved.

OTHER RISKS

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

During 2021, emerging markets revenues accounted for approximately 35% 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 or unavailability of hedges on foreign investments; foreign currency volatility, including devaluations, sovereign volatility, election outcomes, regulatory changes and political events; foreign exchange controls, including inability to access indirect foreign exchange mechanisms; macroeconomic volatility and disruptions, including with respect to commodity prices; 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, whether related to geopolitical conflicts or otherwise; 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. Among other things, Citi faces a risk of devaluation on its unhedged Argentine peso-denominated assets, which continue to increase (for further information on this and other risks, see "Managing Global Risk—Other Risks—Country Risk—Argentina" below).

Moreover, if the economic situation in an emerging markets country in which 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 (for further information, see "Managing Global Risk—Other Risks—Country Risk—Argentina" below).

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

Climate Change Could Have a Negative Impact on Citi's Results of Operations and Financial Condition.

Citi operates in countries, states and regions in which many of its businesses, and the activities of many of its customers and clients, are exposed to the adverse impacts of climate change, as well as uncertainties related to the transition to a low-carbon economy. Climate change presents both immediate and long-term risks to Citi and its customers and clients, with the risks expected to increase over time.

Climate risks can arise from both physical risks (those risks related to the physical effects of climate change) and transition risks (risks related to regulatory, compliance, technological, stakeholder and legal changes from a transition to a low-carbon economy). The physical and transition risks can manifest themselves differently across Citi's risk categories in the short, medium and long terms.

The physical risk from climate change could result from increased frequency and/or severity of adverse weather events. For example, adverse weather events could damage or destroy Citi's or its counterparties' properties and other assets and disrupt operations, making it more difficult for counterparties to repay their obligations, whether due to reduced profitability, asset devaluations or otherwise. These events could also increase the volatility in financial markets affecting Citi's trading businesses and increase its counterparty exposures and other financial risks, which may result in lower revenues and higher cost of credit.

Transition risks may arise from changes in regulations or market preferences toward a low-carbon economy, which in turn could have negative impacts on asset values, results of operations or the reputations of Citi and its customers and clients. For example, Citi's corporate credit exposures include oil and gas, power and other industries that may experience reduced demand for carbon-intensive products due to the transition to a low-carbon economy. Moreover, U.S. and non-U.S. banking regulators and others are increasingly focusing on the issue of climate risk at financial institutions, both directly and with respect to their clients. As an example, on December 16, 2021, the OCC requested feedback on draft principles designed to support the identification and management of climate-related financial risks at institutions with more than $100 billion in total consolidated assets.

Even as regulators begin to mandate additional disclosure of climate-related information by companies across sectors, there may continue to be a lack of information for more robust climate-related risk analyses. Third party exposures to climate-related risks and other data generally are limited in availability and variable in quality. Modeling capabilities to analyze climate-related risks and interconnections are improving but remain incomplete. Legislative or regulatory uncertainties and changes regarding climate-related risk management and disclosures are likely to result in higher regulatory, compliance, credit, reputational and other risks and costs (for additional information, see the ongoing regulatory and legislative uncertainties and changes risk factor above). In addition, Citi could face increased regulatory, reputational and legal scrutiny as a result of its climate risk, sustainability and other ESG related commitments.

For information on Citi's climate and other sustainability initiatives, see "Sustainability and Other ESG Matters" below. For additional information on Citi's management of climate risk, see "Managing Global Risk—Other Risks—Climate Risk" below.

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

For decades, LIBOR and other rates or indices deemed to be benchmarks have been widely used across financial products and markets globally. These benchmarks have been the subject of ongoing national and international regulatory scrutiny and reform, resulting in regulators generally expecting or requiring banks, including Citi, to cease entering into new contracts that reference USD LIBOR as a benchmark by December 31, 2021. The LIBOR administrator ceased publication of non-USD LIBOR and one-week and two-month USD LIBOR on a representative basis on December 31, 2021, with plans to cease publication of all other USD LIBOR tenors on June 30, 2023. As a result, Citi ceased entering into new contracts referencing USD LIBOR as of January 1, 2022, other than for limited purposes as permitted by regulatory guidance.

LIBOR and other benchmarks have been used in a substantial number of Citi's outstanding securities and products, including, among others, derivatives, corporate loans, commercial and residential mortgages, credit cards, securitized products and other structured securities. Despite ongoing actions to prepare for the transition away from LIBOR (see "Managing Global Risk—Other Risks—LIBOR Transition Risk" below), market participants, including Citi, may not be adequately prepared for uncertainties associated with these benchmarks' discontinuance or, as necessary, be able to successfully modify their outstanding contracts or products that reference these benchmarks. For example, the transition away from and discontinuance of LIBOR or any other benchmark rate presents various uncertainties and operational, legal, reputational or compliance, financial and other risks and challenges to holders of these contracts and products, as well as financial markets and institutions, including Citi. These include, among others, the pricing, liquidity, observability, value of, return on and market for financial instruments and contracts that reference LIBOR or any other benchmark rate.

While Citi has adopted alternative reference rates for new contracts to replace these outgoing benchmarks, in some instances, it is possible that the characteristics of these new rates may not be sufficiently similar to, or produce the economic equivalent of, the benchmark rates that they are intended to replace. Alternative reference rates, such as the Secured Overnight Financing Rate (SOFR), are calculated using components different from those used in the calculation of LIBOR and may fluctuate differently than, and not be representative of, LIBOR. In order to compensate for these differences, certain of Citi's financial instruments and commercial agreements allow for a benchmark replacement adjustment. However, there can be no assurance that any benchmark replacement adjustment will be sufficient to produce the economic equivalent of LIBOR, either at the benchmark replacement date or over the life of such instruments and agreements.

Further, investors, counterparties and other market participants may not consider the new alternative rates to be a suitable substitute or successor for all of the purposes for which these benchmarks have historically been used (including, without limitation, as a representation of the unsecured short-term funding costs of banks), which may, in turn, reduce their market acceptance. Any failure of the alternative rates to gain broad market acceptance could adversely affect market demand for Citi's products or securities linked to such alternative rates and thus market prices of such instruments. As part of its transition, Citi is relying or has relied on guidance provided by the accounting standard setters related to the transition away from LIBOR. In the event that such guidance is insufficient or otherwise unable to be implemented as intended, LIBOR transition could disrupt Citi's hedge accounting relationships and/or lead to increased costs in connection with determining whether contract amendments result in a modification or an extinguishment from an accounting perspective. Changes in observability of the alternative reference rates could impact the fair value hierarchy classification of financial instruments and contracts.

Moreover, the LIBOR transition presents challenges related to contractual mechanics of existing financial instruments and contracts that reference such benchmarks that mature after discontinuance of the relevant benchmark. Certain of these legacy instruments and contracts do not provide for fallbacks to alternative reference rates, which makes it unclear what the applicable future replacement benchmark rates and associated payments might be after the current benchmark's cessation. Citi may not be able to amend certain instruments and contracts due to an inability to obtain sufficient levels of consent from counterparties or security holders. Although this will depend on the precise contractual terms of the instrument, such consent requirements are often conditions of securities, such as floating rate notes.

Even if the instruments and contracts provide for a transition to an alternative reference rate, the new rate may, particularly in times of financial stress, significantly differ from the prior rates. As a result, Citi may need to consider proactively addressing 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. While statutory solutions have been enacted in certain jurisdictions to address these contractual concerns (for example, the State of New York and the EU), the availability and effectiveness of these statutory mechanisms to cover all impacted financial instruments and products to which Citi is a party is uncertain.

In addition, the transition away from and discontinuance of LIBOR and other benchmark rates have subjected financial institutions, including Citi, to heightened scrutiny from regulators. Failure to successfully transition away from LIBOR and other benchmark rates could result in adverse regulatory actions, disputes, including potential litigation involving holders of outstanding products and contracts that reference LIBOR, and other benchmark rates and reputational harm to Citi. Citi may also need to further invest in and develop internal systems and infrastructure to transition to alternative benchmark rates to manage its businesses and support its clients.

SUSTAINABILITY AND OTHER ESG MATTERS

Introduction

Citi has progressively developed its understanding of environmental, social and governance (ESG) issues for more than 20 years and has a demonstrated record of ESG progress, including participating in the creation and adoption of ESG-related principles and standards. This section summarizes some of Citi's key ESG initiatives, including its Sustainable Progress Strategy and net zero and Action for Racial Equity commitments.

In January 2022, Citi published its 2021 Task Force on Climate-Related Financial Disclosures (TCFD) Report to provide its stakeholders with information on Citi's continued progress to address climate risk and to fulfill its commitment to publish an initial net zero plan within one year of announcing the net zero commitment. This represents Citi's fourth TCFD Report.

For information regarding Citi's management of climate risk, see "Managing Global Risk—Other Risks—Climate Risk" below.

ESG and Climate-Related Governance

ESG Governance

Citi's Board of Directors (Board) provides oversight of Citi's management activities to ensure responsible business practices (for additional information, see "Managing Global Risk—Risk Governance" below). For example, the Nomination, Governance and Public Affairs Committee of the Board oversees many of Citi's ESG activities, including reviewing Citi's policies and programs for environmental and social sustainability, climate change, human rights, diversity and other ESG issues, as well as advising on engagement with external stakeholders.

The Risk Management Committee of the Board provides oversight of Citi's Independent Risk Management function and reviews Citi's risk policies and frameworks, including receiving climate risk-related updates.

In 2021, Citi formed a Global ESG Council consisting of senior members of its management in order to provide enhanced oversight of Citi's ESG goals and activities. In addition, a number of teams and senior managers contribute to the oversight of different areas such as sustainability; community investing; talent and diversity; ethics and business practices; and remuneration.

Climate Change Governance

Citi's oversight of climate risk has continued to evolve with its expanding climate commitments. In 2021, Citi established its ESG Council, expanded its Climate Risk team and enhanced its climate risk and net zero-related governance through creation of a Net Zero Task Force. The Task Force, led by Citi's Chief Sustainability Officer and including leaders from various business units, was established to support the development and launch of Citi's net zero plan.

Key ESG Initiatives

Sustainable Progress Strategy

Citi's Sustainable Progress Strategy is summarized in its Environmental and Social Policy Framework. The three pillars of the strategy each have climate-related elements and serve as the foundation for Citi's climate commitments.

- The first pillar, "Low-Carbon Transition," focuses on financing and facilitating low-carbon solutions and supporting Citi's clients in their decarbonization and transition strategies.
- The second pillar, "Climate Risk," focuses on Citi's efforts to measure, manage and reduce the climate risk and impact of its client portfolio. Areas of activity include, portfolio analysis and stakeholder engagement as well as enhancing TCFD implementation and disclosure.
- The third pillar, "Sustainable Operations," focuses on Citi's efforts to reduce the environmental footprint of its facilities and strengthen its sustainability culture. This includes minimizing the impact of its global operations through operational footprint goals and further integrates sustainable practices across all countries in which Citi operates.

Net Zero Emissions by 2050

In March 2021, Citi announced its commitment to achieving net zero greenhouse gas (GHG) emissions associated with its financing by 2050, and net zero GHG emissions for its operations by 2030; both are significant targets given the size and breadth of Citi's lending portfolios and businesses. Citi made this commitment as part of its ongoing work to reduce its climate impact and help address the challenges that climate change poses to the global economy and broader society. Citi's net zero commitment demonstrates how identifying, assessing and managing climate-related risks and opportunities remains a top business priority for Citi.

While many financial institutions, including Citi, face increasing public pressure to divest from carbon-intensive sectors, Citi believes it has an important role to play in advising and financing the transition to net zero, and it plans to work closely with clients in this effort. Citi recognizes that large-scale, rapid divestment could result in an abrupt and disorderly transition to a low-carbon economy, creating both economic and social upheaval on a global scale. Citi believes that an orderly, responsible and equitable transition, which accounts for the immediate economic needs of communities, workers, environmental justice and broader economic development concerns, is essential for the retention of political and social support to move to a low-carbon economy.

Citi's 2021 TCFD Report discusses its initial 2050 net zero plan, including 2030 emissions targets for its Energy and Power loan portfolios that were developed in line with the Net Zero Banking Alliance Guidelines for Climate Target Setting for Banks. Citi's net zero plan incorporates a twofold approach: (i) assessment of climate-related factors affecting its clients, and (ii) engagement to understand their transition opportunities.

Citi's net zero approach includes the following areas of activity:

- *Client Transition Assessment, Advisory and Finance*: Seek to understand clients' GHG emissions and work with them to develop their transition plans and advise on capacity building
- *Clean Tech Finance*: Support clients and expedite the commercialization and adoption of climate technology globally through transition and environmental finance as well as public-private partnerships
- *Public Policy Engagement*: Support enabling public policy and regulation in the U.S. and other countries, including through trade associations and other industry groups

- *Risk Management*: Assess climate risk exposure across Citi's lending portfolios and review client carbon reduction progress, with ongoing review and refining of Citi's ESRM Policy as needed
- *Portfolio Management*: Active portfolio management to align with net zero targets, including considerations of transition measures taken by clients

The 2050 net zero commitment includes the following framework, delineating the key areas required to achieve its commitment:

- *Calculate Emissions*: Calculate baseline financed emissions for each carbon-intensive sector
- *Transition Pathway*: Identify the appropriate climate scenario transition pathway
- *Target Setting*: Establish emissions reduction targets for 2030 and beyond
- *Implementation Strategy*: Engage with and assess clients to determine transition opportunities
- *External Engagement*: Solicit feedback from clients, investors and other stakeholders, as the work continues to evolve and the parties collectively define net zero for the banking sector

In 2021, Citi continued to expand its participation in the financial industry's net zero leadership initiatives. Citi is a member of key industry initiatives that enhance its understanding of climate-related issues, improve its access to data and promote efficient communication and coordination across various climate efforts. These initiatives include the Partnership for Carbon Accounting Financials, the Net Zero Banking Alliance and the Glasgow Financial Alliance for Net Zero.

Action for Racial Equity

Effectively responding to the needs of communities of color in the U.S. represents a strategic imperative for the private sector. A wide range of data and studies have found that many major gaps in economic opportunity, education, income, housing and wealth run along racial lines, particularly between Black and white households. These gaps have not only had implications for Black Americans and other people of color but the broader economy as well.

Accordingly, in September 2020, Citi and the Citi Foundation announced Action for Racial Equity to help provide greater access to banking and credit in communities of color, increase investment in Black-owned businesses, expand affordable housing and homeownership among Black Americans and advance anti-racist practices within Citi and across the financial services industry. As part of Action for Racial Equity, Citi and the Citi Foundation have invested more than $1 billion in strategic initiatives to help close the racial wealth gap and increase economic mobility in the U.S. Action for Racial Equity builds on Citi's longstanding focus on advancing financial inclusion and economic opportunity for communities of color in the U.S. and accelerates its efforts in a time of increased calls for racial equity and shifting population demographics in a changing economy.

In line with Citi's continued commitment to expand access to banking products and services that can help advance economic progress—especially for underbanked and unbanked communities—on February 24, 2022, Citi announced plans to eliminate overdraft fees, returned item fees and overdraft protection fees by mid 2022. In addition to eliminating these fees, Citi will continue to offer a robust suite of free overdraft protection services for its consumers. See Note 5 to the Consolidated Financial Statements for details of Citi's *Commissions and fees* revenues.

Additional Information

For additional information on Citi's environmental and social policies and priorities, see Citi's website at www.citigroup.com. Click on "About Us" and then "Environmental, Social and Governance." For information on Citi's ESG and Sustainability (including climate change) governance, see Citi's 2021 Annual Meeting Proxy Statement available at www.citigroup.com. Click on "Investors" and then "Annual Reports & Proxy Statements."

The 2021 TCFD Report and any other ESG-related reports and information included elsewhere on Citi's investor relations website are not incorporated by reference into, and do not form any part of this 2021 Annual Report on Form 10-K.

HUMAN CAPITAL RESOURCES AND MANAGEMENT

Attracting and retaining a highly qualified and motivated workforce is a strategic priority for Citi. Citi seeks to enhance the competitive strength of its workforce through the following efforts:

- Continuous innovation in recruiting, training, compensation, promotion and engagement of colleagues.
- Actively seeking and listening to diverse perspectives at all levels of the organization.
- Optimizing transparency concerning workforce goals, to promote accountability, credibility and effectiveness in achieving those goals.

Workforce Size and Distribution

As of December 31, 2021, Citi employed approximately 223,400 colleagues in nearly 100 countries. The Company's workforce is constantly evolving and developing, benefiting from a strong mix of internal and external hiring into new and existing positions. In 2021, Citi welcomed 46,907 new colleagues in addition to the roles filled by colleagues through internal mobility. The following table shows the geographic distribution of those colleagues by segment, region and gender:

Segment or business[1]	North America	EMEA	Latin America	Asia	Total[2]	Women	Men	Unspecified
Institutional Clients Group	19,029	18,096	7,909	25,458	70,492	44.1%	55.9%	—%
Global Consumer Banking	33,898	—	33,453	32,950	100,301	57.4	42.5	0.1
Corporate/Other	23,218	10,364	7,012	12,057	52,651	46.3	53.6	0.1
Total	76,145	28,460	48,374	70,465	223,444	50.6%	49.3%	0.1%

(1) Colleague distribution is based on assigned business and region, which may not reflect where the colleague physically resides.
(2) Part-time colleagues represented less than 1.5% of Citi's global workforce.

Board Oversight

Citi devotes substantial resources to managing its workforce, guided by a culture of accountability and excellence. Citigroup's Board of Directors (the Board) provides strategic oversight and direction to management regarding workforce policies and includes many members with experience in overseeing workforce issues.

In addition, the Board's Personnel and Compensation Committee regularly reviews management's achievements against human capital management goals, such as addressing representation of women and U.S. minorities in assistant vice president (AVP) to managing director (MD) levels, as well as talent recruitment and development initiatives.

The Board works with the Nomination, Governance and Public Affairs Committee to evaluate potential successors to the Chief Executive Officer (CEO). With respect to regular succession of the CEO and senior management, Citi's Board evaluates internal, and, when appropriate, external candidates. To find external candidates, Citi seeks input from members of the Board, senior management and recruiting firms. To develop internal candidates, Citi engages in a number of practices, formal and informal, designed to familiarize the Board with Citi's talent pool. The formal process involves an annual talent review conducted by senior management at which the Board studies the most promising members of senior management. The Board learns about each person's experience, skills, areas of expertise, accomplishments, goals and risk and control assessments. This review is conducted at a regularly scheduled Board meeting on an annual basis.

Diversity, Equity and Inclusion

Citigroup's Board is committed to ensuring that the Board and Citi's Executive Management Team (see "Managing Global Risk—Risk Governance" below) are composed of individuals whose backgrounds reflect the diversity represented by Citi's employees, customers and stakeholders. In addition, over the past several years, Citi has increased efforts to diversify its workforce, including, among other things, taking actions with respect to pay equity, representation goals and use of diverse slates in recruiting.

Pay Equity

Citi has focused on measuring and addressing pay equity within the organization:

- In 2018, Citi was the first major U.S. financial institution to publicly release the results of a pay equity review comparing its compensation of women to men and U.S. minorities to U.S. non-minorities. Since 2018, Citi has continued to be transparent about pay equity, including disclosing its unadjusted or "raw" pay gap for both women and U.S. minorities.
- Citi's 2021 pay equity review determined that, on an adjusted basis, women globally are paid on average more than 99% of what men are paid at Citi. In addition, the review determined there was no statistically significant difference in adjusted compensation between U.S. minorities and non-minorities. Following the review, appropriate pay adjustments were made as part of Citi's 2021 compensation cycle.

- Citi's 2021 raw gap analysis showed that the median pay for women globally is 74% of the median for men, similar to 2020, and up from 73% in 2019 and 71% in 2018. The median pay for U.S. minorities is more than 96% of the median for non-minorities, which is up from just under 94% in 2020, 94% in 2019 and 93% in 2018.

Representation Goals

Increasing the number of women globally and U.S. Black employees into senior AVP to MD levels will position Citi to further close the raw pay gap and increase the diversity of the Company. At the AVP to MD levels, Citi established representation goals of 40% for women globally and 8% for U.S. Black employees by the end of 2021. As of December 31, 2021, Citi exceeded its goals for AVP to MD levels for women globally (at 40.6%) and U.S. Black employees (at 8.1%).

Citi is the first major Wall Street bank to participate in Management Leadership for Tomorrow's Black Equity at Work Certification, to help measure internal progress toward Black equity in the workplace.

In addition, consistent with its ongoing support of measurement and transparency, Citi will conduct a third-party racial equity audit to help assess the true impact of Citi's Action for Racial Equity initiatives (for additional information, see "Sustainability and Other ESG Matters—Action for Racial Equity" above).

Diverse Slates in Recruitment

In 2021, Citi expanded the use of diverse slates in its recruiting efforts to have at least two women or U.S. minorities interview for U.S.-based roles and at least two women interview for global hire roles at the AVP to MD levels.

Since implementation, Citi has increased the share of diverse candidates on slates by 26% and more than doubled the total number of diverse slates between March and December 2021. Candidate slates were as follows:

- 74.4% of roles included a diverse slate with at least two women globally and/or U.S. underrepresented minorities for U.S. hires; and
- 92.2% of roles included a diverse slate with at least one woman globally and/or U.S. underrepresented minority for U.S. hires compared to 86% in 2020.

In 2021, women representation in Citi's full-time global campus programs surpassed its goal of 50%, increasing to 51% from 49% in 2020. In addition, Black and Hispanic/Latino representation within Citi's full-time U.S. campus programs increased to 28% from 24% in 2020.

Workforce Development

Citi highly values a workplace environment where colleagues can bring their authentic selves to work and where diverse perspectives and ideas are embraced. Citi encourages career growth and development by offering broad and diverse opportunities to colleagues. Highlights of these opportunities include the following:

- Citi provides a range of internal development and rotational programs to colleagues at all levels, including various training programs and events to assist high-performing colleagues in building the skills needed to transition to manager and supervisory roles.
- Citi has a focus on internal talent development and aims to provide colleagues with career growth opportunities, with 37% of open positions filled internally in 2021. These opportunities are particularly important as Citi focuses on providing career paths for its internal talent base as part of its efforts to increase organic growth and promotions within the organization.

Moreover, in 2021, a diverse group of human resources and business stakeholders collaborated to provide input on the current state and target future state for promotions at Citi. Their analysis resulted in the identification of opportunities for improvement to create greater transparency and alignment of the promotion process across Citi's businesses, functions and regions.

Wellness

During the past two years, the pandemic's impact has been substantial on the mental and physical health of Citi colleagues and their families. As the Company transforms and the future of work evolves, colleague wellness is a central component of Citi's focus. Coming out of the pandemic, Citi has announced three working models: colleagues will be designated as hybrid, resident or remote, based on job-specific requirements.

As colleagues pivoted to remote work during their respective country lockdowns, Citi's health plans also expanded to keep colleagues at home and safe. In the U.S., Citi offered free virtual care visits, home delivery of prescriptions, enhanced bereavement leave and no-cost COVID testing.

In addition to providing access to COVID vaccinations, which included several onsite locations in Asia and the U.S., Citi organized drive-through flu vaccination programs in the U.S. for thousands of colleagues and their family members. All colleagues globally were provided time off for vaccinations and boosters and to recover from any side effects, if needed.

To support the ongoing health of its workforce, on October 28, 2021 Citi announced a COVID-19 vaccination policy requiring all U.S. colleagues and new hires to be fully vaccinated or receive an approved accommodation or state-permitted exemption, as a condition of employment. As of the January 14, 2022 deadline, over 99% of U.S. colleagues were in compliance with the vaccine policy.

Citi also took actions to support the emotional well-being of its colleagues. Citi significantly enhanced free mental well-being programs in our largest region by doubling the number of free counseling sessions for colleagues and their family members and adding real-time text, video and message-based counseling. Citi also debuted a new online tool so that all colleagues around the globe could easily find their local Employee Assistance programs and resources. Citi also expanded live, town hall-style mental well-being programming to include targeted events with subject matter experts aimed at parents, caregivers and other at-risk groups.

Citi's wellness vision is not simply a reaction to its external environment. It has consistently been about nurturing colleagues and their families, however their families are grown. Citi continues to broaden gender affirmation medical coverage and incorporate it in its basic medical plan coverage around the world. Citi also enhanced its fertility coverage and support. In North America, Citi's new Adoption and Surrogacy Assistance Program provides reimbursement to help with certain expenses in the adoption of a child or surrogacy parenting arrangement.

In early 2020, Citi expanded its Paid Parental Leave Policy to include Citi colleagues around the world. At a minimum, all Citi colleagues are eligible for 16 weeks of paid pregnancy leave or four weeks of paid parental bonding leave. Colleagues working in countries that require leave policies above the global minimum continue to maintain even longer periods of paid time off.

For information about Citi's reliance on a highly qualified and motivated workforce, see "Risk Factors" above. For additional information about Citi's human capital management initiatives and goals, see Citi's upcoming 2022 proxy statement to be filed with the SEC in March 2022, as well as its 2020 ESG report available at www.citigroup.com. The 2020 ESG report and other information included elsewhere on Citi's investor relations website are not incorporated by reference into, and do not form any part of, this 2021 Annual Report on Form 10-K.

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(1) For additional information regarding certain credit risk, market risk and other quantitative and qualitative information, refer to Citi's Pillar 3 Basel III Advanced Approaches Disclosures, as required by the rules of the Federal Reserve Board, on Citi's Investor Relations website.

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 and the key principles that guide it, as well as Citi's risk appetite. As discussed above, Citi is continuing its efforts to comply with the FRB and OCC consent orders, relating principally to various aspects of risk management, compliance, data quality management and governance, and internal controls (see "Citi's Consent Order Compliance" and "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 Principles, 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 has established an Enterprise Risk Management (ERM) Framework to ensure that all of Citi's risks are managed appropriately and consistently across Citi and at an aggregate, enterprise-wide level. The ERM Framework details the principles used to support effective enterprise-wide risk management across the end-to-end risk management lifecycle. The ERM Framework also provides clarity on the expected activities in relation to risk management of the Citigroup Board of Directors (the Board), Citi's Executive Management Team (See "Risk Governance—Executive Management Team" below) and employees across the lines of defense. The underlying pillars of the framework encompass:

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

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

Citi's approach to risk management requires that its risk-taking be consistent with its risk appetite. Risk appetite is the aggregate type and level of risk Citi is willing to take in order to meet its strategic objectives and business plan. Citi's Risk Appetite Framework sets boundaries for risk-taking and consists of a set of risk appetite statements as well as the governance processes through which the risk appetite is established, communicated, cascaded and monitored.

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

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

Citi uses a lines of defense model as a key component of its ERM Framework to manage its risks. The lines of defense model brings together risk-taking, risk oversight and risk assurance under one umbrella and provides an avenue for risk accountability of first line of defense, a construct for effective challenge by the second line of defense (Independent Risk Management and Independent Compliance Risk Management), and empowers independent risk assurance by the third line of defense (Internal Audit). In addition, Citi has enterprise support functions that support safety and soundness across Citi. Each of the lines of defense and enterprise support functions, along with the Board, are empowered to perform relevant risk management processes and responsibilities in order to manage Citi's risks in a consistent and effective manner.

First Line of Defense: Front Line Units and Front Line Unit Activities

Citi's first line of defense owns the risks inherent in or arising from their business and is responsible for identifying, measuring, monitoring, controlling and reporting those risks consistent with Citi's strategy, Mission and Value Proposition, Leadership Principles and risk appetite.

Front line units are responsible and held accountable for managing the risks associated with their activities within the boundaries set by independent risk management. They are also responsible for designing and implementing effective internal controls and maintaining processes for managing their risk profile, including through risk mitigation, so that it remains consistent with Citi's established risk appetite.

Front line unit activities are considered part of the first line of defense and are subject to the oversight and challenge of independent risk management.

The first line of defense is composed of Citi's Business Management, Regional and Country Management, certain Corporate Functions (Enterprise Operations and Technology, Chief Administrative Office, Global Public Affairs, Office of the Citibank Chief Executive Officer (CEO) and Finance), as well as other front line unit activities. Front line units may also include enterprise support units and activities—see "Enterprise Support Functions" below.

Second Line of Defense: Independent Risk Management

Independent risk management units are independent of front line units. They are responsible for overseeing the risk-taking activities of the first line of defense and challenging the first line of defense in the execution of their risk management responsibilities. They are also responsible for independently identifying, measuring, monitoring, controlling and reporting aggregate risks and for setting standards for the management and oversight of risk. Independent risk management is comprised of Independent Risk Management (IRM) and Independent Compliance Risk Management (ICRM) and are led by chief risk executives (i.e., Chief Risk Officer (CRO) and Chief Compliance Officer (CCO)) who have unrestricted access to the Citigroup Board of Directors and its Risk Management Committee to facilitate the ability to execute their specific responsibilities pertaining to escalation to the Citigroup Board of Directors.

Independent Risk Management

The IRM organization sets risk and control standards for the first line of defense and actively manages and oversees aggregate credit, market (trading and non-trading), liquidity, strategic, operational and reputation risks across Citi, including risks that span categories, such as concentration risk, country risk and climate risk.

IRM is organized to align to risk categories, legal entities/regions and Company-wide, cross-risk functions or processes (i.e., foundational areas). There are teams that report to an independent CRO for various risk categories and legal entities/regions. In addition, there are foundational teams that report to Foundational Risk Management heads. The Risk Category, Legal Entity/Regional CROs and Foundational Risk Management Heads report to the Citigroup CRO.

Independent Compliance Risk Management

The ICRM organization actively oversees compliance risk across Citi, sets compliance risk and control standards for the first line of defense to manage compliance risk and promotes business conduct and activity that is consistent with Citi's Mission and Value Proposition and the compliance risk appetite. Citi's objective is to embed an enterprise-wide compliance risk management framework and culture that identifies, measures, monitors, controls and escalates compliance risk across Citi.

ICRM is aligned by product line, function and geography to provide compliance risk management advice and credible challenge on day-to-day matters and strategic decision-making for key initiatives. ICRM also has program-level Enterprise Compliance units responsible for setting standards and establishing priorities for program-related compliance efforts. These Compliance Risk Management heads report directly to the CCO.

Third Line of Defense: Internal Audit

Internal Audit is independent of front line units and independent risk management units. The role of Internal Audit is to provide independent, objective, reliable, valued and timely assurance to the Citigroup Board of Directors, its Audit Committee, Citi senior management and regulators over the effectiveness of governance, risk management and controls that mitigate current and evolving risks and enhance the control culture within Citi. Internal Audit reports to a chief audit executive (i.e., Citi's Chief Auditor) who has unrestricted access to the Board and the board of directors of certain subsidiaries or their respective audit committees to facilitate the ability to execute specific responsibilities pertaining to escalation of risks and issues. The Internal Audit function has designated Chief Auditors responsible for assessing the design and effectiveness of controls within the various business units, functions, geographies and legal entities in which Citi operates.

Enterprise Support Functions

Enterprise support functions engage in activities that support safety and soundness across Citi. These functions provide advisory services and/or design, implement, maintain and oversee Company-wide programs that support Citi in maintaining an effective control environment.

Enterprise support functions are comprised of Human Resources, International Franchise Management, Legal (including Citi Security and Investigative Services).

Enterprise support functions, units and activities are subject to the relevant Company-wide independent oversight processes specific to the risk category that they generate (e.g., operational risk, compliance risk, reputation risk).

Risk Governance

Citi's ERM Framework encompasses risk management processes to address risks undertaken by Citi through identification, measurement, monitoring, controlling and reporting of all risks. The ERM Framework integrates these processes with appropriate governance to complement Citi's commitment to maintaining strong and consistent risk management practices.

Board Oversight

The Board is responsible for oversight of risk management and holds the Executive Management Team accountable for implementing the ERM Framework and meeting strategic objectives within Citi's risk appetite.

Executive Management Team

The Board delegates authority to an Executive Management Team for directing and overseeing day-to-day management of Citi. The Executive Management Team is led by the Citigroup CEO and provides oversight of group activities, both directly and through authority delegated to committees it has established to oversee the management of risk, to ensure continued alignment with Citi's strategy and risk appetite.

Board and Executive Management Committees

The Board executes its responsibilities either directly or through its committees. The Board has delegated authorities to the following Board standing committees to help fulfill its oversight and risk management responsibilities:

- *Risk Management Committee (RMC)*: assists the Board in fulfilling its responsibility with respect to (i) oversight of Citi's risk management framework, including the significant policies and practices used in managing credit, market, liquidity, strategic, operational, compliance, reputation and certain other risks, including those pertaining to capital management, and (ii) performance oversight of the Global Risk Review—credit, capital and collateral review functions.
- *Audit Committee*: provides oversight of Citi's financial reporting and internal control risk, as well as Internal Audit and Citi's external independent accountants.
- *Personnel and Compensation Committee*: provides oversight of incentive compensation plans and risk related to compensation.
- *Ethics, Conduct and Culture Committee*: provides oversight of Citi's Conduct Risk Management Program.
- *Nomination, Governance and Public Affairs Committee*: provides oversight of reputational issues, Environmental, Social and Governance (ESG) and sustainability matters, and legal and regulatory compliance risks as they relate to corporate governance matters.

In addition to the above, the Board has established the following ad hoc committee:

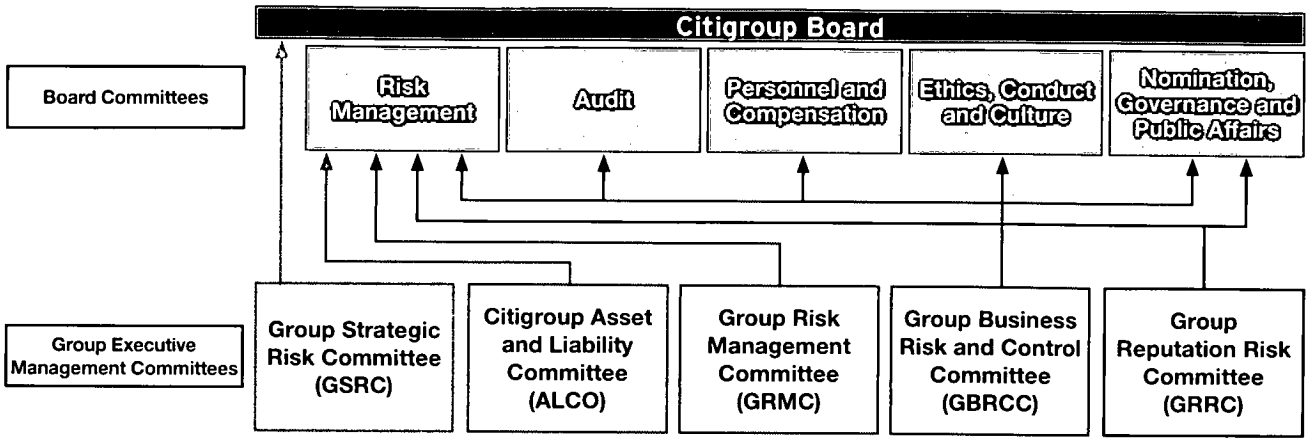
- *Transformation Oversight Committee*: provides oversight of the actions of Citi's management to develop and execute a transformation of Citi's risk and control environment pursuant to the recent regulatory consent orders (for additional information see "Citi's Consent Order Compliance" above).

The Executive Management Team has established five standing committees that cover the primary risks to which Citi (i.e., Group) is exposed. These consist of:

- *Group Strategic Risk Committee (GSRC)*: provides governance oversight of Citi's management actions to adequately identify, monitor, report, manage and escalate all material strategic risks facing Citi.
- *Citigroup Asset and Liability Committee (ALCO)*: responsible for governance over management's Liquidity Risk and Market Risk (non-trading) management and for monitoring and influencing the balance sheet, investment securities and capital management activities of Citigroup.
- *Group Risk Management Committee (GRMC)*: provides governance oversight of Credit Risk and Market Risk (trading) management in the Trading Book.
- *Group Business Risk and Control Committee (GBRCC)*: provides governance oversight of Citi's Compliance and Operational Risks.
- *Group Reputation Risk Committee (GRRC)*: provides governance oversight for Reputation Risk management across Citi.

In addition to the Executive Management committees listed above, the Board may establish ad-hoc committees in response to regulatory feedback or to manage additional activities where deemed necessary.

The figure below illustrates the reporting lines between the Board and Executive Management committees:



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 an established framework in place for managing credit risk across all businesses that includes a defined risk appetite, credit limits and credit policies. Citi's credit risk management 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 Allowance for Credit Losses (ACL) process (see "Significant Accounting Policies and Significant Estimates—Allowance for Credit Losses" below and Notes 1 and 15 to the Consolidated Financial Statements), 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. For additional information on Citi's credit risk management, see Note 14 to the Consolidated Financial Statements.

CONSUMER CREDIT

Citi fulfills a broad spectrum of customers' financial needs with activities spanning retail banking, wealth management, credit card, personal loan, mortgage and small business banking through *North America GCB*. During 2021, Citi also provided such activities in 18 countries in *Latin America GCB* and *Asia GCB* (for information on Citi's consumer market exits in *Latin America GCB* and *Asia GCB*, see "Strategic Refresh—Market Exits and Planned Revision to Reporting Structure" above). The retail banking products include consumer mortgages, home equity, personal and small business loans and lines of credit and similar related products building a generally prime portfolio through well-defined lending parameters. Citi uses its risk appetite framework to define its lending parameters.

Consumer Credit Portfolio

The following table shows Citi's quarterly end-of-period consumer loans:[1]

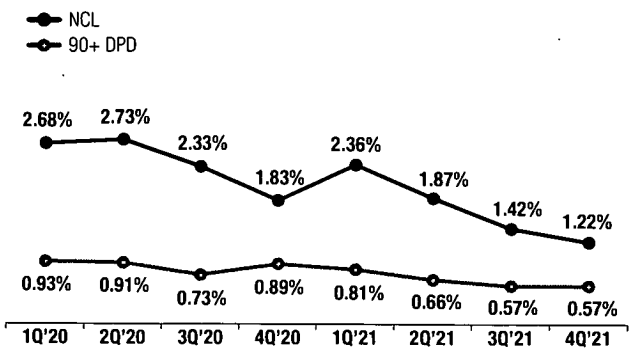
In billions of dollars	4Q'20	1Q'21	2Q'21	3Q'21[2]	**4Q'21[2]**
Retail banking:					
Mortgages	$ 88.9	$ 86.7	$ 86.3	$ 79.8	**$ 79.5**
Personal, small business and other	40.1	39.1	39.0	37.0	**36.1**
Total retail banking	$129.0	$125.8	$125.3	$116.8	**$115.6**
Cards:					
Branded cards	$106.7	$ 99.6	$102.9	$100.6	**$105.7**
Retail services	46.4	42.5	42.7	42.7	**46.0**
Total cards	$153.1	$142.1	$145.6	$143.3	**$151.7**
Total *GCB*	$282.1	$267.9	$270.9	$260.1	**$267.3**
***GCB* regional distribution:**					
North America	65%	64%	64%	67%	**68%**
Latin America	5	5	5	5	**5**
Asia[3]	30	31	31	28	**27**
Total *GCB*	100%	100%	100%	100%	**100%**
***Corporate/Other*[4]**	$ 6.7	$ 6.1	$ 5.0	$. 4.2	**$ 3.9**
Total consumer loans	$288.8	$274.0	$275.9	$264.3	**$271.2**

(1) End-of-period loans include interest and fees on credit cards.
(2) As a result of Citi's entry into agreements to sell its consumer banking businesses in Australia and the Philippines, the businesses were reclassified as held-for-sale and their assets and liabilities were included in *Other assets* and *Other liabilities*, respectively, on Citi's Consolidated Balance Sheet and excluded from loans and related credit measures, of *GCB* and *Asia GCB* beginning in the third quarter of 2021 for Australia and the fourth quarter of 2021 for the Philippines. For additional information, see Note 2 to the Consolidated Financial Statements.
(3) *Asia* includes loans and leases in certain *EMEA* countries for all periods presented.
(4) Primarily consists of legacy assets, principally *North America* consumer mortgages.

For information on changes to Citi's consumer loans, see "Liquidity Risk—Loans" below.

Overall Consumer Credit Trends

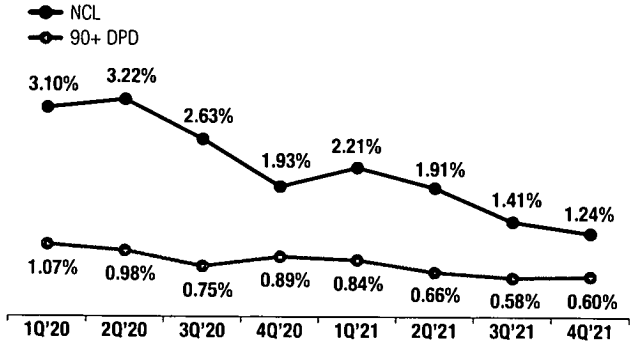
Global Consumer Banking



As shown in the chart above, *GCB*'s net credit loss rate decreased quarter-over-quarter and year-over-year for the fourth quarter of 2021, primarily reflecting the continued impact of government stimulus, unemployment benefits and consumer relief programs in *North America GCB*, and a decline following the peak charge-offs in *Asia GCB* and *Latin America GCB* in recent quarters.

GCB's 90+ days past due delinquency rate remained unchanged quarter-over-quarter. The 90+days past due delinquency rate decreased year-over-year, primarily due to the continued impacts of government stimulus, unemployment benefits and consumer relief programs in *North America GCB*, as well as lower delinquencies in *Asia GCB* and *Latin America GCB*, following the charge-off of peak delinquencies in recent quarters.

North America GCB



North America GCB provides mortgage, home equity, small business and personal loans through Citi's retail banking network and card products through branded cards and retail services businesses. The retail bank is concentrated in six major metropolitan cities in the U.S. (for additional information on the U.S. retail bank, see "*North America GCB*" above).

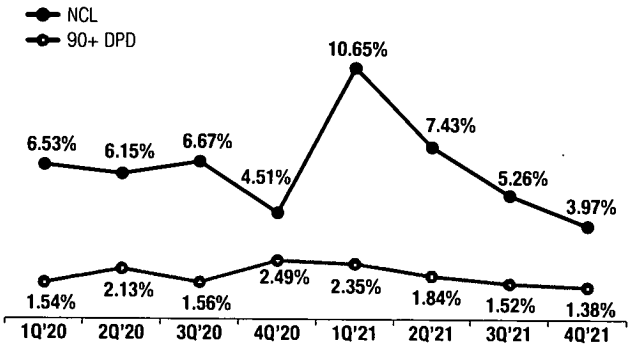
As of December 31, 2021, approximately 74% of *North America GCB* consumer loans consisted of branded and retail services cards, which generally drives the overall credit performance of *North America GCB* (for additional information on *North America GCB*'s cards portfolios, including delinquency and net credit loss rates, see "Credit Card Trends" below).

As shown in the chart above, the net credit loss rate in *North America GCB* for the fourth quarter of 2021 decreased quarter-over-quarter and year-over-year, primarily reflecting the continued impact of high payment rates in cards, driven by government stimulus.

Year-over-year, the payment rates were also impacted by unemployment benefits and consumer relief programs.

The 90+ days past due delinquency rate in *North America GCB* increased modestly quarter-over-quarter, primarily due to seasonality in cards, while the 90+ days past due delinquency rate decreased year-over-year, primarily reflecting the continued impact of high payment rates in cards, driven by government stimulus.

Latin America GCB

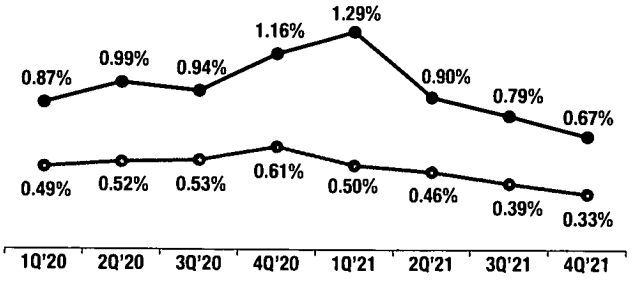


Latin America GCB operates in Mexico through Citibanamex and provides credit cards, consumer mortgages and small business and personal loans. *Latin America GCB* serves a more mass-market segment in Mexico and focuses on developing multiproduct relationships with customers.

As shown in the chart above, the net credit loss rate in *Latin America GCB* for the fourth quarter of 2021 decreased quarter-over-quarter and year-over-year. The impact of charge-offs of delinquent loans in prior quarters resulted in lower delinquencies that led to lower net credit losses in the current quarter.

The 90+ days past due delinquency rate decreased quarter-over-quarter and year-over-year. The impact of charge-offs of delinquent loans in prior quarters and higher payment rates resulted in a lower 90+ days past due delinquency rate in the current quarter.

Asia [1] GCB



(1) *Asia* includes *GCB* activities in certain *EMEA* countries for all periods presented.

During 2021, *Asia GCB* operated in 17 countries and jurisdictions in *Asia* and *EMEA* and provided credit cards, consumer mortgages and small business and personal loans.

As shown in the chart above, the fourth quarter of 2021 net credit loss rate in *Asia GCB* decreased quarter-over-quarter, driven by the charge-off of peak delinquencies in recent quarters. Year-over-year, the net credit loss rate decreased, as elevated losses during the prior year returned to pre-pandemic levels. The decrease was also driven by the reclassification of approximately $10 billion of loans to held-for-sale as a result of Citi's entry into agreements to sell its consumer banking businesses in Australia and the Philippines (*Asia* HFS reclass).

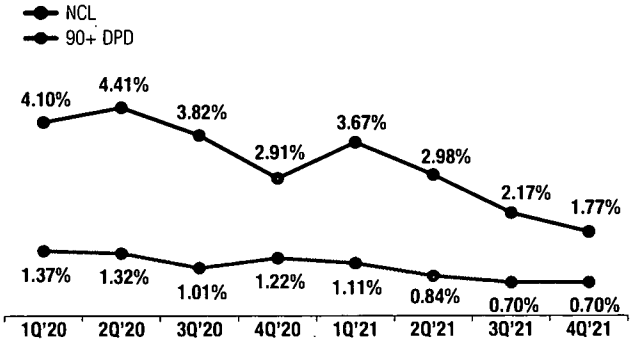
The 90+ days past due delinquency rate decreased quarter-over-quarter and year-over-year, driven by the charge-off of peak delinquencies in recent quarters, as elevated losses returned to pre-pandemic levels, as well as the impact of the *Asia* HFS reclass.

The performance of *Asia GCB*'s portfolios continues to reflect the strong credit profiles in the region's target customer segments. Regulatory changes in many markets in *Asia* over the past few years have also resulted in improved credit quality.

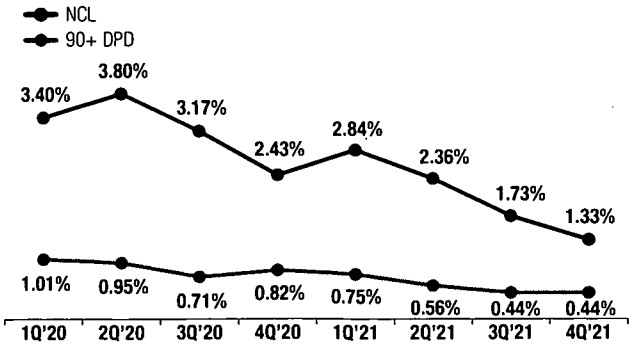
For additional information on cost of credit, loan delinquency and other information for Citi's consumer loan portfolios, see each respective business's results of operations above and Notes 13 and 14 to the Consolidated Financial Statements.

Credit Card Trends

Global Cards



North America Branded Cards

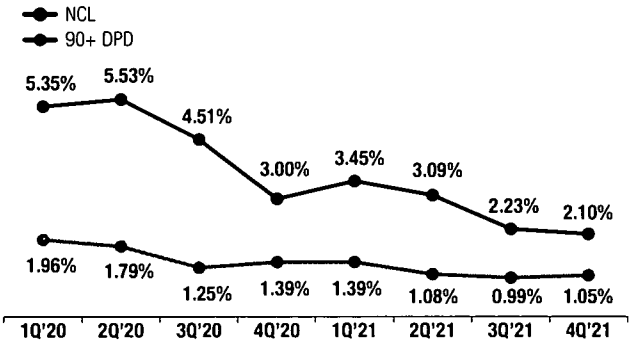


North America GCB's branded cards portfolio includes proprietary and co-branded cards.

As shown in the chart above, the net credit loss rate in *North America* branded cards for the fourth quarter of 2021 decreased quarter-over-quarter and year-over-year, primarily reflecting the continued impact of high payment rates, driven by government stimulus. Year-over-year, the payment rates were also impacted by unemployment benefits and consumer relief programs.

The 90+ days past due delinquency rate remained unchanged quarter-over-quarter and decreased year-over-year, primarily reflecting the continued impact of high payment rates, driven by government stimulus. Year-over-year, the payment rates were also impacted by unemployment benefits and consumer relief programs.

North America Retail Services



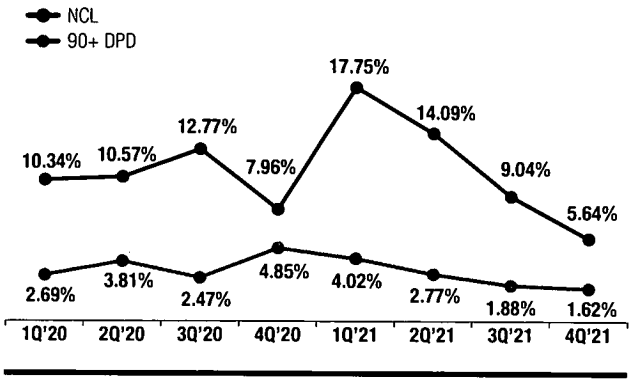
Retail services partners directly with more than 20 retailers and dealers to offer private label and co-branded cards. Retail services' target market focuses on select industry segments such as home improvement, specialty retail, consumer electronics and fuel.

Retail services continually evaluates opportunities to add partners within target industries that have strong loyalty, lending or payment programs and growth potential.

As shown in the chart above, the net credit loss rate in retail services for the fourth quarter of 2021 decreased quarter-over-quarter and year-over-year, primarily reflecting the continued impact of high payment rates, driven by government stimulus. Year-over-year, the payment rates were also impacted by unemployment benefits and consumer relief programs.

The 90+ days past due delinquency rate increased quarter-over-quarter due to seasonality, and decreased year-over-year, primarily reflecting the continued impact of high payment rates, driven by government stimulus. Year-over-year, the payment rates were also impacted by unemployment benefits and consumer relief programs.

Latin America Branded Cards

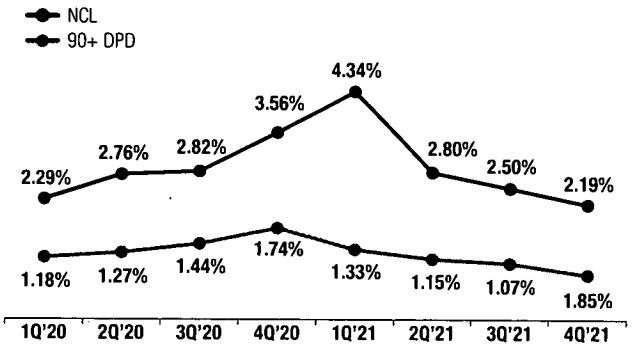


Latin America GCB issues proprietary and co-branded cards.

As shown in the chart above, the fourth quarter of 2021 net credit loss rate in *Latin America* branded cards decreased quarter-over-quarter and year-over-year. The impact of charge-offs of delinquent loans in prior quarters resulted in lower delinquencies that led to lower net credit losses in the current quarter.

The 90+ days past due delinquency rate decreased quarter-over-quarter and year-over-year. The impact of charge-offs of delinquent loans in prior quarters and higher payment rates resulted in a lower 90+ days past due delinquency rate.

Asia Branded Cards (1)



(1) *Asia* includes loans and leases in certain *EMEA* countries for all periods presented.

As shown in the chart above, the net credit loss rate in *Asia* branded cards for the fourth quarter of 2021 decreased quarter-over-quarter and year-over-year, driven by the charge-off of peak delinquencies in recent quarters, as elevated losses returned to pre-pandemic levels, as well as the impact of the *Asia* HFS reclass.

The 90+ days past due delinquency rate decreased quarter-over-quarter and year-over-year, driven by the charge-off of peak delinquencies in recent quarters, as elevated losses returned to pre-pandemic levels, as well as the *Asia* HFS reclass.

For additional information on cost of credit, delinquency and other information for Citi's cards portfolios, see each respective business's results of operations above and Note 14 to the Consolidated Financial Statements.

North America Cards FICO Distribution

The following tables show the current FICO score distributions for Citi's *North America* cards portfolios based on end-of-period receivables. FICO scores are updated monthly for a substantial share of the portfolio and quarterly for the remaining portfolio.

Branded Cards

FICO distribution(1)	Dec. 31, 2021	Sept. 30, 2021	Dec. 31, 2020
> 760	**49%**	48%	46%
680–760	**38**	39	39
< 680	**13**	13	15
Total	**100%**	100%	100%

Retail Services

FICO distribution(1)	Dec. 31, 2021	Sept. 30, 2021	Dec. 31, 2020
> 760	**28%**	27%	27%
680–760	**44**	45	44
< 680	**28**	28	29
Total	**100%**	100%	100%

(1) The FICO bands in the tables are consistent with general industry peer presentations.

The FICO distribution of both cards portfolios remained largely stable compared to the prior quarter and improved compared to the prior year, demonstrating strong underlying credit quality and a benefit from the impacts of government stimulus, unemployment benefits and customer relief programs, as well as lower credit utilization. For additional information on FICO scores, see Note 14 to the Consolidated Financial Statements.

Additional Consumer Credit Details

Consumer Loan Delinquencies Amounts and Ratios

In millions of dollars, except EOP loan amounts in billions	EOP loans[1] December 31, 2021	90+ days past due[2] December 31, 2021	2020	2019	30–89 days past due[2] December 31, 2021	2020	2019
Global Consumer Banking[3][4]							
Total	**$267.3**	**$ 1,521**	$ 2,507	$ 2,737	**$ 1,661**	$ 2,517	$ 3,001
Ratio		**0.57%**	0.89%	0.91%	**0.62%**	0.89%	1.00%
Retail banking							
Total	**$115.6**	**$ 462**	$ 632	$ 438	**$ 522**	$ 860	$ 816
Ratio		**0.40%**	0.49%	0.35%	**0.45%**	0.67%	0.66%
North America	**48.1**	**228**	299	146	**219**	328	334
Ratio		**0.49%**	0.58%	0.29%	**0.47%**	0.63%	0.67%
Latin America	**8.6**	**107**	130	106	**106**	220	180
Ratio		**1.24%**	1.33%	0.91%	**1.23%**	2.24%	1.54%
Asia[5][6]	**58.9**	**127**	203	186	**197**	312	302
Ratio		**0.22%**	0.31%	0.30%	**0.33%**	0.47%	0.48%
Cards							
Total	**$151.7**	**$ 1,059**	$ 1,875	$ 2,299	**$ 1,139**	$ 1,657	$ 2,185
Ratio		**0.70%**	1.22%	1.31%	**0.75%**	1.08%	1.25%
North America—branded	**87.9**	**389**	686	915	**408**	589	814
Ratio		**0.44%**	0.82%	0.95%	**0.46%**	0.70%	0.85%
North America—retail services	**46.0**	**482**	644	1,012	**539**	639	945
Ratio		**1.05%**	1.39%	1.91%	**1.17%**	1.38%	1.79%
Latin America	**4.7**	**76**	233	165	**67**	170	159
Ratio		**1.62%**	4.85%	2.75%	**1.43%**	3.54%	2.65%
Asia[5][6]	**13.1**	**112**	312	207	**125**	259	267
Ratio		**0.85%**	1.74%	1.04%	**0.95%**	1.45%	1.34%
***Corporate/Other*—Consumer**[7]							
Total	**$ 3.9**	**$ 221**	$ 313	$ 278	**$ 88**	$ 179	$ 295
Ratio		**6.14%**	5.13%	3.02%	**2.44%**	2.93%	3.21%
Total Citigroup	**$271.2**	**$ 1,742**	$ 2,820	$ 3,015	**$ 1,749**	$ 2,696	$ 3,296
Ratio		**0.65%**	0.98%	0.98%	**0.65%**	0.94%	1.07%

(1) End-of-period (EOP) loans include interest and fees on credit cards.

(2) The ratios of 90+ days past due and 30–89 days past due are calculated based on EOP loans, net of unearned income.

(3) The 90+ days past due balances for *North America*—branded and *North America*—retail services are generally still accruing interest. Citigroup's policy is generally to accrue interest on credit card loans until 180 days past due, unless notification of bankruptcy filing has been received earlier.

(4) The 90+ days past due and 30–89 days past due and related ratios for *North America GCB* exclude loans guaranteed by U.S. government-sponsored agencies since the potential loss predominantly resides with the U.S. government-sponsored agencies. The amounts excluded for loans 90+ days past due and (EOP loans) were $185 million ($1.1 billion), $171 million ($0.7 billion) and $135 million ($0.5 billion) at December 31, 2021, 2020 and 2019, respectively. The amounts excluded for loans 30–89 days past due (the 30–89 days past due EOP loans have the same adjustments as the 90+ days past due EOP loans) were $74 million, $98 million and $72 million at December 31, 2021, 2020 and 2019, respectively.

(5) *Asia* includes delinquencies and loans in certain *EMEA* countries for all periods presented.

(6) During 2021, Citi's Australia and the Philippines consumer banking businesses were reclassified as HFS, due to Citi's entry into agreements to sell the businesses. Accordingly, Australia and the Philippines consumer loans are recorded in *Other assets* on the Consolidated Balance Sheet, and hence the loans and related delinquencies and ratios are not included in this table. See Note 2 to the Consolidated Financial Statements for additional information.

(7) The 90+ days past due and 30–89 days past due and related ratios exclude U.S. mortgage loans that are primarily related to U.S. mortgages guaranteed by U.S. government-sponsored agencies since the potential loss predominantly resides with the U.S. agencies. The amounts excluded for 90+ days past due EOP loans were $138 million ($0.4 billion), $183 million ($0.5 billion) and $172 million ($0.4 billion) at December 31, 2021, 2020 and 2019, respectively. The amounts excluded for loans 30–89 days past due (the 30–89 days past due EOP loans have the same adjustments as the 90+ days past due EOP loans) were $35 million, $73 million and $55 million at December 31, 2021, 2020 and 2019, respectively.

Consumer Loan Net Credit Losses and Ratios

In millions of dollars, except average loan amounts in billions	Average loans[1] 2021	Net credit losses[2] 2021	2020	2019
Global Consumer Banking				
Total	**$266.3**	**$4,582**	$6,646	$7,382
Ratio		**1.72%**	2.39%	2.60%
Retail banking				
Total	**$122.3**	**$ 779**	$ 805	$ 910
Ratio		**0.64%**	0.65%	0.76%
North America	**50.0**	**109**	132	161
Ratio		**0.22%**	0.25%	0.33%
Latin America	**9.0**	**410**	377	494
Ratio		**4.56%**	3.85%	4.30%
Asia[3][4]	**63.3**	**260**	296	255
Ratio		**0.41%**	0.47%	0.43%
Cards				
Total	**$144.0**	**$3,803**	$5,841	$6,472
Ratio		**2.64%**	3.82%	3.94%
North America—branded	**81.1**	**1,659**	2,708	2,864
Ratio		**2.05%**	3.20%	3.19%
North America—retail services	**43.1**	**1,169**	2,150	2,558
Ratio		**2.71%**	4.62%	5.13%
Latin America	**4.4**	**510**	489	615
Ratio		**11.59%**	10.40%	10.79%
Asia[3][4]	**15.4**	**465**	494	435
Ratio		**3.02%**	2.84%	2.29%
***Corporate/Other*—Consumer**				
Total	**$ 5.3**	**$ (82)**	$ (21)	$ (6)
Ratio		**(1.55)%**	0.25%	0.14%
Total Citigroup	**$271.6**	**$4,500**	$6,625	$7,376
Ratio		**1.66%**	2.32%	2.49%

(1) Average loans include interest and fees on credit cards.
(2) The ratios of net credit losses are calculated based on average loans, net of unearned income.
(3) *Asia* includes NCLs and average loans in certain *EMEA* countries for all periods presented.
(4) As a result of Citi's entry into agreements to sell its consumer banking businesses in Australia and the Philippines during 2021, these businesses were reclassified as HFS beginning in 2021. As a result of HFS accounting treatment, approximately $6 million of net credit losses (NCLs) was recorded as a reduction in revenue (*Other revenue*) in 2021. Accordingly, these NCLs are not included in this table, as well as Loans HFS that are recorded in *Other assets* on the Consolidated Balance Sheet. See Note 2 to the Consolidated Financial Statements for additional information.

Loan Maturities and Fixed/Variable Pricing of Consumer Loans

Loan Maturities

In millions of dollars at December 31, 2021	Due within 1 year	Greater than 1 year but within 5 years	Greater than 5 years but within 15 years	Greater than 15 years	Total
In North America offices					
Residential first mortgages	$ 15	$ 109	$2,573	$41,116	$ 43,813
Home equity loans	65	56	1,484	3,496	5,101
Credit cards	133,868	—	—	—	133,868
Personal, small business and other	1,092	1,678	237	151	3,158
Total	$135,040	$1,843	$4,294	$44,763	$185,940
In offices outside North America					
Residential mortgages	$ 2,022	$ 651	$6,667	$25,261	$ 34,601
Credit cards	17,808	—	—	—	17,808
Personal, small business and other	23,323	8,180	1,124	260	32,887
Total	$ 43,153	$8,831	$7,791	$25,521	$ 85,296

Fixed/Variable Pricing

In millions of dollars at December 31, 2021	Due within 1 year	Greater than 1 year but within 5 years	Greater than 5 years but within 15 years	Greater than 15 years	Total
Loans at fixed interest rates					
Residential first mortgages	$ 225	$ 183	$1,990	$31,581	$ 33,979
Home equity loans	65	51	223	336	675
Credit cards	42,117	—	—	—	42,117
Personal, small business and other	11,883	6,407	37	83	18,410
Total	$ 54,290	$6,641	$2,250	$32,000	$ 95,181
Loans at floating or adjustable interest rates					
Residential first mortgages	$ 1,812	$ 577	$7,250	$34,796	$ 44,435
Home equity loans	—	5	1,261	3,160	4,426
Credit cards	109,559	—	—	—	109,559
Personal, small business and other	12,532	3,451	1,324	328	17,635
Total	$123,903	$4,033	$9,835	$38,284	$176,055

CORPORATE CREDIT

Consistent with its overall strategy, Citi's corporate clients are typically corporations that value the depth and breadth of Citi's global network. Citi aims to establish relationships with these clients that, consistent with client needs, encompass multiple products, including cash management and trade services, foreign exchange, lending, capital markets and M&A advisory. During 2021, Citi's corporate credit exposures also included exposures in the private bank, excluding certain loans managed on a delinquency basis. For information on Citi's planned revision to its reporting structure effective for the first quarter of 2022, including the reporting of the private bank as part of a new reporting segment, *Personal Banking and Wealth Management*, see "Strategic Refresh—Market Exits and Planned Revision to Reporting Structure" above.

Corporate Credit Portfolio

The following table details Citi's corporate credit portfolio within *ICG* (excluding certain loans in the private bank, which are managed on a delinquency basis, as well as loans carried at fair value and held-for-sale), and before consideration of collateral or hedges, by remaining tenor for the periods indicated:

	December 31, 2021				September 30, 2021				December 31, 2020			
In billions of dollars	**Due within 1 year**	**Greater than 1 year but within 5 years**	**Greater than 5 years**	**Total exposure**	Due within 1 year	Greater than 1 year but within 5 years	Greater than 5 years	Total exposure	Due within 1 year	Greater than 1 year but within 5 years	Greater than 5 years	Total exposure
Direct outstandings (on-balance sheet)[1]	**$187**	**$136**	**$21**	**$344**	$192	$134	$21	$347	$175	$138	$25	$338
Unfunded lending commitments (off-balance sheet)[2]	**159**	**278**	**13**	**450**	164	286	11	461	158	272	11	441
Total exposure	**$346**	**$414**	**$34**	**$794**	$356	$420	$32	$808	$333	$410	$36	$779

(1) Includes drawn loans, overdrafts, bankers' acceptances and leases.
(2) Includes unused commitments to lend, letters of credit and financial guarantees.

Portfolio Mix—Geography and Counterparty

Citi's corporate credit portfolio is diverse across geography and counterparty. The following table shows the percentage of this portfolio by region (excluding the delinquency-managed private bank portfolio) based on Citi's internal management geography:

	December 31, 2021	September 30, 2021	December 31, 2020
North America	**57%**	57%	56%
EMEA	**24**	25	25
Asia	**13**	13	13
Latin America	**6**	5	6
Total	**100%**	100%	100%

The maintenance of accurate and consistent risk ratings across the corporate credit portfolio facilitates the comparison of credit exposure across all lines of business, geographic regions and products. Counterparty risk ratings reflect an estimated probability of default for a counterparty and are derived by leveraging validated statistical models, scorecard models and external agency ratings (under defined circumstances), in combination with consideration of factors specific to the obligor or market, such as management experience, competitive position, regulatory environment and commodity prices. Facility risk ratings are assigned that reflect the probability of default of the obligor and factors that affect the loss given default of the facility, such as support or collateral. Internal obligor ratings that generally correspond to BBB and above are considered investment grade, while those below are considered non-investment grade.

The following table presents the corporate credit portfolio (excluding the delinquency-managed private bank portfolio) by facility risk rating as a percentage of the total corporate credit portfolio:

	Total exposure		
	December 31, 2021	September 30, 2021	December 31, 2020
AAA/AA/A	**51%**	49%	49%
BBB	**32**	32	31
BB/B	**15**	16	17
CCC or below	**2**	3	3
Total	**100%**	100%	100%

Note: Total exposure includes direct outstandings and unfunded lending commitments.

In addition to the obligor and facility risk ratings assigned to all exposures, Citi may classify exposures in the corporate credit portfolio. These classifications are consistent with Citi's interpretation of the U.S. banking regulators' definition of criticized exposures, which may categorize exposures as special mention, substandard, doubtful or loss.

Risk ratings and classifications are reviewed regularly, and adjusted as appropriate. The credit review process incorporates quantitative and qualitative factors, including financial and non-financial disclosures or metrics, idiosyncratic events or changes to the competitive, regulatory or macroeconomic environment. This includes but is not limited to exposures in those sectors significantly impacted by the pandemic (including consumer retail, commercial real estate and transportation).

Citi believes the corporate credit portfolio to be appropriately rated and classified as of December 31, 2021. Since the onset of the pandemic, Citi has taken action to adjust internal ratings and classifications of exposures as both the macroeconomic environment and obligor-specific factors have changed, particularly where additional stress has been seen.

As obligor risk ratings are downgraded, the probability of default increases. Downgrades of obligor risk ratings tend to result in a higher provision for credit losses. In addition, downgrades may result in the purchase of additional credit derivatives or other risk mitigants to hedge the incremental credit risk, or may result in Citi's seeking to reduce exposure to an obligor or an industry sector. Citi will continue to review exposures to ensure that the appropriate probability of default is incorporated into all risk assessments.

For additional information on Citi's corporate credit portfolio, see Note 14 to the Consolidated Financial Statements.

Portfolio Mix—Industry

Citi's corporate credit portfolio is diversified by industry. The following table details the allocation of Citi's total corporate credit portfolio by industry (excluding the delinquency-managed private bank portfolio):

	Total exposure		
	December 31, 2021	September 30, 2021	December 31, 2020
Transportation and industrials	**18%**	19%	19%
Private bank	**14**	14	14
Consumer retail	**10**	10	11
Technology, media and telecom	**11**	10	10
Real estate	**9**	9	8
Power, chemicals, metals and mining	**8**	8	8
Banks and finance companies	**7**	7	7
Energy and commodities	**6**	6	6
Health	**4**	5	5
Public sector	**3**	3	3
Insurance	**4**	3	3
Asset managers and funds	**3**	3	3
Financial markets infrastructure	**2**	2	2
Securities firms	**—**	—	—
Other industries	**1**	1	1
Total	**100%**	100%	100%

The following table details Citi's corporate credit portfolio by industry as of December 31, 2021:

					Non-investment grade			Selected metrics		
In millions of dollars	Total credit exposure	Funded[1]	Unfunded[1]	Investment grade	Non-criticized	Criticized performing	Criticized non-performing[2]	30 days or more past due and accruing[3]	Net credit losses (recoveries)[4]	Credit derivative hedges[5]
Transportation and industrials	**$143,444**	**$ 51,502**	**$ 91,942**	**$110,047**	**$19,051**	**$13,196**	**$1,150**	**$ 384**	**$127**	**$ (8,791)**
Autos[6]	48,210	18,662	29,548	39,824	5,365	2,906	115	49	2	(3,228)
Transportation	26,896	12,085	14,811	19,233	2,344	4,447	872	105	104	(1,334)
Industrials	68,338	20,755	47,583	50,990	11,342	5,843	163	230	21	(4,229)
Private bank	**114,018**	**79,684**	**34,334**	**110,684**	**2,060**	**1,190**	**84**	**793**	**6**	**(1,080)**
Consumer retail	**78,995**	**32,894**	**46,101**	**60,687**	**13,590**	**4,311**	**407**	**224**	**100**	**(5,115)**
Technology, media and telecom	**84,334**	**28,542**	**55,792**	**64,677**	**15,873**	**3,587**	**197**	**156**	**11**	**(6,875)**
Real estate	**69,808**	**46,220**	**23,588**	**58,089**	**6,761**	**4,923**	**35**	**116**	**50**	**(798)**
Power, chemicals, metals and mining	**65,641**	**20,224**	**45,417**	**53,576**	**10,708**	**1,241**	**116**	**292**	**22**	**(5,808)**
Power	26,199	5,610	20,589	22,860	2,832	420	87	100	17	(3,032)
Chemicals	25,550	8,525	17,025	20,789	4,224	528	9	88	6	(2,141)
Metals and mining	13,892	6,089	7,803	9,927	3,652	293	20	104	(1)	(635)
Banks and finance companies	**58,251**	**36,803**	**21,448**	**49,466**	**4,892**	**3,890**	**3**	**150**	**(5)**	**(680)**
Energy and commodities[7]	**48,973**	**13,485**	**35,488**	**38,972**	**7,517**	**2,220**	**264**	**224**	**78**	**(3,679)**
Health	**33,393**	**8,826**	**24,567**	**27,599**	**4,702**	**942**	**150**	**95**	**—**	**(2,465)**
Public sector	**23,842**	**12,464**	**11,378**	**21,035**	**1,527**	**1,275**	**5**	**37**	**(3)**	**(1,282)**
Insurance	**28,495**	**3,163**	**25,332**	**27,447**	**987**	**61**	**—**	**2**	**1**	**(2,711)**
Asset managers and funds	**22,269**	**6,649**	**15,620**	**20,871**	**1,019**	**377**	**2**	**12**	**—**	**(113)**
Financial markets infrastructure	**14,342**	**109**	**14,233**	**14,323**	**18**	**—**	**1**	**—**	**—**	**(22)**
Securities firms	**1,472**	**613**	**859**	**605**	**816**	**51**	**—**	**4**	**—**	**(5)**
Other industries	**6,590**	**2,802**	**3,788**	**4,146**	**1,892**	**490**	**62**	**—**	**6**	**(169)**
Total	**$793,867**	**$343,980**	**$449,887**	**$662,224**	**$91,413**	**$37,754**	**$2,476**	**$2,489**	**$393**	**$(39,593)**

(1) Excludes $46.5 billion and $1.7 billion of funded and unfunded exposure at December 31, 2021, respectively, primarily related to the delinquency-managed private bank portfolio. Funded balances also excludes loans carried at fair value of $6.1 billion at December 31, 2021.

(2) Includes non-accrual loan exposures and criticized unfunded exposures.

(3) Excludes $36 million of past due loans primarily related to the delinquency-managed private bank portfolio.

(4) Net credit losses (recoveries) are for the year ended December 31, 2021 and exclude delinquency-managed private bank net credit losses of $2 million.

(5) Represents the amount of purchased credit protection in the form of derivatives to economically hedge funded and unfunded exposures. Of the $39.6 billion of purchased credit protection, $36.0 billion represents the total notional amount of purchased credit derivatives on individual reference entities. The remaining $3.6 billion represents the first loss tranche of portfolios of purchased credit derivatives with a total notional of $28.4 billion, where the protection seller absorbs the first loss on the referenced loan portfolios.

(6) Autos total credit exposure includes securitization financing facilities secured by auto loans and leases, extended mainly to the finance company subsidiaries of global auto manufacturers, bank subsidiaries and independent auto finance companies, of approximately $17.9 billion ($6.5 billion in funded, with more than 99% rated investment grade) as of December 31, 2021.

(7) In addition to this exposure, Citi has energy-related exposure within the public sector (e.g., energy-related state-owned entities) and the transportation and industrials sector (e.g., off-shore drilling entities) included in the table above. As of December 31, 2021, Citi's total exposure to these energy-related entities was approximately $5.1 billion, of which approximately $2.6 billion consisted of direct outstanding funded loans.

The following table details Citi's corporate credit portfolio by industry as of December 31, 2020:

					Non-investment grade			Selected metrics		
In millions of dollars	Total credit exposure	Funded[1]	Unfunded[1]	Investment grade	Non-criticized	Criticized performing	Criticized non-performing[2]	30 days or more past due and accruing[3]	Net credit losses (recoveries)[4]	Credit derivative hedges[5]
Transportation and industrials	$145,449	$ 58,353	$ 87,096	$104,311	$17,452	$21,887	$1,798	$ 136	$239	$ (8,110)
Autos[6]	52,150	23,586	28,564	41,334	4,374	6,167	275	8	45	(3,220)
Transportation	27,693	14,107	13,586	16,410	2,993	6,872	1,417	17	144	(1,166)
Industrials	65,606	20,660	44,946	46,566	10,085	8,848	106	111	50	(3,724)
Private bank[1]	109,397	75,693	33,705	104,244	2,395	2,510	248	963	78	(1,080)
Consumer retail	81,941	34,621	47,320	60,683	11,524	9,418	316	146	64	(5,493)
Technology, media and telecom	81,598	29,821	51,777	60,236	15,924	5,214	223	107	74	(7,237)
Real estate	64,817	42,711	22,106	53,839	5,342	5,453	185	334	18	(642)
Power, chemicals, metals and mining	63,273	20,156	43,117	47,534	11,367	4,181	192	59	70	(5,341)
Power	26,555	6,018	20,537	22,405	3,311	685	154	14	57	(2,637)
Chemicals	22,227	7,839	14,387	16,535	3,804	1,882	5	32	8	(2,102)
Metals and mining	14,492	6,299	8,193	8,593	4,251	1,614	34	13	5	(602)
Banks and finance companies	52,639	29,570	23,069	43,546	4,648	4,387	59	27	79	(765)
Energy and commodities[7]	48,447	14,009	34,438	33,678	7,226	6,546	996	70	285	(4,199)
Health	35,421	8,575	26,846	29,081	4,354	1,749	238	17	17	(1,964)
Public sector	26,705	13,416	13,289	22,098	1,887	2,704	16	45	9	(1,089)
Insurance	26,576	1,925	24,651	25,864	575	136	—	27	1	(2,682)
Asset managers and funds	19,745	4,491	15,254	18,528	1,013	191	13	41	(1)	(84)
Financial markets infrastructure	12,610	229	12,382	12,590	20	—	—	—	—	(9)
Securities firms	976	430	547	573	298	97	9	—	—	(6)
Other industries	9,009	4,247	4,762	4,980	2,404	1,442	182	10	43	(138)
Total	$778,603	$338,246	$440,357	$621,784	$86,427	$65,914	$4,477	$1,982	$976	$ (38,839)

(1) Excludes $42.0 billion and $4.4 billion of funded and unfunded exposure at December 31, 2020, respectively, primarily related to the delinquency-managed private bank portfolio. Funded balances also excludes loans carried at fair value of $6.8 billion at December 31, 2020.

(2) Includes non-accrual loan exposures and criticized unfunded exposures.

(3) Excludes $162 million of past due loans primarily related to the delinquency-managed private bank portfolio.

(4) Net credit losses (recoveries) are for the year ended December 31, 2020 and exclude delinquency-managed private bank credit losses of $10 million.

(5) Represents the amount of purchased credit protection in the form of derivatives to economically hedge funded and unfunded exposures. Of the $38.8 billion of purchased credit protection, $36.8 billion represents the total notional amount of purchased credit derivatives on individual reference entities. The remaining $2.0 billion represents the first loss tranche of portfolios of purchased credit derivatives with a total notional of $16.1 billion, where the protection seller absorbs the first loss on the referenced loan portfolios.

(6) Autos total credit exposure includes securitization financing facilities secured by auto loans and leases, extended mainly to the finance company subsidiaries of global auto manufacturers, bank subsidiaries and independent auto finance companies, of approximately $20.2 billion ($10.3 billion in funded, with more than 99% rated investment grade) at December 31, 2020.

(7) In addition to this exposure, Citi has energy-related exposure within the public sector (e.g., energy-related state-owned entities) and the transportation and industrials sector (e.g., off-shore drilling entities) included in the table above. As of December 31, 2020, Citi's total exposure to these energy-related entities was approximately $7.0 billion, of which approximately $3.8 billion consisted of direct outstanding funded loans.

Exposure to Commercial Real Estate

As of December 31, 2021, *ICG*'s total corporate credit exposure to commercial real estate (CRE) was $66 billion, with $44 billion consisting of direct outstanding funded loans (mainly included in the real estate and private bank categories in the above table), or 7% of Citi's total outstanding loans. In addition, as of December 31, 2021, more than 70% of *ICG*'s total corporate CRE exposure was to borrowers in the U.S. Also as of December 31, 2021, approximately 77% of *ICG*'s total corporate CRE exposure was rated investment grade.

As of December 31, 2021, the ACLL was 0.9% of funded CRE exposure, including 2.4% of funded non-investment-grade exposure.

Of the total CRE exposure:

- $20 billion ($12 billion of direct outstanding funded loans) relates to Community Reinvestment Act-related lending provided pursuant to Citi's regulatory requirements to meet the credit needs of borrowers in low and moderate income neighborhoods.
- $20 billion ($16 billion of direct outstanding funded loans) relates to exposure secured by mortgages on underlying properties or in well-rated securitization exposures.
- $15 billion ($5 billion of direct outstanding funded loans) relates to unsecured loans to large REITs, with nearly 74% of the exposure rated investment grade.
- $11 billion ($11 billion of direct outstanding funded loans) relates to CRE exposure in the private bank, of which 100% is secured by mortgages. In addition, 48% of the exposure is also full recourse to the client. As of December 31, 2021, 82% of the exposure was rated investment grade.

Credit Risk Mitigation

As part of its overall risk management activities, Citi uses credit derivatives and other risk mitigants to hedge portions of the credit risk in its corporate credit portfolio, in addition to outright asset sales. Citi may enter into partial-term hedges as well as full-term hedges. In advance of the expiration of partial-term hedges, Citi will determine, among other factors, the economic feasibility of hedging the remaining life of the instrument. The results of the mark-to-market and any realized gains or losses on credit derivatives are reflected primarily in *Principal transactions* in the Consolidated Statement of Income.

At December 31, 2021, September 30, 2021 and December 31, 2020, *ICG* (excluding the delinquency-managed private bank portfolio) had economic hedges on the corporate credit portfolio of $39.6 billion, $38.1 billion and $38.8 billion, respectively. Citi's expected credit loss model used in the calculation of its ACL does not include the favorable impact of credit derivatives and other mitigants that are marked to market. In addition, the reported amounts of direct outstandings and unfunded lending commitments in the tables above do not reflect the impact of these hedging transactions. The credit protection was economically hedging underlying *ICG* (excluding the delinquency-managed private bank portfolio) corporate credit portfolio exposures with the following risk rating distribution:

Rating of Hedged Exposure

	December 31, 2021	September 30, 2021	December 31, 2020
AAA/AA/A	**35%**	32%	30%
BBB	**49**	47	48
BB/B	**13**	17	19
CCC or below	**3**	4	3
Total	**100%**	100%	100%

Loan Maturities and Fixed/Variable Pricing of Corporate Loans

In millions of dollars at December 31, 2021	Due within 1 year	Over 1 year but within 5 years	Over 5 years but within 15 years	Over 15 years	Total
Corporate loans					
In North America offices[1]					
Commercial and industrial loans	$ 25,694	$ 24,878	$ 973	$ 454	$ 51,999
Financial institutions	50,299	16,534	91	12	66,936
Mortgage and real estate[2]	12,385	5,948	5,460	39,564	63,357
Installment, revolving credit and other	13,090	13,454	2,573	26	29,143
Lease financing	95	230	88	—	413
Total	$101,563	$ 61,044	$ 9,185	$40,056	$211,848
In offices outside the North America[1]					
Commercial and industrial loans	$ 75,502	$ 22,905	$ 4,650	$ 110	$103,167
Financial institutions	26,672	5,147	92	292	32,203
Mortgage and real estate[2]	4,359	4,541	912	600	10,412
Installment, revolving credit and other	25,518	7,440	455	1,023	34,436
Governments and official institutions	792	2,183	843	605	4,423
Lease financing	1	23	18	—	42
Total	$132,844	$ 42,239	$ 6,970	$ 2,630	$184,683
Corporate loans, net of unearned income[3]	$234,407	$103,283	$16,155	$42,686	$396,531
Loans at fixed interest rates[4]					
Commercial and industrial loans		$ 6,003	$ 752	$ 96	
Financial institutions		4,982	26	12	
Mortgage and real estate[2]		1,506	4,557	17,150	
Installment, revolving credit and other		4,481	856	92	
Lease financing		240	88	—	
Total		$ 17,212	$ 6,279	$17,350	
Loans at floating or adjustable interest rates[4]					
Commercial and industrial loans		$ 41,780	$ 4,871	$ 468	
Financial institutions		16,699	157	292	
Mortgage and real estate[2]		8,983	1,815	23,015	
Installment, revolving credit and other		18,597	3,015	1,561	
Lease financing		12	18	—	
Total		$ 86,071	$ 9,876	$25,336	
Total fixed/variable pricing of corporate loans with maturities due after one year, net of unearned income[3]		$103,283	$16,155	$42,686	

(1) North America includes the U.S., Canada and Puerto Rico. Mexico is included in offices outside North America. The classification between offices in North America and outside North America is based on the domicile of the booking unit. The difference between the domicile of the booking unit and the domicile of the managing unit is not material.
(2) Loans secured primarily by real estate.
(3) Corporate loans are net of unearned income of ($799) million. Unearned income on corporate loans primarily represents interest received in advance, but not yet earned, on loans originated on a discounted basis.
(4) Based on contractual terms. Repricing characteristics may effectively be modified from time to time using derivative contracts. See Note 22 to the Consolidated Financial Statements.

ADDITIONAL CONSUMER AND CORPORATE CREDIT DETAILS

Loans Outstanding

In millions of dollars	December 31, 2021	2020	2019	2018	2017
Consumer loans					
In North America offices[1]					
Residential first mortgages[2]	**$ 43,813**	$ 47,778	$ 47,008	$ 47,412	$ 49,375
Home equity loans[2]	**5,101**	7,128	9,223	11,543	14,827
Credit cards	**133,868**	130,385	149,163	144,542	139,718
Personal, small business and other	**3,158**	4,509	3,699	4,046	4,140
Total	**$185,940**	$189,800	$209,093	$207,543	$208,060
In offices outside North America[1]					
Residential first mortgages[2]	**$ 34,601**	$ 39,969	$ 38,024	$ 36,388	$ 37,870
Credit cards	**17,808**	22,692	25,909	24,951	25,727
Personal, small business and other	**32,887**	36,378	36,522	33,478	34,157
Total	**$ 85,296**	$ 99,039	$100,455	$ 94,817	$ 97,754
Consumer loans, net of unearned income[3]	**$271,236**	$288,839	$309,548	$302,360	$305,814
Corporate loans					
In North America offices[1]					
Commercial and industrial	**$ 51,999**	$ 57,731	$ 55,929	$ 60,861	$ 60,219
Financial institutions	**66,936**	55,809	53,922	48,447	39,128
Mortgage and real estate[2]	**63,357**	60,675	53,371	50,124	44,683
Installment and other	**29,143**	26,744	31,238	32,425	31,932
Lease financing	**413**	673	1,290	1,429	1,470
Total	**$211,848**	$201,632	$195,750	$193,286	$177,432
In offices outside North America[1]					
Commercial and industrial	**$103,167**	$104,072	$112,668	$114,029	$113,178
Financial institutions	**32,203**	32,334	40,211	36,837	35,273
Mortgage and real estate[2]	**10,412**	11,371	9,780	7,376	7,309
Installment and other	**34,436**	33,759	27,303	25,685	22,638
Lease financing	**42**	65	95	103	190
Governments and official institutions	**4,423**	3,811	4,128	4,520	5,200
Total	**$184,683**	$185,412	$194,185	$188,550	$183,788
Corporate loans, net of unearned income[4]	**$396,531**	$387,044	$389,935	$381,836	$361,220
Total loans—net of unearned income	**$667,767**	$675,883	$699,483	$684,196	$667,034
Allowance for credit losses on loans (ACLL)	**(16,455)**	(24,956)	(12,783)	(12,315)	(12,355)
Total loans—net of unearned income and ACLL	**$651,312**	$650,927	$686,700	$671,881	$654,679
ACLL as a percentage of total loans—net of unearned income[5]	**2.49%**	3.73%	1.84%	1.81%	1.86%
ACLL for consumer loan losses as a percentage of total consumer loans—net of unearned income[5]	**5.02%**	6.77%	3.20%	3.14%	3.08%
ACLL for corporate loan losses as a percentage of total corporate loans—net of unearned income[5]	**0.73%**	1.42%	0.75%	0.74%	0.82%

(1) North America includes the U.S., Canada and Puerto Rico. Mexico is included in offices outside North America. The classification of corporate loans between offices in North America and outside North America is based on the domicile of the booking unit. The difference between the domicile of the booking unit and the domicile of the managing unit is not material.

(2) Loans secured primarily by real estate.

(3) Consumer loans are net of unearned income of $659 million, $749 million, $783 million, $742 million and $768 million at December 31, 2021, 2020, 2019, 2018 and 2017, respectively. Unearned income on consumer loans primarily represents unamortized origination fees and costs, premiums and discounts.

(4) Corporate loans include private bank loans and are net of unearned income of $(799) million, $(844) million, $(814) million, $(855) million and $(794) million at December 31, 2021, 2020, 2019, 2018 and 2017, respectively. Unearned income on corporate loans primarily represents interest received in advance, but not yet earned, on loans originated on a discounted basis.

(5) Because loans carried at fair value do not have an ACLL, they are excluded from the ACLL ratio calculation.

Details of Credit Loss Experience

In millions of dollars	**2021**	2020	2019	2018	2017
Allowance for credit losses on loans (ACLL) at beginning of year	**$24,956**	$12,783	$12,315	$12,355	$12,060
Adjustments to opening balance:					
Financial instruments—credit losses (CECL)[1]	**—**	4,201	—	—	—
Variable post-charge-off third-party collection costs[2]	**—**	(443)	—	—	—
Adjusted ACLL at beginning of year	**$24,956**	$16,541	$12,315	$12,355	$12,060
Provision for credit losses on loans (PCLL)					
Consumer[2]	**(966)**	11,765	7,751	7,258	7,329
Corporate	**(2,137)**	4,157	467	96	174
Total	**$ (3,103)**	$15,922	$ 8,218	$ 7,354	$ 7,503
Gross credit losses on loans					
Consumer					
In U.S. offices	**$ 4,055**	$ 6,047	$ 6,538	$ 5,971	$ 5,664
In offices outside the U.S.	**2,143**	2,144	2,316	2,351	2,377
Corporate					
Commercial and industrial, and other					
In U.S. offices	**239**	562	265	121	223
In offices outside the U.S.	**256**	409	196	208	401
Loans to financial institutions					
In U.S. offices	**1**	14	—	3	3
In offices outside the U.S.	**1**	12	3	7	1
Mortgage and real estate					
In U.S. offices	**20**	71	23	2	2
In offices outside the U.S.	**5**	4	—	2	2
Total	**$ 6,720**	$ 9,263	$ 9,341	$ 8,665	$ 8,673
Credit recoveries on loans[2]					
Consumer					
In U.S. offices	**$ 1,204**	$ 1,106	$ 975	$ 912	$ 892
In offices outside the U.S.	**494**	460	503	502	552
Corporate					
Commercial and industrial, and other					
In U.S. offices	**67**	43	28	47	31
In offices outside the U.S.	**56**	28	59	78	117
Loans to financial institutions					
In U.S. offices	**3**	—	—	—	1
In offices outside the U.S.	**1**	14	—	3	1
Mortgage and real estate					
In U.S. offices	**—**	—	8	6	2
In offices outside the U.S.	**—**	1	—	4	1
Total	**$ 1,825**	$ 1,652	$ 1,573	$ 1,552	$ 1,597
Net credit losses on loans (NCLs)					
In U.S. offices	**$ 3,041**	$ 5,545	$ 5,815	$ 5,132	$ 4,966
In offices outside the U.S.	**1,854**	2,066	1,953	1,981	2,110
Total	**$ 4,895**	$ 7,611	$ 7,768	$ 7,113	$ 7,076
Other—net[3][4][5][6][7][8]	**$ (503)**	$ 104	$ 18	$ (281)	$ (132)
Allowance for credit losses on loans (ACLL) at end of year	**$16,455**	$24,956	$12,783	$12,315	$12,355
ACLL as a percentage of EOP loans[9]	**2.49%**	3.73%	1.84%	1.81%	1.86%
Allowance for credit losses on unfunded lending commitments (ACLUC)[10][11]	**$ 1,871**	$ 2,655	$ 1,456	$ 1,367	$ 1,258

Table and notes continue on the next page.

Total ACLL and ACLUC	**$18,326**	$27,611	$14,239	$13,682	$13,613
Net consumer credit losses on loans	**$ 4,500**	$ 6,625	$ 7,376	$ 6,908	$ 6,597
As a percentage of average consumer loans	**1.66%**	2.32%	2.49%	2.33%	2.22%
Net corporate credit losses on loans	**$ 395**	$ 986	$ 392	$ 205	$ 479
As a percentage of average corporate loans	**0.10%**	0.25%	0.10%	0.05%	0.14%
ACLL by type at end of year[12]					
Consumer	**$13,616**	$19,554	$ 9,897	$ 9,504	$ 9,412
Corporate	**2,839**	5,402	2,886	2,811	2,943
Total	**$16,455**	$24,956	$12,783	$12,315	$12,355

(1) On January 1, 2020, Citi adopted Accounting Standards Codification (ASC) 326, *Financial Instruments—Credit Losses (CECL)*. The ASC introduces a new credit loss methodology requiring earlier recognition of credit losses while also providing additional disclosure about credit risk. On January 1, 2020, Citi recorded a $4.1 billion, or an approximate 29%, pretax increase in the Allowance for credit losses, along with a $3.1 billion after-tax decrease in Retained earnings and a deferred tax asset increase of $1.0 billion. This transition impact reflects (i) a $4.9 billion build to the consumer ACL due to longer estimated tenors than under the incurred loss methodology under prior U.S. GAAP, net of recoveries; and (ii) a $0.8 billion decrease to the corporate ACL due to shorter remaining tenors, incorporation of recoveries and use of more specific historical loss data based on an increase in portfolio segmentation across industries and geographies. See Note 1 to the Consolidated Financial Statements for further discussion on the impact of Citi's adoption of CECL.

(2) Citi had a change in accounting related to its variable post-charge-off third-party collection costs that was recorded as an adjustment to its January 1, 2020 opening allowance for credit losses on loans of $443 million. See Note 1 to the Consolidated Financial Statements.

(3) Includes all adjustments to the allowance for credit losses, such as changes in the allowance from acquisitions, dispositions, securitizations, FX translation, purchase accounting adjustments, etc.

(4) 2021 includes an approximate $280 million reclass related to Citi's agreement to sell its consumer banking business in Australia and an approximate $90 million reclass related to Citi's agreement to sell its consumer banking business in the Philippines. Those ACLL were reclassified to Other assets during 2021. 2021 also includes a decrease of approximately $134 million related to FX translation.

(5) 2020 includes reductions of approximately $4 million related to the transfer to HFS of various real estate loan portfolios. In addition, 2020 includes an increase of approximately $97 million related to FX translation.

(6) 2019 includes reductions of approximately $42 million related to the sale or transfer to HFS of various loan portfolios. In addition, 2019 includes a reduction of approximately $60 million related to FX translation.

(7) 2018 includes reductions of approximately $201 million related to the sale or transfer to HFS of various loan portfolios, which include approximately $106 million related to the transfer of various real estate loan portfolios to HFS. In addition, 2017 includes an increase of approximately $115 million related to FX translation.

(8) 2017 includes reductions of approximately $261 million related to the sale or transfer to HFS of various loan portfolios, which include approximately $106 million related to the transfer of various real estate loan portfolios to HFS. In addition, 2017 includes an increase of approximately $115 million related to FX translation.

(9) December 31, 2021, 2020, 2019, 2018 and 2017 exclude $6.1 billion, $6.9 billion, $4.1 billion, $3.2 billion and $4.4 billion, respectively, of loans which are carried at fair value.

(10) 2020 corporate ACLUC includes a non-provision transfer of $68 million, representing reserves on performance guarantees. The reserves on these contracts were reclassified out of the ACL on unfunded lending commitments and into other liabilities.

(11) Represents additional credit reserves recorded as *Other liabilities* on the Consolidated Balance Sheet.

(12) Beginning in 2020, under CECL, the ACLL represents management's estimate of expected credit losses in the portfolio and troubled debt restructurings. See "Significant Accounting Policies and Significant Estimates" and Note 1 to the Consolidated Financial Statements below. Attribution of the ACLL is made for analytical purposes only and the entire ACLL is available to absorb credit losses in the overall portfolio. Prior to 2020, the ACLL represented management's estimate of probable losses inherent in the portfolio, as well as probable losses related to large individually evaluated impaired loans and TDRs. See "Superseded Accounting Principles" in Note 1 to the Consolidated Financial Statements.

Allowance for Credit Losses on Loans (ACLL)

The following tables detail information on Citi's ACLL, loans and coverage ratios:

	December 31, 2021		
In billions of dollars	**ACLL**	**EOP loans, net of unearned income**	**ACLL as a percentage of EOP loans[1]**
Consumer			
North America cards[2]	**$10.8**	**$133.8**	**8.1%**
North America mortgages[3]	**0.2**	**48.9**	**0.4**
North America other	**0.3**	**3.2**	**9.4**
International cards	**1.2**	**17.8**	**6.7**
International other[4]	**1.2**	**67.5**	**1.8**
Total	**$13.7**	**$271.2**	**5.1%**
Corporate			
Commercial and industrial	**$ 1.5**	**$151.1**	**1.0%**
Financial institutions	**0.3**	**98.9**	**0.3**
Mortgage and real estate	**0.7**	**73.8**	**0.9**
Installment and other	**0.3**	**66.7**	**0.4**
Total	**$ 2.8**	**$390.5**	**0.7%**
Loans at fair value[1]	**N/A**	**$ 6.1**	**N/A**
Total Citigroup	**$16.5**	**$667.8**	**2.5%**

(1) Loans carried at fair value do not have an ACLL and are excluded from the ACLL ratio calculation.
(2) Includes both branded cards and retail services. The $10.8 billion of loan loss reserves represented approximately 63 months of coincident net credit loss coverage. As of December 31, 2021, *North America* branded cards ACLL as a percentage of EOP loans was 7.1% and *North America* retail services ACLL as a percentage of EOP loans was 10.0%.
(3) Of the $0.2 billion, approximately $0.1 billion and $0.1 billion determined in accordance with ASC 450-20 and ASC 310-10-35 (troubled debt restructurings), respectively. Of the $48.9 billion in loans, approximately $47.5 billion and $1.4 billion of the loans were evaluated in accordance with ASC 450-20 and ASC 310-10-35 (troubled debt restructurings), respectively. For additional information, see Note 15 to the Consolidated Financial Statements.
(4) Includes mortgages and other retail loans.

	December 31, 2020		
In billions of dollars	ACLL	EOP loans, net of unearned income	ACLL as a percentage of EOP loans[1]
Consumer			
North America cards[2]	$14.7	$130.4	11.3%
North America mortgages[3]	0.7	54.9	1.3
North America other	0.3	4.5	6.7
International cards	2.1	22.7	9.3
International other[4]	1.8	76.3	2.4
Total	$ 19.6	$288.8	6.8%
Corporate			
Commercial and industrial	$ 3.6	$156.3	2.3%
Financial institutions	0.4	87.7	0.5
Mortgage and real estate	1.1	72.1	1.5
Installment and other	0.3	64.1	0.5
Total	$ 5.4	$380.2	1.4%
Loans at fair value[1]	N/A	$ 6.9	N/A
Total Citigroup	$ 25.0	$675.9	3.7%

(1) Loans carried at fair value do not have an ACLL and are excluded from the ACLL ratio calculation.
(2) Includes both branded cards and retail services. The $14.7 billion of loan loss reserves represented approximately 53 months of coincident net credit loss coverage. As of December 31, 2020, *North America* branded cards ACLL as a percentage of EOP loans was 10.0% and *North America* retail services ACLL as a percentage of EOP loans was 13.6%.
(3) Of the $0.7 billion, nearly all was allocated to *North America* mortgages in *Corporate/Other*, including approximately $0.5 billion and $0.2 billion determined in accordance with ASC 450-20 and ASC 310-10-35 (troubled debt restructurings), respectively. Of the $54.9 billion in loans, approximately $53.0 billion and $1.9 billion of the loans were evaluated in accordance with ASC 450-20 and ASC 310-10-35 (troubled debt restructurings), respectively. For additional information, see Note 15 to the Consolidated Financial Statements.
(4) Includes mortgages and other retail loans.

The following table details Citi's corporate credit allowance for credit losses on loans (ACLL) by industry exposure as of December 31, 2021:

In millions of dollars, except percentages	**Funded exposure[1]**	**ACLL**	**ACLL as a % of funded exposure**
Transportation and industrials	**$ 51,502**	**$ 597**	**1.16%**
Private bank	**79,684**	**145**	**0.18**
Consumer retail	**32,894**	**288**	**0.88**
Technology, media and telecom	**28,542**	**170**	**0.60**
Real estate	**46,220**	**509**	**1.10**
Power, chemicals, metals and mining	**20,224**	**151**	**0.75**
Banks and finance companies	**36,804**	**197**	**0.54**
Energy and commodities	**13,485**	**268**	**1.99**
Health	**8,826**	**73**	**0.83**
Public sector	**12,464**	**74**	**0.59**
Insurance	**3,162**	**8**	**0.25**
Asset managers and funds	**6,649**	**34**	**0.51**
Financial markets infrastructure	**109**	**—**	**—**
Securities firms	**613**	**10**	**1.63**
Other industries	**2,802**	**28**	**1.00**
Total classifiably managed loans[2]	**$343,980**	**$2,552**	**0.74%**
Loans managed on a delinquency basis[3]	**$ 46,481**	**$ 287**	**0.62%**
Total	**$390,461**	**$2,839**	**0.73%**

(1) Funded exposure excludes loans carried at fair value of $6.1 billion that are not subject to ACLL under the CECL standard.
(2) As of December 31, 2021, the ACLL shown above reflects coverage of 0.4% of funded investment-grade exposure and 2.3% of funded non-investment-grade exposure.
(3) Primarily associated with delinquency-managed private bank loans including non-rated mortgage and real estate loans to private banking clients at December 31, 2021.

The following table details Citi's corporate credit allowance for credit losses on loans (ACLL) by industry exposure as of December 31, 2020:

In millions of dollars, except percentages	**Funded exposure[1]**	**ACLL**	**ACLL as a % of funded exposure**
Transportation and industrials	$ 58,352	$1,558	2.67%
Private bank	75,693	224	0.30
Consumer retail	34,621	563	1.63
Technology, media and telecom	29,821	407	1.36
Real estate	42,711	718	1.68
Power, chemicals, metals and mining	20,156	312	1.55
Banks and finance companies	29,570	219	0.74
Energy and commodities	14,009	523	3.73
Health	8,575	144	1.68
Public sector	13,416	172	1.28
Insurance	1,925	7	0.36
Asset managers and funds	4,491	22	0.49
Financial markets infrastructure	229	—	—
Securities firms	430	10	2.33
Other industries	4,247	122	2.87
Total classifiably managed loans[2]	$338,246	$5,001	1.48%
Loans managed on a delinquency basis[3]	$ 41,958	$ 401	0.96%
Total	$380,204	$5,402	1.42%

(1) Funded exposure excludes loans carried at fair value of $6.8 billion that are not subject to ACLL under the CECL standard.
(2) As of December 31, 2021, the ACLL shown above reflects coverage of 0.5% of funded investment-grade exposure and 4.4% of funded non-investment-grade exposure.
(3) Primarily associated with delinquency-managed private bank loans including non-rated mortgage and real estate loans to private banking clients at December 31, 2020.

Non-Accrual Loans and Assets and Renegotiated Loans

There is a certain amount of overlap among non-accrual loans and assets and renegotiated loans. The following summary provides a general description of each category.

Non-Accrual Loans and Assets:

- Corporate and consumer (including commercial banking) non-accrual status is based on the determination that payment of interest or principal is doubtful.
- A corporate loan may be classified as non-accrual and still be performing under the terms of the loan structure. Non-accrual loans may still be current on interest payments. Citi's corporate non-accrual loans were $1.9 billion, $2.4 billion and $3.5 billion as of December 31, 2021, September 30, 2021 and December 31, 2020, respectively. Of these, approximately 54%, 56% and 59% were performing at December 31, 2021, September 30, 2021 and December 31, 2020, respectively.
- Consumer non-accrual status is generally based on aging, i.e., the borrower has fallen behind on payments.
- Consumer mortgage loans, other than Federal Housing Administration (FHA) insured loans, are classified as non-accrual within 60 days of notification that the borrower has filed for bankruptcy. In addition, home equity loans are classified as non-accrual if the related residential first mortgage loan is 90 days or more past due.
- *North America* branded cards and retail services are not included because, under industry standards, credit card loans accrue interest until such loans are charged off, which typically occurs at 180 days of contractual delinquency.

Renegotiated Loans:

- Includes both corporate and consumer loans whose terms have been modified in a troubled debt restructuring (TDR).
- Includes both accrual and non-accrual TDRs.

Non-Accrual Loans

The table below summarizes Citigroup's non-accrual loans as of the periods indicated. Non-accrual loans may still be current on interest payments. In situations where Citi reasonably expects that only a portion of the principal owed will ultimately be collected, all payments received are reflected as a reduction of principal and not as interest income. For all other non-accrual loans, cash interest receipts are generally recorded as revenue.

	December 31,				
In millions of dollars	**2021**	2020	2019	2018	2017
Corporate non-accrual loans[1]					
North America	**$ 801**	$1,928	$1,214	$ 586	$ 966
EMEA	**399**	661	430	375	849
Latin America	**568**	719	473	307	348
Asia	**109**	219	71	243	70
Total corporate non-accrual loans	**$1,877**	$3,527	$2,188	$1,511	$2,233
Consumer non-accrual loans[1]					
North America	**$ 759**	$1,059	$ 905	$1,138	$1,468
Latin America	**524**	774	632	638	688
Asia[2]	**219**	308	279	250	243
Total consumer non-accrual loans	**$1,502**	$2,141	$1,816	$2,026	$2,399
Total non-accrual loans	**$3,379**	$5,668	$4,004	$3,537	$4,632

(1) For years prior to 2020, excludes purchased credit-deteriorated loans, as they are generally accruing interest. The carrying value of these loans was $128 million at December 31, 2019, $128 million at December 31, 2018 and $167 million at December 31, 2017.
(2) *Asia GCB* includes balances in certain *EMEA* countries for all periods presented.

The changes in Citigroup's non-accrual loans were as follows:

	Year ended December 31, 2021			Year ended December 31, 2020		
In millions of dollars	**Corporate**	**Consumer**	**Total**	Corporate	Consumer	Total
Non-accrual loans at beginning of year	**$ 3,527**	**$ 2,141**	**$ 5,668**	$ 2,188	$ 1,816	$ 4,004
Additions	**1,708**	**2,018**	**3,726**	5,103	2,829	7,932
Sales and transfers to HFS	**(405)**	**(199)**	**(604)**	(2)	(95)	(97)
Returned to performing	**(217)**	**(615)**	**(832)**	(157)	(389)	(546)
Paydowns/settlements	**(2,215)**	**(630)**	**(2,845)**	(3,117)	(677)	(3,794)
Charge-offs	**(493)**	**(1,180)**	**(1,673)**	(446)	(1,132)	(1,578)
Other	**(28)**	**(33)**	**(61)**	(42)	(211)	(253)
Ending balance	**$ 1,877**	**$ 1,502**	**$ 3,379**	$ 3,527	$ 2,141	$ 5,668

The table below summarizes Citigroup's other real estate owned (OREO) assets. OREO is recorded on the Consolidated Balance Sheet within *Other assets*. This represents the carrying value of all real estate property acquired by foreclosure or other legal proceedings when Citi has taken possession of the collateral:

	December 31,				
In millions of dollars	**2021**	2020	2019	2018	2017
OREO					
North America	**$ 15**	$ 19	$ 39	$ 64	$ 89
EMEA	**—**	—	1	1	2
Latin America	**8**	7	14	12	35
Asia	**4**	17	7	22	18
Total OREO	**$ 27**	$ 43	$ 61	$ 99	$ 144
Non-accrual assets					
Corporate non-accrual loans	**$1,877**	$3,527	$2,188	$1,511	$2,233
Consumer non-accrual loans	**1,502**	2,141	1,816	2,026	2,399
Non-accrual loans (NAL)	**$3,379**	$5,668	$4,004	$3,537	$4,632
OREO	**$ 27**	$ 43	$ 61	$ 99	$ 144
Non-accrual assets (NAA)	**$3,406**	$5,711	$4,065	$3,636	$4,776
NAL as a percentage of total loans	**0.51%**	0.84%	0.57%	0.52%	0.69%
NAA as a percentage of total assets	**0.15**	0.25	0.21	0.19	0.26
ACLL as a percentage of NAL[1]	**487**	440	319	348	267

(1) The ACLL includes the allowance for Citi's credit card portfolios and purchased distressed loans, while the non-accrual loans exclude credit card balances (with the exception of certain international portfolios) and, prior to 2020, include purchased credit-deteriorated loans as these continue to accrue interest until charge-off.

Renegotiated Loans

The following table presents Citi's loans modified in TDRs:

In millions of dollars	Dec. 31, 2021	Dec. 31, 2020
Corporate renegotiated loans[1]		
In U.S. offices		
Commercial and industrial[2]	**$ 103**	$ 193
Mortgage and real estate	**51**	60
Financial institutions	**—**	—
Other	**32**	30
Total	**$ 186**	$ 283
In offices outside the U.S.		
Commercial and industrial[2]	**$ 133**	$ 132
Mortgage and real estate	**22**	32
Financial institutions	**—**	—
Other	**9**	3
Total	**$ 164**	$ 167
Total corporate renegotiated loans	**$ 350**	$ 450
Consumer renegotiated loans[3]		
In U.S. offices		
Mortgage and real estate	**$1,422**	$1,904
Cards	**1,269**	1,449
Installment and other	**26**	33
Total	**$2,717**	$3,386
In offices outside the U.S.		
Mortgage and real estate	**$ 223**	$ 361
Cards	**313**	533
Installment and other	**428**	519
Total	**$ 964**	$1,413
Total consumer renegotiated loans	**$3,681**	$4,799

(1) Includes $321 million and $415 million of non-accrual loans included in the non-accrual loans table above at December 31, 2021 and 2020, respectively. The remaining loans were accruing interest.
(2) In addition to modifications reflected as TDRs at December 31, 2021 and 2020, Citi also modified none and $47 million, respectively, of commercial loans risk rated "Substandard Non-Performing" or worse (asset category defined by banking regulators) in offices outside the U.S. These modifications were not considered TDRs because the modifications did not involve a concession or because the modifications qualified for exemptions from TDR accounting provided by the CARES Act or the interagency guidance.
(3) Includes $627 million and $873 million of non-accrual loans included in the non-accrual loans table above at December 31, 2021 and 2020, respectively. The remaining loans were accruing interest.

Forgone Interest Revenue on Loans[1]

In millions of dollars	In U.S. offices	In non-U.S. offices	2021 total
Interest revenue that would have been accrued at original contractual rates[2]	**$343**	**$346**	**$689**
Amount recognized as interest revenue[2]	**166**	**189**	**355**
Forgone interest revenue	**$177**	**$157**	**$334**

(1) Relates to corporate non-accrual loans, renegotiated loans and consumer loans on which accrual of interest has been suspended.
(2) Interest revenue in offices outside the U.S. may reflect prevailing local interest rates, including the effects of inflation and monetary correction in certain countries.

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 (for additional information, see "Resolution Plan" and "Total Loss-Absorbing Capacity (TLAC)" below). Citigroup's primary liquidity objectives are established by entity, and in aggregate, across two major categories:

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

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

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

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), as set forth in the table below.

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.

Citi's CRO and Chief Financial Officer co-chair Citigroup's ALCO, which includes Citi's Treasurer and other senior executives. The ALCO sets the strategy of the liquidity portfolio and monitors portfolio performance (for additional information about the ALCO, see "Risk Governance—Board and Executive Management Committees" above). Significant changes to portfolio asset allocations are approved by the ALCO. Citi also has other ALCOs, which are established at various organizational levels to ensure appropriate oversight for countries, franchise businesses and regions, serving as the primary governance committees for managing Citi's balance sheet and liquidity.

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

Liquidity Monitoring and Measurement

Stress Testing

Liquidity stress testing is performed for each of Citi's major entities, operating subsidiaries and/or countries. Stress testing and scenario analyses are intended to quantify the potential impact of an adverse liquidity event on the balance sheet and liquidity position, and to identify viable funding alternatives that can be utilized. These scenarios include assumptions about significant changes in key funding sources, market triggers (such as credit ratings), potential uses of funding and macroeconomic, geopolitical and other conditions. These conditions include expected and stressed market conditions as well as Company-specific events.

Liquidity stress tests are performed to ascertain potential mismatches between liquidity sources and uses over a variety of time horizons and over different stressed conditions. To monitor the liquidity of an entity, these stress tests and potential mismatches are calculated with varying frequencies, with several tests performed daily.

Given the range of potential stresses, Citi maintains contingency funding plans on a consolidated basis and for individual entities. These plans specify a wide range of readily available actions for a variety of adverse market conditions or idiosyncratic stresses.

High-Quality Liquid Assets (HQLA)

In billions of dollars	Citibank			Citi non-bank and other entities			Total		
	Dec. 31, 2021	Sept. 30, 2021	Dec. 31, 2020	**Dec. 31, 2021**	Sept. 30, 2021	Dec. 31, 2020	**Dec. 31, 2021**	Sept. 30, 2021	Dec. 31, 2020
Available cash	**$253.6**	$255.1	$304.3	**$ 2.6**	$ 3.5	$ 2.1	**$256.2**	$258.6	$306.4
U.S. sovereign	**119.6**	108.9	77.8	**63.1**	64.3	64.8	**182.7**	173.2	142.6
U.S. agency/agency MBS	**45.0**	45.3	31.8	**5.7**	6.0	6.5	**50.7**	51.3	38.3
Foreign government debt[1]	**48.9**	50.2	39.6	**13.6**	11.2	16.2	**62.5**	61.4	55.8
Other investment grade	**1.6**	1.8	1.2	**0.8**	0.3	0.5	**2.4**	2.1	1.7
Total HQLA (AVG)	**$468.7**	$461.2	$454.7	**$85.8**	$85.3	$90.1	**$554.5**	$546.5	$544.8

Note: The amounts set forth in the table above are presented on an average basis. For securities, the amounts represent the liquidity value that potentially could be realized and, therefore, exclude any securities that are encumbered and incorporate any haircuts applicable under the U.S. LCR rule. The table above incorporates various restrictions that could limit the transferability of liquidity between legal entities, including Section 23A of the Federal Reserve Act.

(1) Foreign government debt includes securities issued or guaranteed by foreign sovereigns, agencies and multilateral development banks. Foreign government debt securities are held largely to support local liquidity requirements and Citi's local franchises and principally include government bonds from Japan, Mexico, South Korea, India and Hong Kong.

The table above includes average amounts of HQLA held at Citigroup's operating entities that are eligible for inclusion in the calculation of Citigroup's consolidated Liquidity Coverage ratio (LCR), pursuant to the U.S. LCR rules. These amounts include the HQLA needed to meet the minimum requirements at these entities and any amounts in excess of these minimums that are assumed to be transferable to other entities within Citigroup. Citigroup's HQLA increased quarter-over-quarter as of the fourth quarter of 2021, primarily reflecting an increase in deposits.

As of December 31, 2021, Citigroup had $961 billion of available liquidity resources to support client and business needs, including end-of-period HQLA assets; additional unencumbered securities, including excess liquidity held at bank entities that is non-transferable to other entities within Citigroup; and available assets not already accounted for within Citi's HQLA to support Federal Home Loan Bank (FHLB) and Federal Reserve Bank discount window borrowing capacity.

Short-Term Liquidity Measurement: Liquidity Coverage Ratio (LCR)

In addition to internal 30-day liquidity stress testing performed for Citi's major entities, operating subsidiaries and countries, Citi also monitors its liquidity by reference to the LCR.

The LCR is calculated by dividing HQLA by estimated net outflows assuming a stressed 30-day period, with the net outflows determined by standardized stress outflow and inflow rates prescribed in the LCR rule. The outflows are partially offset by contractual inflows from assets maturing within 30 days. Similar to outflows, the inflows are calculated based on prescribed factors to various assets categories, such as retail loans as well as unsecured and secured wholesale lending. The minimum LCR requirement is 100%.

The table below details the components of Citi's LCR calculation and HQLA in excess of net outflows for the periods indicated:

In billions of dollars	**Dec. 31, 2021**	Sept. 30, 2021	Dec. 31, 2020
HQLA	**$554.5**	$546.5	$544.8
Net outflows	**482.9**	474.8	460.7
LCR	**115%**	115%	118%
HQLA in excess of net outflows	**$ 71.6**	$ 71.7	$ 84.1

Note: The amounts are presented on an average basis.

As of December 31, 2021, Citi's average LCR was unchanged sequentially, as Citi's average HQLA and net outflows increased proportionately.

Long-Term Liquidity Measurement: Net Stable Funding Ratio (NSFR)

As previously disclosed, in October 2020, the U.S. banking agencies adopted a final rule to assess the availability of a bank's stable funding against a required level.

In general, a bank's available stable funding includes portions of equity, deposits and long-term debt, while its required stable funding will be based on the liquidity characteristics of its assets, derivatives and commitments. Standardized weightings are required to be applied to the various asset and liabilities classes. The ratio of available stable funding to required stable funding is required to be greater than 100%.

The final rule became effective beginning July 1, 2021, while public disclosure requirements to report the ratio will occur on a semiannual basis beginning June 30, 2023. Citi was in compliance with the final rule as of December 31, 2021.

Loans

As part of its funding and liquidity objectives, Citi seeks to fund its existing asset base appropriately as well as maintain sufficient liquidity to grow its *GCB* and *ICG* businesses, including its loan portfolio. Citi maintains a diversified portfolio of loans to its consumer and institutional clients. The table below details the average loans, by business and/or segment, and the total end-of-period loans for each of the periods indicated:

In billions of dollars	**Dec. 31, 2021**	Sept. 30, 2021	Dec. 31, 2020
Global Consumer Banking			
North America	**$176.8**	$173.8	$179.4
Latin America	**13.0**	13.2	14.3
Asia[1]	**72.5**	75.9	82.4
Total	**$262.3**	$262.9	$276.1
Institutional Clients Group			
Corporate lending	**$127.5**	$129.2	$146.2
Treasury and trade solutions (TTS)	**76.3**	73.7	67.1
Private bank	**124.5**	125.9	113.3
Markets and securities services and other	**72.5**	72.0	56.1
Total	**$400.8**	$400.8	$382.7
Total *Corporate/Other*	**$ 4.3**	$ 4.7	$ 7.4
Total Citigroup loans (AVG)	**$667.4**	$668.5	$666.2
Total Citigroup loans (EOP)	**$667.8**	$664.8	$676.1

(1) Includes loans in certain *EMEA* countries for all periods presented.

As of the fourth quarter of 2021, end-of period loans declined 1% year-over-year and were largely unchanged quarter-over-quarter.

On an average basis, loans were largely unchanged both year-over-year and sequentially. Excluding the impact of FX translation, average loans increased 1% year-over-year and were largely unchanged sequentially. On this basis, average *GCB* loans declined 4% year-over-year, primarily reflecting the reclassification of loans to held-for-sale as a result of Citi's entry into agreements to sell its consumer banking businesses in Australia and the Philippines.

Excluding the impact of FX translation, average *ICG* loans increased 5% year-over-year. Loans in corporate lending declined 12% on an average basis, reflecting net repayments as Citi continued to assist its clients in accessing the capital markets, as well as lower demand. Private bank loans increased 10%, largely driven by increased secured lending to high-net-worth clients. *Markets and securities services* loans increased 29%, reflecting an increase in securitization financing. TTS loans increased 15%, reflecting an increase in trade flows and originations.

Average *Corporate/Other* loans continued to decline (down 46%), driven by the wind-down of legacy assets.

Deposits

The table below details the average deposits, by business and/or segment, and the total end-of-period deposits for each of the periods indicated:

In billions of dollars	**Dec. 31, 2021**	Sept. 30, 2021	Dec. 31, 2020
Global Consumer Banking[1]			
North America	**$ 214.0**	$ 208.4	$ 188.9
Latin America	**23.8**	24.2	24.3
Asia[2]	**117.2**	120.7	120.0
Total	**$ 355.0**	$ 353.3	$ 333.2
Institutional Clients Group			
Treasury and trade solutions (TTS)	**$ 690.6**	$ 674.8	$ 686.5
Banking ex-TTS	**188.2**	179.5	163.2
Markets and securities services	**129.3**	127.2	109.3
Total	**$1,008.1**	$ 981.6	$ 959.0
Corporate/Other	**$ 7.2**	$ 8.2	$ 13.1
Total Citigroup deposits (AVG)	**$1,370.3**	$1,343.0	$1,305.3
Total Citigroup deposits (EOP)	**$1,317.2**	$1,347.5	$1,280.7

(1) Reflects deposits within retail banking.
(2) Includes deposits in certain *EMEA* countries for all periods presented.

End-of-period deposits increased 3% year-over-year and declined 2% sequentially.

As of the fourth quarter of 2021, on an average basis, deposits increased 5% year-over-year and 2% sequentially. Excluding the impact of FX translation, average deposits grew 6% from the prior-year period and 3% sequentially. The year-over-year increase reflected continued client engagement as well as the elevated level of liquidity in the financial system. Excluding the impact of FX translation, average deposits in *GCB* increased 7%, with continued strong growth in *North America*.

Excluding the impact of FX translation, average deposits in *ICG* grew 6% year-over-year, with strong growth in the private bank and securities services.

Long-Term Debt

Long-term debt (generally defined as debt with original maturities of one year or more) represents the most significant component of Citi's funding for the Citigroup parent company and Citi's non-bank subsidiaries and is a supplementary source of funding for the bank entities.

Long-term debt is an important funding source due in part to its multiyear contractual maturity structure. The weighted-average maturity of unsecured long-term debt issued by Citigroup and its affiliates (including Citibank) with a remaining life greater than one year was approximately 8.6 years as of December 31, 2021, unchanged from the prior quarter and the prior year. The weighted-average maturity is calculated based on the contractual maturity of each security. For securities that are redeemable prior to maturity at the option of the holder, the weighted-average maturity is calculated based on the earliest date an option becomes exercisable.

Citi's long-term debt outstanding at the Citigroup parent company includes benchmark senior and subordinated debt and what Citi refers to as customer-related debt, consisting of structured notes, such as equity- and credit-linked notes, as well as non-structured notes. Citi's issuance of customer-related debt is generally driven by customer demand and complements benchmark debt issuance as a source of funding for Citi's non-bank entities. Citi's long-term debt at the bank includes Citibank benchmark senior debt, FHLB borrowings and securitizations.

Long-Term Debt Outstanding

The following table sets forth Citi's end-of-period total long-term debt outstanding for each of the dates indicated:

In billions of dollars	**Dec. 31, 2021**	Sept. 30, 2021	Dec. 31, 2020
Non-bank[1]			
Benchmark debt:			
Senior debt	**$117.8**	$123.9	$126.2
Subordinated debt	**25.7**	26.0	27.1
Trust preferred	**1.7**	1.7	1.7
Customer-related debt	**78.3**	74.7	65.2
Local country and other[2]	**7.3**	7.2	6.7
Total non-bank	**$230.8**	$233.5	$226.9
Bank			
FHLB borrowings	**$ 5.3**	$ 5.8	$ 10.9
Securitizations[3]	**9.6**	11.0	16.6
Citibank benchmark senior debt	**3.6**	3.6	13.6
Local country and other[2]	**5.1**	4.3	3.6
Total bank	**$ 23.6**	$ 24.7	$ 44.7
Total long-term debt	**$254.4**	$258.2	$271.7

Note: Amounts represent the current value of long-term debt on Citi's Consolidated Balance Sheet that, for certain debt instruments, includes consideration of fair value, hedging impacts and unamortized discounts and premiums.

(1) Non-bank includes long-term debt issued to third parties by the parent holding company (Citigroup) and Citi's non-bank subsidiaries (including broker-dealer subsidiaries) that are consolidated into Citigroup. As of December 31, 2021, non-bank included $65.9 billion of long-term debt issued by Citi's broker-dealer and other subsidiaries; as well as certain Citigroup consolidated hedging activities.

(2) Local country and other includes debt issued by Citi's affiliates in support of their local operations. Within non-bank, certain secured financing is also included. Within bank, borrowings under certain U.S. government-sponsored liquidity programs are also included.

(3) Predominantly credit card securitizations, primarily backed by branded credit card receivables.

As of the fourth quarter of 2021, Citi's total long-term debt outstanding decreased year-over-year, primarily driven by declines in unsecured benchmark senior debt at the non-bank entities and the bank, as well as securitizations and FHLB borrowings at the bank. The decrease in total long-term debt was partially offset by the issuance of customer-related debt at the non-bank entities. Sequentially, long-term debt outstanding decreased, driven primarily by decreases in unsecured benchmark senior debt at the non-bank entities and securitizations at the bank, partially offset by the issuance of customer-related debt at the non-bank entities.

As part of its liability management, Citi also has considered, and may continue to consider, opportunities to redeem or repurchase its long-term debt pursuant to open market purchases, tender offers or other means. Such redemptions and repurchases help reduce Citi's overall funding costs. During 2021, Citi redeemed or repurchased an aggregate of approximately $33.8 billion of its outstanding long-term debt.

Long-Term Debt Issuances and Maturities

The table below details Citi's long-term debt issuances and maturities (including repurchases and redemptions) during the periods presented:

	2021		2020		2019	
In billions of dollars	**Maturities**	**Issuances**	Maturities	Issuances	Maturities	Issuances
Non-bank						
Benchmark debt:						
Senior debt	**$17.6**	**$15.4**	$ 6.5	$20.4	$16.5	$16.2
Subordinated debt	**—**	**—**	—	—	—	—
Trust preferred	**—**	**—**	—	—	—	—
Customer-related debt	**31.2**	**48.7**	27.7	36.8	12.7	25.1
Local country and other	**3.3**	**3.6**	2.4	1.4	1.1	5.4
Total non-bank	**$52.1**	**$67.7**	$36.6	$58.6	$30.3	$46.7
Bank						
FHLB borrowings	**$ 5.7**	**$ —**	$ 7.5	$12.9	$ 7.1	$ 2.1
Securitizations	**6.1**	**—**	4.6	0.3	7.9	0.1
Citibank benchmark senior debt	**9.8**	**—**	9.8	—	4.8	8.8
Local country and other	**1.2**	**2.9**	4.9	4.6	0.9	1.4
Total bank	**$22.8**	**$ 2.9**	$26.8	$17.8	$20.7	$12.4
Total	**$74.9**	**$70.6**	$63.4	$76.4	$51.0	$59.1

The table below shows Citi's aggregate long-term debt maturities (including repurchases and redemptions) in 2021, as well as its aggregate expected remaining long-term debt maturities by year as of December 31, 2021:

		Maturities						
In billions of dollars	**2021**	2022	2023	2024	2025	2026	Thereafter	Total
Non-bank								
Benchmark debt:								
Senior debt	**$17.6**	$ 8.2	$12.6	$11.0	$10.7	$18.2	$ 57.1	$117.8
Subordinated debt	**—**	0.8	1.3	1.0	5.2	2.6	14.8	25.7
Trust preferred	**—**	—	—	—	—	—	1.7	1.7
Customer-related debt	**31.2**	11.9	10.2	8.5	4.9	5.5	37.3	78.3
Local country and other	**3.3**	2.3	2.2	0.1	—	0.7	1.8	7.3
Total non-bank	**$52.1**	$23.2	$26.3	$20.6	$20.8	$27.0	$112.7	$230.8
Bank								
FHLB borrowings	**$ 5.7**	$ 5.3	$ —	$ —	$ —	$ —	$ —	$ 5.3
Securitizations	**6.1**	2.1	3.3	1.4	0.4	—	2.4	9.6
Citibank benchmark senior debt	**9.8**	0.9	—	2.7	—	—	—	3.6
Local country and other	**1.2**	1.5	0.9	0.9	0.1	0.1	1.6	5.1
Total bank	**$22.8**	$ 9.8	$ 4.2	$ 5.0	$ 0.5	$ 0.1	$ 4.0	$ 23.6
Total long-term debt	**$74.9**	$33.0	$30.5	$25.6	$21.3	$27.1	$116.7	$254.4

Resolution Plan

Citi is required under Title I of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act) and the rules promulgated by the FDIC and Federal Reserve Board to periodically submit a plan for Citi's rapid and orderly resolution under the U.S. Bankruptcy Code in the event of material financial distress or failure.

On December 17, 2019, the Federal Reserve Board and FDIC issued feedback on the resolution plans filed on July 1, 2019 by the eight U.S. Global Systemically Important Banks, including Citigroup. The Federal Reserve Board and FDIC identified one shortcoming, but no deficiencies, in Citigroup's resolution plan relating to governance mechanisms. Based on regulatory changes effective December 31, 2019, Citigroup's 2021 resolution plan submission, which was filed on July 1, 2021 was a targeted resolution plan, only including a subset of the information of a full resolution plan and additional information, identified by the Federal Reserve Board and FDIC on July 1, 2020. Citigroup will alternate between submitting a full resolution plan and a targeted resolution plan on a biennial cycle. For additional information on Citi's resolution plan submissions, see "Risk Factors—Strategic Risks" above. Citigroup's preferred resolution strategy is "single point of entry" under the U.S. Bankruptcy Code.

Under Citi's preferred "single point of entry" resolution plan strategy, only Citigroup, the parent holding company, would enter into bankruptcy, while Citigroup's material legal entities (as defined in the public section of its 2021 resolution plan, which can be found on the Federal Reserve Board's and FDIC's websites) would remain operational outside of any resolution or insolvency proceedings. Citigroup's resolution plan has been designed to minimize the risk of systemic impact to the U.S. and global financial systems, while maximizing the value of the bankruptcy estate for the benefit of Citigroup's creditors, including its unsecured long-term debt holders.

In addition, in line with the Federal Reserve Board's final total loss-absorbing capacity (TLAC) rule, Citigroup believes it has developed the resolution plan so that Citigroup's shareholders and unsecured creditors—including its unsecured long-term debt holders—bear any losses resulting from Citigroup's bankruptcy. Accordingly, any value realized by holders of its unsecured long-term debt may not be sufficient to repay the amounts owed to such debt holders in the event of a bankruptcy or other resolution proceeding of Citigroup.

The FDIC has also indicated that it was developing a single point of entry strategy to implement the Orderly Liquidation Authority under Title II of the Dodd-Frank Act, which provides the FDIC with the ability to resolve a firm when it is determined that bankruptcy would have serious adverse effects on financial stability in the U.S.

As previously disclosed, in response to feedback received from the Federal Reserve Board and FDIC, Citigroup took the following actions:

(i) Citicorp LLC (Citicorp), an existing wholly owned subsidiary of Citigroup, was established as an intermediate holding company (an IHC) for certain of Citigroup's operating material legal entities;

(ii) Citigroup executed an inter-affiliate agreement with Citicorp, Citigroup's operating material legal entities and certain other affiliated entities pursuant to which Citicorp is required to provide liquidity and capital support to Citigroup's operating material legal entities in the event Citigroup were to enter bankruptcy proceedings (Citi Support Agreement);

(iii) pursuant to the Citi Support Agreement:

- Citigroup made an initial contribution of assets, including certain high-quality liquid assets and inter-affiliate loans (Contributable Assets), to Citicorp, and Citicorp became the business-as-usual funding vehicle for Citigroup's operating material legal entities;
- Citigroup will be obligated to continue to transfer Contributable Assets to Citicorp over time, subject to certain amounts retained by Citigroup to, among other things, meet Citigroup's near-term cash needs;
- in the event of a Citigroup bankruptcy, Citigroup will be required to contribute most of its remaining assets to Citicorp; and

(iv) the obligations of both Citigroup and Citicorp under the Citi Support Agreement, as well as the Contributable Assets, are secured pursuant to a security agreement.

The Citi Support Agreement provides two mechanisms, besides Citicorp's issuing of dividends to Citigroup, pursuant to which Citicorp will be required to transfer cash to Citigroup during business as usual so that Citigroup can fund its debt service as well as other operating needs: (i) one or more funding notes issued by Citicorp to Citigroup and (ii) a committed line of credit under which Citicorp may make loans to Citigroup.

Total Loss-Absorbing Capacity (TLAC)

U.S. GSIBs are required to maintain minimum levels of TLAC and eligible LTD, each set by reference to the GSIB's consolidated risk-weighted assets (RWA) and total leverage exposure. The intended purpose of the requirements is to facilitate the orderly resolution of U.S. GSIBs under the U.S. Bankruptcy Code and Title II of the Dodd-Frank Act. For additional information, including Citi's TLAC and LTD amounts and ratios, see "Capital Resources—Current Regulatory Capital Standards" and "Risk Factors—Compliance Risks" above.

SECURED FUNDING TRANSACTIONS AND SHORT-TERM BORROWINGS

Citi supplements its primary sources of funding with short-term financings that generally include (i) secured funding transactions consisting of securities loaned or sold under agreements to repurchase, i.e., repos, and (ii) to a lesser extent, short-term borrowings consisting of commercial paper and borrowings from the FHLB and other market participants.

Secured Funding Transactions

Secured funding is primarily accessed through Citi's broker-dealer subsidiaries to fund efficiently both (i) secured lending activity and (ii) a portion of the securities inventory held in the context of market-making and customer activities. Citi also executes a smaller portion of its secured funding transactions through its bank entities, which are typically collateralized by government debt securities. Generally, daily changes in the level of Citi's secured funding are primarily due to fluctuations in secured lending activity in the matched book (as described below) and securities inventory.

Secured funding of $191 billion as of December 31, 2021 decreased 3% from the prior-year period and 9% sequentially. Excluding the impact of FX translation, secured funding decreased 1% from the prior-year period and 8% sequentially, driven by normal business activity. The average balance for secured funding was approximately $222 billion for the quarter ended December 31, 2021.

The portion of secured funding in the broker-dealer subsidiaries that funds secured lending is commonly referred to as "matched book" activity. The majority of this activity is secured by high-quality liquid securities such as U.S. Treasury securities, U.S. agency securities and foreign government debt securities. Other secured funding is secured by less liquid securities, including equity securities, corporate bonds and asset-backed securities, the tenor of which is generally equal to or longer than the tenor of the corresponding matched book assets.

The remainder of the secured funding activity in the broker-dealer subsidiaries serves to fund securities inventory held in the context of market-making and customer activities. To maintain reliable funding under a wide range of market conditions, including under periods of stress, Citi manages these activities by taking into consideration the quality of the underlying collateral and establishing minimum required funding tenors. The weighted average maturity of Citi's secured funding of less liquid securities inventory was greater than 110 days as of December 31, 2021.

Citi manages the risks in its secured funding by conducting daily stress tests to account for changes in capacity, tenor, haircut, collateral profile and client actions. In addition, Citi maintains counterparty diversification by establishing concentration triggers and assessing counterparty reliability and stability under stress. Citi generally sources secured funding from more than 150 counterparties.

Short-Term Borrowings

Citi's short-term borrowings of $28 billion as of the fourth quarter of 2021 decreased 5% year-over-year, reflecting a decline in FHLB advances, and 6% sequentially, primarily driven by a decline in structured notes (see Note 17 to the Consolidated Financial Statements for further information on Citigroup's and its affiliates' outstanding short-term borrowings).

CREDIT RATINGS

Citigroup's funding and liquidity, funding capacity, ability to access capital markets and other sources of funds, the cost of these funds and its ability to maintain certain deposits are partially dependent on its credit ratings.

The table below shows the ratings for Citigroup and Citibank as of December 31, 2021. While not included in the table below, the long-term and short-term ratings of Citigroup Global Markets Holding Inc. (CGMHI) were BBB+/A-2 at S&P Global Ratings and A+/F1 at Fitch as of December 31, 2021.

	Citigroup Inc.			Citibank, N.A.		
Ratings as of December 31, 2021	**Senior debt**	**Commercial paper**	**Outlook**	**Long-term**	**Short-term**	**Outlook**
Fitch Ratings	A	F1	Stable	A+	F1	Stable
Moody's Investors Service	A3	P-2	Stable	Aa3	P-1	Stable
S&P Global Ratings	BBB+	A-2	Stable	A+	A-1	Stable

Potential Impacts of Ratings Downgrades

Ratings downgrades by Moody's, Fitch or S&P Global Ratings could negatively impact Citigroup's and/or Citibank's funding and liquidity due to reduced funding capacity, including derivative triggers, which could take the form of cash obligations and collateral requirements.

The following information is provided for the purpose of analyzing the potential funding and liquidity impact to Citigroup and Citibank of a hypothetical simultaneous ratings downgrade across all three major rating agencies. This analysis is subject to certain estimates, estimation methodologies, judgments and uncertainties. Uncertainties include potential ratings limitations that certain entities may have with respect to permissible counterparties, as well as general subjective counterparty behavior. For example, certain corporate customers and markets counterparties could re-evaluate their business relationships with Citi and limit transactions in certain contracts or market instruments with Citi. Changes in counterparty behavior could impact Citi's funding and liquidity, as well as the results of operations of certain of its businesses. The actual impact to Citigroup or Citibank is unpredictable and may differ materially from the potential funding and liquidity impacts described below. For additional information on the impact of credit rating changes on Citi and its applicable subsidiaries, see "Risk Factors—Liquidity Risks" above.

Citigroup Inc. and Citibank—Potential Derivative Triggers

As of December 31, 2021, Citi estimates that a hypothetical one-notch downgrade of the senior debt/long-term rating of Citigroup Inc. across all three major rating agencies could impact Citigroup's funding and liquidity due to derivative triggers by approximately $0.8 billion, compared to $1.1 billion as of September 30, 2021. Other funding sources, such as secured financing transactions and other margin requirements, for which there are no explicit triggers, could also be adversely affected.

As of December 31, 2021, Citi estimates that a hypothetical one-notch downgrade of the senior debt/long-term rating of Citibank across all three major rating agencies could impact Citibank's funding and liquidity due to derivative triggers by approximately $0.6 billion, compared to $0.5 billion as of September 30, 2021. Other funding sources, such as secured financing transactions and other margin requirements, for which there are no explicit triggers, could also be adversely affected.

In total, as of December 31, 2021, Citi estimates that a one-notch downgrade of Citigroup and Citibank across all three major rating agencies could result in increased aggregate cash obligations and collateral requirements of approximately $1.4 billion, compared to $1.6 billion as of September 30, 2021 (see also Note 22 to the Consolidated Financial Statements). As detailed under "High-Quality Liquid Assets" above, Citigroup has various liquidity resources available to its bank and non-bank entities in part as a contingency for the potential events described above.

In addition, a broad range of mitigating actions are currently included in Citigroup's and Citibank's contingency funding plans. For Citigroup, these mitigating factors include, but are not limited to, accessing surplus funding capacity from existing clients, tailoring levels of secured lending and adjusting the size of select trading books and collateralized borrowings at certain Citibank subsidiaries. Mitigating actions available to Citibank include, but are not limited to, selling or financing highly liquid government securities, tailoring levels of secured lending, adjusting the size of select trading assets, reducing loan originations and renewals, raising additional deposits or borrowing from the FHLB or central banks. Citi believes these mitigating actions could substantially reduce the funding and liquidity risk, if any, of the potential downgrades described above.

Citibank—Additional Potential Impacts

In addition to the above derivative triggers, Citi believes that a potential downgrade of Citibank's senior debt/long-term rating across any of the three major rating agencies could also have an adverse impact on the commercial paper/short-term rating of Citibank. Citibank has provided liquidity commitments to consolidated asset-backed commercial paper conduits, primarily in the form of asset purchase agreements. As of December 31, 2021, Citibank had liquidity commitments of approximately $9.0 billion to consolidated asset-backed commercial paper conduits, compared to $10.0 billion as of September 30, 2021 (for additional information, see Note 21 to the Consolidated Financial Statements).

In addition to the above-referenced liquidity resources of certain Citibank entities, Citibank could reduce the funding and liquidity risk, if any, of the potential downgrades described above through mitigating actions, including repricing or reducing certain commitments to commercial paper conduits. In the event of the potential downgrades described above, Citi believes that certain corporate customers could re-evaluate their deposit relationships with Citibank. This re-evaluation could result in clients adjusting their discretionary deposit levels or changing their depository institution, which could potentially reduce certain deposit levels at Citibank. However, Citi could choose to adjust pricing, offer alternative deposit products to its existing customers or seek to attract deposits from new customers, in addition to the mitigating actions referenced above.

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 NON-TRADING PORTFOLIOS

Market risk from non-trading portfolios stems from the potential impact of changes in interest rates and foreign exchange rates on Citi's net interest income, and on Citi's *Accumulated other comprehensive income (loss) (AOCI)* from its debt securities portfolios. Market risk from non-trading portfolios also includes the potential impact of changes in foreign exchange rates on Citi's capital invested in foreign currencies.

Net Interest Income at Risk

Net interest income, for interest rate exposure purposes, is the difference between the yield earned on the non-trading portfolio assets (including customer loans) and the rate paid on the liabilities (including customer deposits or company borrowings). Net interest income is affected by changes in the level of interest rates, as well as the amounts and mix of assets and liabilities, and the timing of contractual and assumed repricing of assets and liabilities to reflect market rates.

Citi's principal measure of risk to net interest income is interest rate exposure (IRE). IRE measures the change in expected net interest income in each currency resulting solely from unanticipated changes in forward interest rates.

Citi's estimated IRE incorporates various assumptions including prepayment rates on loans, customer behavior and the impact of pricing decisions. For example, in rising interest rate scenarios, portions of the deposit portfolio may be assumed to experience rate increases that are less than the change in market interest rates. In declining interest rate scenarios, it is assumed that mortgage portfolios experience higher prepayment rates. Citi's estimated IRE below assumes that its businesses and/or Citi Treasury make no additional changes in balances or positioning in response to the unanticipated rate changes.

Citi is planning to transition the sensitivity analysis for its IRE (see the current IRE sensitivity impacts below), employing enhanced methodologies and changes to certain assumptions. The changes include, among other things, assumptions around the projected balance sheet (being more static), coupled with revisions to the treatment of certain business contributions to IRE, mainly accrual positions in *ICG's Markets* businesses. These changes are planned for 2022, and will result in a higher impact to Citi's NII and *AOCI* and a better reflection of the nature of the portfolios.

In order to manage changes in interest rates effectively, Citi may modify pricing on new customer loans and deposits, purchase fixed-rate securities, issue debt that is either fixed or floating or enter into derivative transactions that have the opposite risk exposures. Citi regularly assesses the viability of these and other strategies to reduce its interest rate risks and implements such strategies when it believes those actions are prudent.

Citi manages interest rate risk as a consolidated Company-wide position. Citi's client-facing businesses create interest rate-sensitive positions, including loans and deposits, as part of their ongoing activities. Citi Treasury aggregates these risk positions and manages them centrally. Operating within established limits, Citi Treasury makes positioning decisions and uses tools, such as Citi's investment securities portfolio, company-issued debt and interest rate derivatives, to target the desired risk profile. Changes in Citi's interest rate risk position reflect the accumulated changes in all non-trading assets and liabilities, with potentially large and offsetting impacts, as well as in Citi Treasury's positioning decisions.

Citigroup employs additional measurements, including stress testing the impact of non-linear interest rate movements on the value of the balance sheet, and the analysis of portfolio duration and volatility, particularly as they relate to mortgage loans and mortgage-backed securities and the potential impact of the change in the spread between different market indices.

Interest Rate Risk of Investment Portfolios–Impact on *AOCI*

Citi also measures the potential impacts of changes in interest rates on the value of its *AOCI*, which can in turn impact Citi's common equity and tangible common equity. This will impact Citi's Common Equity Tier 1 and other regulatory capital ratios. Citi's goal is to benefit from an increase in the market level of interest rates, while limiting the impact of changes in *AOCI* on its regulatory capital position.

AOCI at risk is managed as part of the Company-wide interest rate risk position. *AOCI* at risk considers potential changes in *AOCI* (and the corresponding impact on the Common Equity Tier 1 Capital ratio) relative to Citi's capital generation capacity.

The following table sets forth the estimated impact to Citi's net interest income, *AOCI* and the Common Equity Tier 1 Capital ratio (on a fully implemented basis), each assuming an unanticipated parallel instantaneous 100 basis point (bps) increase in interest rates:

In millions of dollars, except as otherwise noted	**Dec. 31, 2021**	Sept. 30, 2021	Dec. 31, 2020
Estimated annualized impact to net interest income			
U.S. dollar[1]	**$ 563**	$ 151	$ 373
All other currencies	**612**	586	683
Total	**$ 1,175**	$ 737	$ 1,056
As a percentage of average interest-earning assets	**0.05%**	0.03%	0.05%
Estimated initial negative impact to *AOCI* (after-tax)[2]	**$(4,609)**	$(4,914)	$(5,645)
Estimated initial impact on Common Equity Tier 1 Capital ratio (bps)	**(30)**	(30)	(34)

(1) Certain trading-oriented businesses within Citi have accrual-accounted positions that are excluded from the estimated impact to net interest income in the table, since these exposures are managed economically in combination with mark-to-market positions. The U.S. dollar interest rate exposure associated with these businesses was $(179) million for a 100 bps instantaneous increase in interest rates as of December 31, 2021.
(2) Includes the effect of changes in interest rates on *AOCI* related to investment securities, cash flow hedges and pension liability adjustments.

The year-over-year increase in the estimated impact to net interest income primarily reflected changes in Citi's balance sheet composition and Citi Treasury positioning. The year-over-year changes in the estimated impact to *AOCI* and the Common Equity Tier 1 Capital ratio primarily reflected the impact of the composition of Citi Treasury's investment and derivatives portfolio.

In the event of a parallel instantaneous 100 bps increase in interest rates, Citi expects that the negative impact to *AOCI* would be offset in shareholders' equity through the expected recovery of the impact on *AOCI* through accretion of Citi's investment portfolio over a period of time. As of December 31, 2021, Citi expects that the $4.6 billion negative impact to *AOCI* in such a scenario could potentially be offset over approximately 27 months.

The following table sets forth the estimated impact to Citi's net interest income, *AOCI* and the Common Equity Tier 1 Capital ratio (on a fully implemented basis) under five different changes in interest rate scenarios for the U.S. dollar and Citi's other currencies. The 100 bps downward rate scenarios are impacted by the low level of interest rates in several countries and the assumption that market interest rates, as well as rates paid to depositors and charged to borrowers, do not fall below zero (i.e., the "flooring assumption"). The rate scenarios are also impacted by convexity related to mortgage products.

In millions of dollars, except as otherwise noted	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**	**Scenario 5**
Overnight rate change (bps)	100	100	—	—	(100)
10-year rate change (bps)	100	—	100	(100)	(100)
Estimated annualized impact to net interest income					
U.S. dollar	$ 563	$ 647	$ 86	$ (244)	$ (770)
All other currencies	612	655	41	(41)	(353)
Total	$ 1,175	$ 1,302	$ 127	$ (285)	$(1,123)
Estimated initial impact to *AOCI* (after-tax)[1]	$(4,609)	$(2,934)	$(1,757)	$1,373	$ 3,050
Estimated initial impact to Common Equity Tier 1 Capital ratio (bps)	(30)	(19)	(12)	9	18

Note: Each scenario assumes that the rate change will occur instantaneously. Changes in interest rates for maturities between the overnight rate and the 10-year rate are interpolated.
(1) Includes the effect of changes in interest rates on *AOCI* related to investment securities, cash flow hedges and pension liability adjustments.

As shown in the table above, the magnitude of the impact to Citi's net interest income and *AOCI* is greater under Scenario 2 as compared to Scenario 3. This is because the combination of changes to Citi's investment portfolio, partially offset by changes related to Citi's pension liabilities, results in a net position that is more sensitive to rates at shorter- and intermediate-term maturities.

Changes in Foreign Exchange Rates–Impacts on *AOCI* and Capital

As of December 31, 2021, Citi estimates that an unanticipated parallel instantaneous 5% appreciation of the U.S. dollar against all of the other currencies in which Citi has invested capital could reduce Citi's tangible common equity (TCE) by approximately $1.5 billion, or 0.9%, as a result of changes to Citi's FX translation adjustment in *AOCI*, net of hedges. This impact would be primarily due to changes in the value of the Mexican peso, Euro, Singapore dollar and Indian rupee.

This impact is also before any mitigating actions Citi may take, including ongoing management of its FX translation exposure. Specifically, as currency movements change the value of Citi's net investments in foreign currency-denominated capital, these movements also change the value of Citi's risk-weighted assets denominated in those currencies. This, coupled with Citi's foreign currency hedging strategies, such as foreign currency borrowings, foreign currency forwards and other currency hedging instruments, lessens the impact of foreign currency movements on Citi's Common Equity Tier 1 Capital ratio. Changes in these hedging strategies, as well as hedging costs, divestitures and tax impacts, can further affect the actual impact of changes in foreign exchange rates on Citi's capital as compared to an unanticipated parallel shock, as described above.

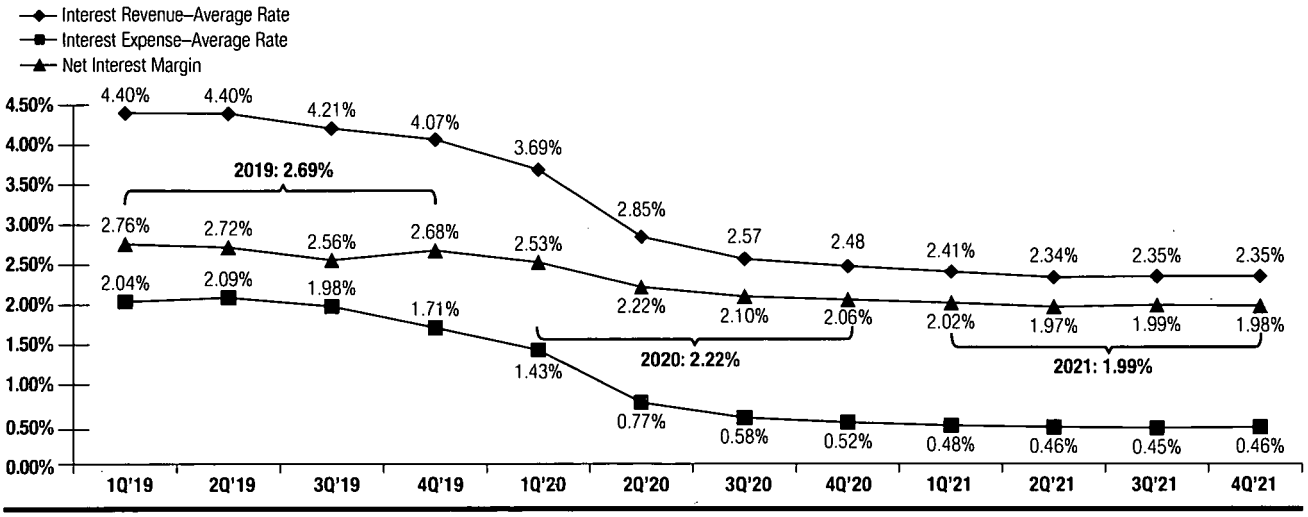
In addition, the effect of Citi's ongoing management strategies with respect to quarterly changes in foreign exchange rates, and the quarterly impact of these changes on Citi's TCE and Common Equity Tier 1 Capital ratio, are shown in the table below. For additional information on the changes in *AOCI*, see Note 19 to the Consolidated Financial Statements.

	For the quarter ended		
In millions of dollars, except as otherwise noted	**Dec. 31, 2021**	Sept. 30, 2021	Dec. 31, 2020
Change in FX spot rate[1]	**(0.6)%**	(2.7)%	5.5%
Change in TCE due to FX translation, net of hedges	**$ (438)**	$(1,042)	$1,829
As a percentage of TCE	**(0.3)%**	(0.7)%	1.2%
Estimated impact to Common Equity Tier 1 Capital ratio (on a fully implemented basis) due to changes in FX translation, net of hedges (bps)	**(1)**	(1)	2

(1) FX spot rate change is a weighted average based on Citi's quarterly average GAAP capital exposure to foreign countries.

Interest Revenue/Expense and Net Interest Margin (NIM)

Average Rates—Interest Revenue, Interest Expense, and Net Interest Margin



In millions of dollars, except as otherwise noted	**2021**	2020	2019	**Change 2021 vs. 2020**	Change 2020 vs. 2019
Interest revenue[1]	**$50,667**	$58,285	$76,718	**(13)%**	(24)%
Interest expense[2]	**7,981**	13,338	28,382	**(40)**	(53)
Net interest income, taxable equivalent basis[1]	**$42,686**	$44,947	$48,336	**(5)%**	(7)%
Interest revenue—average rate[3]	**2.36%**	2.88%	4.27%	**(52)bps**	(139)bps
Interest expense—average rate	**0.46**	0.81	1.95	**(35)bps**	(114)bps
Net interest margin[3][4]	**1.99**	2.22	2.69	**(23)bps**	(47)bps
Interest rate benchmarks					
Two-year U.S. Treasury note—average rate	**0.27%**	0.39%	1.97%	**(12)bps**	(158)bps
10-year U.S. Treasury note—average rate	**1.45**	0.89	2.14	**56bps**	(125)bps
10-year vs. two-year spread	**118bps**	50bps	17bps		

Note: Revenue previously referred to as net interest revenue is now referred to as net interest income. In addition, during the fourth quarter of 2021, Citi reclassified deposit insurance expenses (FDIC and other similar insurance assessments outside of the U.S.) from *Interest expense* to *Other operating expenses* for all periods presented. Amounts reclassified for each year were $1,207 million for 2021, $1,203 million for 2020 and $781 million for 2019.

(1) *Interest revenue* and *Net interest income* include the taxable equivalent adjustments related to the tax-exempt bond portfolio and certain tax-advantaged loan programs (based on the U.S. federal statutory tax rate of 21%) of $192 million, $196 million and $208 million for 2021, 2020 and 2019, respectively.

(2) Interest expense associated with certain hybrid financial instruments, which are classified as *Long-term debt* and accounted for at fair value, is reported together with any changes in fair value as part of *Principal transactions* in the Consolidated Statement of Income and is therefore not reflected in *Interest expense* in the table above.

(3) The average rate on interest revenue and net interest margin reflects the taxable equivalent gross-up adjustment. See footnote 1 above.

(4) Citi's net interest margin (NIM) is calculated by dividing net interest income by average interest-earning assets.

Non-*ICG Markets* Net Interest Income

In millions of dollars	**2021**	2020	2019
Net interest income (NII)—taxable equivalent basis[1] per above	**$42,686**	$44,947	$48,338
ICG Markets NII—taxable equivalent basis[1]	**5,733**	5,786	4,562
Non-*ICG Markets* NII—taxable equivalent basis[1]	**$36,953**	$39,161	$43,776

(1) *Interest revenue* and *Net interest income* include the taxable equivalent adjustments discussed in the table above.

Citi's net interest income (NII) in the fourth quarter of 2021 was $10.8 billion ($10.9 billion on a taxable equivalent basis), largely unchanged versus the prior year, as a modest increase in non-*ICG Markets* NII (approximately $60 million) offset an equivalent decline in *ICG Markets* (fixed income markets and equity markets). Citi's NIM was 1.98% on a taxable equivalent basis in the fourth quarter of 2021, a decrease of one basis point from the prior quarter, largely reflecting deposit growth.

Citi's NII for 2021 decreased 5%, or approximately $2.3 billion, to $42.5 billion ($42.7 billion on a taxable equivalent basis) versus the prior year. The decrease was primarily related to a decline in non-*ICG Markets* NII, largely reflecting lower interest rates and lower loan balances. In 2021, Citi's NIM was 1.99% on a taxable equivalent basis, compared to 2.22% in 2020, primarily driven by lower rates and a mix-shift in balances.

Additional Interest Rate Details

Average Balances and Interest Rates—Assets[1][2][3]

Taxable Equivalent Basis

	Average volume			Interest revenue			% Average rate		
In millions of dollars, except rates	**2021**	2020	2019	**2021**	2020	2019	**2021**	2020	2019
Assets									
Deposits with banks[4]	**$ 298,319**	$ 288,629	$ 188,523	**$ 577**	$ 928	$ 2,682	**0.19%**	0.32%	1.42%
Securities borrowed and purchased under agreements to resell[5]									
In U.S. offices	**$ 172,716**	$ 149,076	$ 146,030	**$ 385**	$ 1,202	$ 4,752	**0.22%**	0.81%	3.25%
In offices outside the U.S.[4]	**149,944**	138,074	119,550	**667**	1,081	2,133	**0.44**	0.78	1.78
Total	**$ 322,660**	$ 287,150	$ 265,580	**$ 1,052**	$ 2,283	$ 6,885	**0.33%**	0.80%	2.59%
Trading account assets[6][7]									
In U.S. offices	**$ 140,215**	$ 144,130	$ 109,064	**$ 2,653**	$ 3,624	$ 4,099	**1.89%**	2.51%	3.76%
In offices outside the U.S.[4]	**151,722**	134,078	131,217	**2,718**	2,509	3,589	**1.79**	1.87	2.74
Total	**$ 291,937**	$ 278,208	$ 240,281	**$ 5,371**	$ 6,133	$ 7,688	**1.84%**	2.20%	3.20%
Investments									
In U.S. offices									
Taxable	**$ 322,884**	$ 265,833	$ 221,895	**$ 3,547**	$ 3,860	$ 5,162	**1.10%**	1.45%	2.33%
Exempt from U.S. income tax	**12,296**	14,084	15,227	**437**	452	577	**3.55**	3.21	3.79
In offices outside the U.S.[4]	**152,940**	139,400	117,529	**3,498**	3,781	4,222	**2.29**	2.71	3.59
Total	**$ 488,120**	$ 419,317	$ 354,651	**$ 7,482**	$ 8,093	$ 9,961	**1.53%**	1.93%	2.81%
Loans (net of unearned income)[8]									
In U.S. offices	**$ 386,141**	$ 396,846	$ 395,792	**$24,023**	$26,700	$30,563	**6.22%**	6.73%	7.72%
In offices outside the U.S.[4]	**281,895**	288,379	288,319	**11,509**	13,569	17,266	**4.08**	4.71	5.99
Total	**$ 668,036**	$ 685,225	$ 684,111	**$35,532**	$40,269	$47,829	**5.32%**	5.88%	6.99%
Other interest-earning assets[9]	**$ 75,876**	$ 67,547	$ 64,322	**$ 653**	$ 579	$ 1,673	**0.86%**	0.86%	2.60%
Total interest-earning assets	**$2,144,948**	$2,026,076	$1,797,468	**$50,667**	$58,285	$76,718	**2.36%**	2.88%	4.27%
Non-interest-earning assets[6]	**$ 202,761**	$ 200,378	$ 181,337						
Total assets	**$2,347,709**	$2,226,454	$1,978,805						

(1) *Interest revenue* and *Net interest income* include the taxable equivalent adjustments primarily related to the tax-exempt bond portfolio and certain tax-advantaged loan programs (based on the U.S. federal statutory tax rate of 21%) of $192 million, $196 million and $208 million for 2021, 2020 and 2019, respectively.
(2) Interest rates and amounts include the effects of risk management activities associated with the respective asset categories.
(3) Monthly or quarterly averages have been used by certain subsidiaries where daily averages are unavailable.
(4) Average rates reflect prevailing local interest rates, including inflationary effects and monetary corrections in certain countries.
(5) Average volumes of securities borrowed or purchased under agreements to resell are reported net pursuant to ASC 210-20-45. However, *Interest revenue* excludes the impact of ASC 210-20-45.
(6) The fair value carrying amounts of derivative contracts are reported net, pursuant to ASC 815-10-45, in *Non-interest-earning assets* and *Other non-interest-bearing liabilities*.
(7) *Interest expense* on *Trading account liabilities* of *ICG* is reported as a reduction of *Interest revenue*. *Interest revenue* and *Interest expense* on cash collateral positions are reported in interest on *Trading account assets* and *Trading account liabilities*, respectively.
(8) Includes cash-basis loans.
(9) Includes *Brokerage receivables*.

Average Balances and Interest Rates—Liabilities and Equity, and Net Interest Income[1][2][3]

Taxable Equivalent Basis

	Average volume			Interest expense			% Average rate		
In millions of dollars, except rates	**2021**	2020	2019	**2021**	2020	2019	**2021**	2020	2019
Liabilities									
Deposits									
In U.S. offices[4]	**$ 532,466**	$ 485,848	$ 388,948	**$ 1,084**	$ 2,524	$ 5,873	**0.20%**	0.52%	1.51%
In offices outside the U.S.[5]	**557,207**	541,301	487,318	**1,812**	2,810	5,979	**0.33**	0.52	1.23
Total	**$1,089,673**	$1,027,149	$ 876,266	**$ 2,896**	$ 5,334	$11,852	**0.27%**	0.52%	1.35%
Securities loaned and sold under agreements to repurchase[6]									
In U.S. offices	**$ 136,955**	$ 137,348	$ 112,876	**$ 676**	$ 1,292	$ 4,194	**0.49%**	0.94%	3.72%
In offices outside the U.S.[5]	**93,744**	79,426	77,283	**336**	785	2,069	**0.36**	0.99	2.68
Total	**$ 230,699**	$ 216,774	$ 190,159	**$ 1,012**	$ 2,077	$ 6,263	**0.44%**	0.96%	3.29%
Trading account liabilities[7][8]									
In U.S. offices	**$ 47,871**	$ 38,308	$ 37,099	**$ 109**	$ 283	$ 818	**0.23%**	0.74%	2.20%
In offices outside the U.S.[5]	**67,739**	52,051	51,817	**373**	345	490	**0.55**	0.66	0.95
Total	**$ 115,610**	$ 90,359	$ 88,916	**$ 482**	$ 628	$ 1,308	**0.42%**	0.70%	1.47%
Short-term borrowings and other interest-bearing liabilities[9]									
In U.S. offices	**$ 69,683**	$ 82,363	$ 78,230	**$ (27)**	$ 493	$ 2,138	**(0.04)%**	0.60%	2.73%
In offices outside the U.S.[5]	**26,133**	20,053	20,575	**148**	137	327	**0.57**	0.68	1.59
Total	**$ 95,816**	$ 102,416	$ 98,805	**$ 121**	$ 630	$ 2,465	**0.13%**	0.62%	2.49%
Long-term debt[10]									
In U.S. offices	**$ 186,522**	$ 213,809	$ 193,972	**$ 3,384**	$ 4,656	$ 6,398	**1.81%**	2.18%	3.30%
In offices outside the U.S.[5]	**4,282**	3,918	4,803	**86**	13	96	**2.01**	0.33	2.00
Total	**$ 190,804**	$ 217,727	$ 198,775	**$ 3,470**	$ 4,669	$ 6,494	**1.82%**	2.14%	3.27%
Total interest-bearing liabilities	**$1,722,602**	$1,654,425	$1,452,921	**$ 7,981**	$13,338	$28,382	**0.46%**	0.81%	1.95%
Demand deposits in U.S. offices	**$ 98,414**	$ 30,876	$ 27,737						
Other non-interest-bearing liabilities[7]	**324,724**	346,736	301,756						
Total liabilities	**$2,145,740**	$2,032,037	$1,782,414						
Citigroup stockholders' equity	**$ 201,360**	$ 193,769	$ 195,685						
Noncontrolling interests	**609**	648	706						
Total equity	**$ 201,969**	$ 194,417	$ 196,391						
Total liabilities and stockholders' equity	**$2,347,709**	$2,226,454	$1,978,805						
Net interest income as a percentage of average interest-earning assets[11]									
In U.S. offices	**$1,244,182**	$1,187,077	$1,017,021	**$26,404**	$27,520	$28,898	**2.12%**	2.32%	2.84%
In offices outside the U.S.[5]	**900,766**	838,999	780,447	**16,282**	17,427	19,440	**1.81**	2.08	2.49
Total	**$2,144,948**	$2,026,076	$1,797,468	**$42,686**	$44,947	$48,338	**1.99%**	2.22%	2.69%

(1) *Interest revenue* and *Net interest income* include the taxable equivalent adjustments discussed in the table above.
(2) Interest rates and amounts include the effects of risk management activities associated with the respective liability categories.
(3) Monthly or quarterly averages have been used by certain subsidiaries where daily averages are unavailable.
(4) Consists of other time deposits and savings deposits. Savings deposits are made up of insured money market accounts, NOW accounts and other savings deposits. The interest expense on savings deposits includes FDIC deposit insurance assessments.
(5) Average rates reflect prevailing local interest rates, including inflationary effects and monetary corrections in certain countries.
(6) Average volumes of securities sold under agreements to repurchase are reported net pursuant to ASC 210-20-45. However, *Interest expense* excludes the impact of ASC 210-20-45.
(7) The fair value carrying amounts of derivative contracts are reported net, pursuant to ASC 815-10-45, in *Non-interest-earning assets* and *Other non-interest-bearing liabilities*.
(8) *Interest expense* on *Trading account liabilities* of *ICG* is reported as a reduction of *Interest revenue*. *Interest revenue* and *Interest expense* on cash collateral positions are reported in interest on *Trading account assets* and *Trading account liabilities*, respectively.
(9) Includes *Brokerage payables*.
(10) Excludes hybrid financial instruments and beneficial interests in consolidated VIEs that are classified as *Long-term debt*, as the changes in fair value for these obligations are recorded in *Principal transactions*.
(11) Includes allocations for capital and funding costs based on the location of the asset.

Analysis of Changes in Interest Revenue[1][2][3]

In millions of dollars	2021 vs. 2020 Increase (decrease) due to change in: Average volume	Average rate	Net change	2020 vs. 2019 Increase (decrease) due to change in: Average volume	Average rate	Net change
Deposits with banks[3]	**$ 30**	**$ (381)**	**$ (351)**	$ 976	$ (2,730)	$ (1,754)
Securities borrowed and purchased under agreements to resell						
In U.S. offices	**$ 166**	**$ (983)**	**$ (817)**	$ 97	$ (3,647)	$ (3,550)
In offices outside the U.S.[3]	**86**	**(500)**	**(414)**	290	(1,342)	(1,052)
Total	**$ 252**	**$(1,483)**	**$(1,231)**	$ 387	$ (4,989)	$ (4,602)
Trading account assets[4]						
In U.S. offices	**$ (96)**	**$ (875)**	**$ (971)**	$1,103	$ (1,578)	$ (475)
In offices outside the U.S.[3]	**320**	**(111)**	**209**	77	(1,157)	(1,080)
Total	**$ 224**	**$ (986)**	**$ (762)**	$1,180	$ (2,735)	$ (1,555)
Investments[1]						
In U.S. offices	**$ 761**	**$(1,089)**	**$ (328)**	$ 911	$ (2,338)	$ (1,427)
In offices outside the U.S.[3]	**345**	**(628)**	**(283)**	703	(1,144)	(441)
Total	**$ 1,106**	**$(1,717)**	**$ (611)**	$1,614	$ (3,482)	$ (1,868)
Loans (net of unearned income)[5]						
In U.S. offices	**$ (706)**	**$(1,971)**	**$(2,677)**	$ 81	$ (3,945)	$ (3,864)
In offices outside the U.S.[3]	**(299)**	**(1,761)**	**(2,060)**	4	(3,700)	(3,696)
Total	**$(1,005)**	**$(3,732)**	**$(4,737)**	$ 85	$ (7,645)	$ (7,560)
Other interest-earning assets[6]	**$ 72**	**$ 2**	**$ 74**	$ 80	$ (1,174)	$ (1,094)
Total interest revenue	**$ 679**	**$(8,297)**	**$(7,618)**	$4,322	$(22,755)	$(18,433)

(1) *Interest revenue* and *Net interest income* include the taxable equivalent adjustments discussed in the table above.
(2) Rate/volume variance is allocated based on the percentage relationship of changes in volume and changes in rate to the total net change.
(3) Changes in average rates reflect changes in prevailing local interest rates, including inflationary effects and monetary corrections in certain countries.
(4) *Interest expense* on *Trading account liabilities* of *ICG* is reported as a reduction of *Interest revenue*. *Interest revenue* and *Interest expense* on cash collateral positions are reported in interest on *Trading account assets* and *Trading account liabilities*, respectively.
(5) Includes cash-basis loans.
(6) Includes *Brokerage receivables*.

Analysis of Changes in Interest Expense and Net Interest Income[1][2][3]

In millions of dollars	2021 vs. 2020 Increase (decrease) due to change in: Average volume	Average rate	Net change	2020 vs. 2019 Increase (decrease) due to change in: Average volume	Average rate	Net change
Deposits						
In U.S. offices	**$ 222**	**$(1,661)**	**$(1,439)**	$1,199	$ (4,548)	$ (3,349)
In offices outside the U.S.[3]	**80**	**(1,078)**	**(998)**	601	(3,770)	(3,169)
Total	**$ 302**	**$(2,739)**	**$(2,437)**	$1,800	$ (8,318)	$ (6,518)
Securities loaned and sold under agreements to repurchase						
In U.S. offices	**$ (4)**	**$ (612)**	**$ (616)**	$ 757	$ (3,659)	$ (2,902)
In offices outside the U.S.[3]	**122**	**(571)**	**(449)**	56	(1,340)	(1,284)
Total	**$ 118**	**$(1,183)**	**$(1,065)**	$ 813	$ (4,999)	$ (4,186)
Trading account liabilities[4]						
In U.S. offices	**$ 58**	**$ (232)**	**$ (174)**	$ 26	$ (561)	$ (535)
In offices outside the U.S.[3]	**93**	**(65)**	**28**	2	(147)	(145)
Total	**$ 151**	**$ (297)**	**$ (146)**	$ 28	$ (708)	$ (680)
Short-term borrowings and other interest-bearing liabilities[5]						
In U.S. offices	**$ (66)**	**$ (454)**	**$ (520)**	$ 107	$ (1,752)	$ (1,645)
In offices outside the U.S.[3]	**37**	**(26)**	**11**	(8)	(182)	(190)
Total	**$ (29)**	**$ (480)**	**$ (509)**	$ 99	$ (1,934)	$ (1,835)
Long-term debt						
In U.S. offices	**$(551)**	**$ (721)**	**$(1,272)**	$ 603	$ (2,346)	$ (1,743)
In offices outside the U.S.[3]	**1**	**71**	**72**	(15)	(67)	(82)
Total	**$(550)**	**$ (650)**	**$(1,200)**	$ 588	$ (2,413)	$ (1,825)
Total interest expense	**$ (8)**	**$(5,349)**	**$(5,357)**	$3,328	$(18,372)	$(15,044)
Net interest income	**$ 687**	**$(2,948)**	**$(2,261)**	$ 993	$ (4,382)	$ (3,389)

(1) *Interest revenue* and *Net interest income* include the taxable equivalent adjustments discussed in the table above.
(2) Rate/volume variance is allocated based on the percentage relationship of changes in volume and changes in rate to the total net change.
(3) Changes in average rates reflect changes in prevailing local interest rates, including inflationary effects and monetary corrections in certain countries.
(4) *Interest expense* on *Trading account liabilities* of *ICG* is reported as a reduction of *Interest revenue*. *Interest revenue* and *Interest expense* on cash collateral positions are reported in interest on *Trading account assets* and *Trading account liabilities*, respectively.
(5) Includes *Brokerage payables*.

Market Risk of Trading Portfolios

Trading portfolios include positions resulting from market-making activities, hedges of certain available-for-sale (AFS) debt securities, the CVA relating to derivative counterparties and all associated hedges, fair value option loans and hedges of the loan portfolio within capital markets origination within *ICG*.

The market risk of Citi's trading portfolios is monitored using a combination of quantitative and qualitative measures, including, but not limited to:

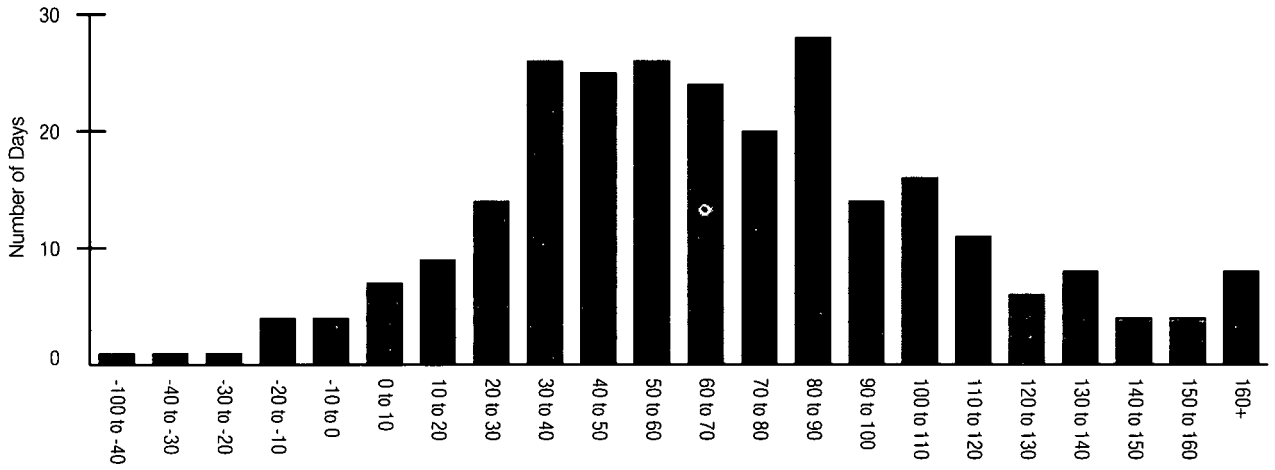
- factor sensitivities;
- value at risk (VAR); and
- stress testing.

Each trading portfolio across Citi'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.

The following chart of total daily trading-related revenue (loss) captures trading volatility and shows the number of days in which revenues for Citi's trading businesses fell within particular ranges. Trading-related revenue includes trading, net interest and other revenue associated with Citi's trading businesses. It excludes DVA, FVA and CVA adjustments incurred due to changes in the credit quality of counterparties, as well as any associated hedges of that CVA. In addition, it excludes fees and other revenue associated with capital markets origination activities. Trading-related revenues are driven by both customer flows and the changes in valuation of the trading inventory. As shown in the chart below, positive trading-related revenue was achieved for 95.8% of the trading days in 2021.

Daily Trading-Related Revenue (Loss)[1]–Twelve Months Ended December 31, 2021

In millions of dollars



(1) Reflects the effects of asymmetrical accounting for economic hedges of certain AFS debt securities. Specifically, the change in the fair value of hedging derivatives is included in trading-related revenue, while the offsetting change in the fair value of hedged AFS debt securities is included in *AOCI* and not reflected above.

Factor Sensitivities

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

Value at Risk (VAR)

VAR estimates, at a 99% confidence level, the potential decline in the value of a position or a portfolio under normal market conditions assuming a one-day holding period. VAR statistics, which are based on historical data, can be materially different across firms due to differences in portfolio composition, 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 (see "VAR Model Review and Validation" below), 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; it does not include investment securities classified as AFS or HTM. For information on these securities, see Note 13 to the Consolidated Financial Statements.

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 33% add-on to what would be a VAR estimated under the assumption of stable and perfectly, normally distributed markets.

As set forth in the table below, Citi's average trading VAR decreased $5 million from 2020 to 2021, mainly due to a reduction of market volatility, given improved macroeconomic conditions, compared to 2020. Citi's average trading and credit portfolio VAR decreased $24 million from 2020 to 2021 due to VAR volatility recalibration.

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

In millions of dollars	December 31, 2021	2021 Average	December 31, 2020	2020 Average
Interest rate	**$ 50**	**$ 65**	$ 72	$ 66
Credit spread	**59**	**71**	70	86
Covariance adjustment[1]	**(35)**	**(42)**	(51)	(48)
Fully diversified interest rate and credit spread[2]	**$ 74**	**$ 94**	$ 91	$104
Foreign exchange	**36**	**42**	40	26
Equity	**29**	**33**	31	36
Commodity	**28**	**34**	17	22
Covariance adjustment[1]	**(88)**	**(102)**	(85)	(82)
Total trading VAR—all market risk factors, including general and specific risk (excluding credit portfolios)[2]	**$ 79**	**$ 101**	$ 94	$106
Specific risk-only component[3]	**$ 3**	**$ 1**	$ (1)	$ (2)
Total trading VAR—general market risk factors only (excluding credit portfolios)	**$ 76**	**$ 100**	$ 95	$108
Incremental impact of the credit portfolio[4]	**$ 45**	**$ 30**	$ 29	$ 49
Total trading and credit portfolio VAR	**$124**	**$ 131**	$123	$155

(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 *ICG*, with the exception of hedges to the loan portfolio, fair value option loans and all CVA exposures. Available-for-sale and accrual exposures are not included.

(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 non-trading business units including Citi Treasury, the CVA relating to derivative counterparties and all associated CVA hedges. FVA and DVA are not included. The credit portfolio also includes hedges to the loan portfolio, fair value option loans and hedges to the leveraged finance pipeline within capital markets origination in *ICG*.

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

	2021		2020	
In millions of dollars	**Low**	**High**	Low	High
Interest rate	**$ 47**	**$ 96**	$28	$137
Credit spread	**54**	**96**	36	171
Fully diversified interest rate and credit spread	**$ 74**	**$123**	$44	$223
Foreign exchange	**33**	**49**	14	40
Equity	**21**	**50**	13	141
Commodity	**19**	**55**	12	64
Total trading	**$ 79**	**$130**	$47	$245
Total trading and credit portfolio	**108**	**166**	58	424

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.

The following table provides the VAR for *ICG*, excluding the CVA relating to derivative counterparties, hedges of CVA, fair value option loans and hedges to the loan portfolio:

In millions of dollars	**Dec. 31, 2021**
Total—all market risk factors, including general and specific risk	**$ 81**
Average—during year	**$103**
High—during year	**134**
Low—during year	**81**

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. Furthermore, Regulatory VAR back-testing (as described below) is performed against buy-and-hold profit and loss on a monthly basis for multiple sub-portfolios across the organization (trading desk level, *ICG* business segment and Citigroup) and the results are shared with U.S. banking regulators.

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

Citi uses the same independently validated VAR model for both Regulatory VAR and Risk Management VAR (i.e., total trading and total trading and credit portfolios VARs) and, as such, the model review and validation process for both purposes is as described above.

Regulatory VAR, which is calculated in accordance with Basel III, differs from Risk Management VAR due to the fact that certain positions included in Risk Management VAR are not eligible for market risk treatment in Regulatory VAR. The composition of Risk Management VAR is discussed under "Value at Risk" above. The applicability of the VAR model for positions eligible for market risk treatment under U.S. regulatory capital rules is periodically reviewed and approved by Citi's U.S. banking regulators.

In accordance with Basel III, Regulatory VAR includes all trading book-covered positions and all foreign exchange and commodity exposures. Pursuant to Basel III, Regulatory VAR excludes positions that fail to meet the intent and ability to trade requirements and are therefore classified as non-trading book and categories of exposures that are specifically excluded as covered positions. Regulatory VAR excludes CVA on derivative instruments and DVA on Citi's own fair value option liabilities. CVA hedges are excluded from Regulatory VAR and included in credit risk-weighted assets as computed under the Advanced Approaches for determining risk-weighted assets.

Regulatory VAR Back-Testing

In accordance with Basel III, Citi is required to perform back-testing to evaluate the effectiveness of its Regulatory VAR model. Regulatory VAR back-testing is the process in which the daily one-day VAR, at a 99% confidence interval, is compared to the buy-and-hold profit and loss (i.e., the profit and loss impact if the portfolio is held constant at the end of the day and re-priced the following day). Buy-and-hold profit and loss represents the daily mark-to-market profit and loss attributable to price movements in covered positions from the close of the previous business day. Buy-and-hold profit and loss excludes realized trading revenue, net interest, fees and commissions, intra-day trading profit and loss and changes in reserves.

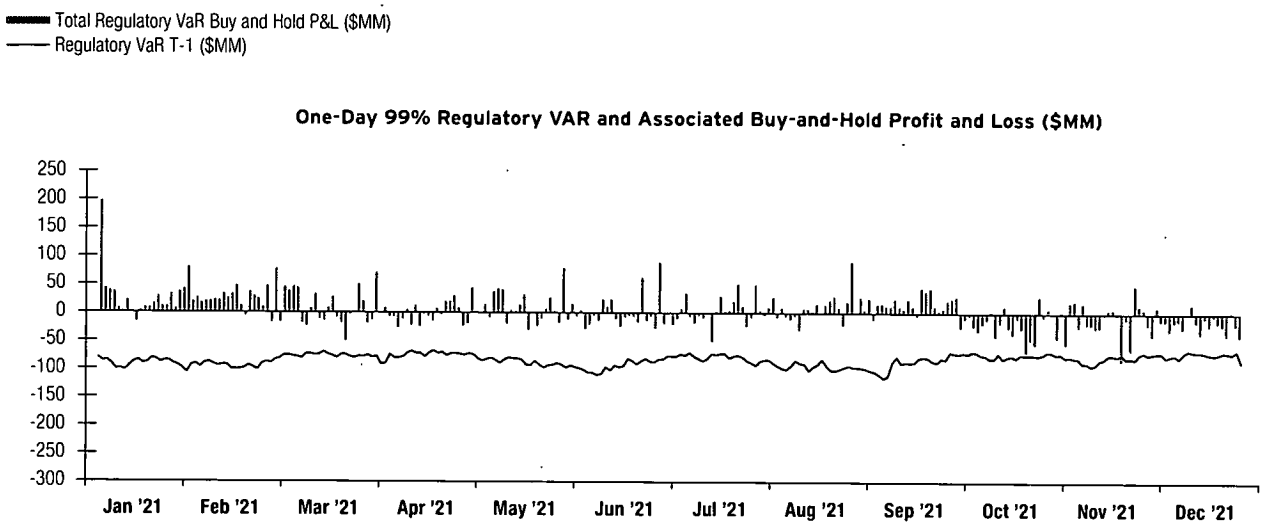
Based on a 99% confidence level, Citi would expect two to three days in any one year where buy-and-hold losses exceed the Regulatory VAR. Given the conservative calibration of Citi's VAR model (as a result of taking the greater of short- and long-term volatilities and fat-tail scaling of volatilities), Citi would expect fewer exceptions under normal and stable market conditions. Periods of unstable market conditions could increase the number of back-testing exceptions.

The following graph shows the daily buy-and-hold profit and loss associated with Citi's covered positions compared to Citi's one-day Regulatory VAR during 2021. As of December 31, 2021, one back-testing exception was observed at the Citigroup level.

The difference between the 54.4% of days with buy-and-hold gains for Regulatory VAR back-testing and the 95.8% of days with trading, net interest and other revenue associated with Citi's trading businesses, shown in the histogram of daily trading-related revenue below, reflects, among other things, that a significant portion of Citi's trading-related revenue is not generated from daily price movements on these positions and exposures, as well as differences in the portfolio composition of Regulatory VAR and Risk Management VAR.

Regulatory Trading VAR and Associated Buy-and-Hold Profit and Loss[1]–12 Months Ended December 31, 2021

In millions of dollars



(1) Buy-and-hold profit and loss, as defined by the banking regulators under Basel III, represents the daily mark-to-market revenue movement attributable to the trading position from the close of the previous business day. Buy-and-hold profit and loss excludes realized trading revenue and net interest intra-day trading profit and loss on new and terminated trades, as well as changes in reserves. Therefore, it is not comparable to the trading-related revenue presented in the chart of daily trading-related revenue above.

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 Citi-wide risk taxonomy to classify operational risks that it faces using standardized definitions across Citi's Operational Risk Management Framework (see discussion below). This taxonomy also supports regulatory requirements and expectations inclusive of those related to U.S. Basel III, Comprehensive Capital Analysis and Review (CCAR), Heightened Standards for Large Financial Institutions and Dodd Frank Annual Stress Testing (DFAST).

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

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

Each 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.

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

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

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

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

Cybersecurity Risk

Overview

Cybersecurity risk is the business risk associated with the threat posed by a 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 processes and systems and cybersecurity risk factors in "Risk Factors—Operational Risks" above). With an evolving threat landscape, ever-increasing sophistication of threat actor tactics, techniques and procedures, and use of new technologies to conduct financial transactions, Citi and its clients, customers and third parties are and will continue to be at risk from cyber attacks and information security incidents. Citi recognizes the significance of these risks and, therefore, leverages an intelligence-led strategy to protect against, detect and 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 cybersecurity preparedness and resilience.

Risk Management

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

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

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

Board Oversight

Citi's Board of Directors provides oversight of management's efforts to mitigate cybersecurity risk and respond to cyber incidents. The Board receives regular reports on cybersecurity and engages in discussions throughout the year with management and subject-matter experts on the effectiveness of Citi's overall cybersecurity program. The Board also obtains updates on Citi's inherent cybersecurity risks and Citi's road map and progress for addressing these risks.

Moreover, Citi's Board and its committee members receive contemporaneous reporting on significant cyber events including response, legal obligations, and outreach and notification to regulators, and customers when needed, as well as guidance to management as appropriate. In 2021, the Board of Directors underwent a cyber incident tabletop exercise. Also in 2021, the Board's Risk Management Committee approved a standalone Cybersecurity Risk Appetite Statement against which Citi's performance is measured quarterly. For additional information on the Board's oversight of cybersecurity risk management, see Citi's 2022 proxy statement to be filed with the SEC in March 2022.

COMPLIANCE RISK

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

Citi seeks to operate with integrity, maintain strong ethical standards and adhere to applicable policies and regulatory and legal requirements. Citi must maintain and execute a proactive Compliance Risk Management (CRM) 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 the Compliance Risk Appetite, which is articulated through qualitative compliance risk statements describing Citi's appetite for certain types of risk and quantitative measures to monitor the Company's compliance risk exposure;
- Monitoring and testing of compliance risks and controls in assessing conformance with laws, rules, regulations and internal policies; and
- Issue identification, escalation and remediation to drive accountability, including measurement and reporting of compliance risk metrics against established thresholds in support of the CRM Policy and Compliance Risk Appetite.

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 (for additional information regarding the consent orders, see "Citi's Consent Order Compliance" above).

REPUTATION RISK

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

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. The Reputation Risk Committees determine the appropriate actions to be taken in line with risk appetite and regulatory expectations, while promoting a culture of risk awareness and high standards of integrity and ethical behavior across the Company, consistent with Citi's mission and value proposition. The Reputation Risk Committees in the business segments and regions 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 responsibility for enhancing and protecting 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 escalate all issues that present potential reputation risk in line with policy.

STRATEGIC RISK

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

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

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

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

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

OTHER RISKS

LIBOR Transition Risk

The LIBOR administrator ceased publication of non-USD LIBOR and one week and two-month USD LIBOR on a representative basis on December 31, 2021, with plans to cease publication of all other USD LIBOR tenors on June 30, 2023. Regulators expect banks, including Citi, to have ceased entering into new contracts that reference USD LIBOR as a benchmark by December 31, 2021, except for limited circumstances as set out in regulatory guidance.

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 benchmark rates, see "Risk Factors—Other Risks" above). Accordingly, Citi has continued its efforts to identify and manage its LIBOR transition risks.

For example, Citi continues to closely monitor legislative, regulatory and other developments related to LIBOR transition matters and legislative relief. The International Swaps and Derivatives Association (ISDA) published the Interbank Offered Rate (IBOR) Fallbacks Protocol for existing IBOR derivatives transactions, which became effective in January 2021. The IBOR Fallbacks Protocol provides derivatives market participants with new fallbacks for legacy and new derivatives contracts if both counterparties adhere to the protocol or engage in bilateral amendments (see discussion below regarding Citi's adherence to the protocol). In April 2021, legislation was adopted in New York State that provides for the use of a statutory replacement for USD LIBOR in certain New York law legacy contracts. Similar federal legislation was passed in the House of Representatives in December 2021 and is pending passage by the Senate, although there is no guarantee that the federal legislative proposal will become law.

In addition, Citi has established a LIBOR governance and implementation program focused on identifying and addressing the impact of LIBOR transition on Citi's clients, operational capabilities and financial contracts. The program operates globally across Citi's businesses and functions and includes active involvement of senior management, oversight by Citi's Asset and 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 2021, Citi continued to participate in a number of working groups formed by global regulators, including the Alternative Reference Rates Committee (ARRC) convened by the FRB. 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's LIBOR transition action plans and associated roadmaps are intended to be consistent with the timelines recommended by these working groups. This includes the Commodity Futures Trading Commission's SOFR First Initiative, which is designed to promote derivatives trading in SOFR. Citi also continued to engage with regulators, financial accounting bodies and others on LIBOR transition matters.

Citi's LIBOR transition efforts include, among other things, reducing its overall exposure to LIBOR, increasing Citi's virtual client communication efforts and client transition facilitation, including outreach regarding new industry-led protocols and solutions, and using alternative reference rates in certain newly issued financial instruments and products. In the past several years, Citi has issued preferred stock and benchmark debt referencing the Secured Overnight Financing Rate (SOFR) and issued customer-related debt referencing SOFR and the Sterling Overnight Interbank Average Rate (SONIA), the recommended replacement rate for Sterling LIBOR. Citi has also originated and arranged loans referencing SOFR and SONIA and executed SOFR and SONIA-based derivatives contracts. Further, Citi has also been investing in its systems and infrastructure, as client activity moves away from LIBOR to alternative reference rates. Since the ARRC's recommendation of CME Group's Term SOFR in July 2021, Citi has focused on systems' readiness to provide Term SOFR loan and derivatives to clients, where permitted.

In 2021, Citi also focused on remediating existing LIBOR contracts for which publication ceased on a representative basis on December 31, 2021. Substantially all of these contracts were remediated by December 31, 2021, and Citi continues to actively engage in and track the remediation of any remaining contracts after December 31, 2021. As of December 31, 2021, Citi's overall USD LIBOR gross notional exposure for contracts maturing after the LIBOR cessation date of June 30, 2023 was approximately $7.1 trillion, which includes approximately $4 trillion of cleared derivatives that are covered by planned Central Counterparty Clearing House (CCP) conversions, and approximately $2.4 trillion of bilateral derivatives that are covered by robust contract fallback language. The remaining exposure of approximately $0.7 trillion includes bilateral derivatives and cash products that will be addressed by 2022 contract remediation plans.

In addition, for LIBOR contracts that have not yet been remediated, Citi continues to review the effect of relevant legislative solutions, which are expected to facilitate the transition to replacement rates.

Climate Risk

Climate change presents immediate and long-term risks to Citi and its clients and customers, with the risks expected to increase over time. Climate risk refers to the risk of loss arising from climate change and is comprised of both physical risk and transition risk. Physical risk considers how chronic and acute climate change (e.g., increased storms, drought, fires, floods) can directly damage physical assets (e.g., real estate, crops) or otherwise impact their value or productivity. Transition risk considers how changes in policy, technology, business practices and market preferences to address climate change (e.g., carbon pricing policies, power generation shifts from fossil fuels to renewable energy) can lead to changes in the value of assets, commodities and companies.

Climate risk is an overarching risk that can act as a driver of other categories of risk, such as credit risk from obligors exposed to high climate risk, reputational risk from increased stakeholder concerns about financing high-carbon industries and operational risk from physical risks to Citi's facilities and personnel.

Citi currently identifies climate risk as an "emerging risk" within its enterprise risk management framework. Emerging risks are risks or thematic issues that are either new to the landscape, or in the case of climate risk, existing risks that are rapidly changing or evolving in an escalating fashion, which are difficult to assess due to limited data or other uncertainties. For additional information on climate risk, see "Risk Factors—Other Risks" above.

Citi reviews factors related to climate risk under its longstanding Environmental and Social Risk Management (ESRM) Policy, which includes a focus on climate risk related to financed projects and clients in high-carbon sectors. Cautious of the credit risk of stranded assets, as well as the reputational risks associated with the coal sector due to its high carbon emissions, Citi began a phase-down of its financing of thermal coal mining companies in 2015 and of new coal-fired power plants in 2018. As Citi's phase-down has continued, Citi's ESRM Policy was updated to include a prohibition on all project-related financing of new coal-fired power plants and new or expanding thermal coal mines as well as clear timetables to reduce financing of companies with high exposure to coal fired power and coal mining who do not pursue low-carbon transition in the coming years. These sector approaches allow Citi to set a comprehensive and industry-wide approach to clarify its positions, set clear expectations for its clients and help address certain climate risk driven credit risk concerns while reducing reputation risk.

Citi continues to explore and test methodologies for quantifying how climate risks could impact the individual credit profiles of its clients across various sectors. To assist in embedding climate risk assessments in its credit assessment process, Citi is developing sector-specific climate risk assessments. Such climate risk assessments are designed to supplement publicly available client disclosures and data provided from third-party vendors and facilitate conversations with clients on their most material climate risks and management plans for adaptation and mitigation. In the near term, Citi's assessments will consider sectors that have been identified as higher climate risk by Citi's risk identification process. This will not only help Citi better understand its clients' businesses and climate-related risks, but will also provide a source of climate data. Citi's net zero plan is leading to the further integration of climate risk discussions into client engagement and client selection.

Furthermore, Citi is developing globally consistent principles and approaches for managing climate risk across Citi. Climate risk will be embedded into relevant policies and processes over time.

In addition, Citi continues to participate in financial industry collaborations to develop and pilot new methodologies and approaches for measuring and assessing the potential financial risks of climate change. Citi is also closely monitoring regulatory developments on climate risk and sustainable finance, and actively engaging with regulators on these topics.

For additional information about sustainability and other ESG matters at Citi, see "Sustainability and Other ESG Matters" above.

Country Risk

Top 25 Country Exposures

The following table presents Citi's top 25 exposures by country (excluding the U.S.) as of December 31, 2021. (Including the U.S., the total exposure as of December 31, 2021 to the top 25 countries would represent approximately 98% of Citi's exposure to all countries.)

For purposes of the table, loan amounts are reflected in the country where the loan is booked, which is generally based on the domicile of the borrower. For example, a loan to a Chinese subsidiary of a Switzerland-based corporation will generally be categorized as a loan in China. In addition, Citi has developed regional booking centers in certain countries, most significantly in the United Kingdom (U.K.) and Ireland, in order to more efficiently serve its corporate customers. As an example, with respect to the U.K., only 33% of corporate loans presented in the table below are to U.K. domiciled entities (36% for unfunded commitments), with the balance of the loans predominately to European domiciled counterparties. Approximately 87% of the total U.K. funded loans and 88% of the total U.K. unfunded commitments were investment grade as of December 31, 2021.

Trading account assets and investment securities are generally categorized based on the domicile of the issuer of the security of the underlying reference entity. For additional information on the assets included in the table, see the footnotes to the table below.

In billions of dollars	ICG loans[1]	GCB loans	Other funded[2]	Unfunded[3]	Net MTM on derivatives/ repos[4]	Total hedges (on loans and CVA)	Investment securities[5]	Trading account assets[6]	Total as of 4Q21	Total as of 3Q21	Total as of 4Q20	Total as a % of Citi as of 4Q21
United Kingdom	$42.8	$ 0.2	$1.2	$45.7	$12.8	$(5.7)	$ 3.6	$(4.7)	**$95.9**	$111.6	$115.2	**5.5%**
Mexico	14.2	13.3	0.3	7.7	3.4	(0.9)	19.6	2.0	**59.6**	60.0	64.5	**3.4**
Hong Kong	18.8	15.3	0.2	7.1	0.7	(1.6)	7.9	2.0	**50.4**	52.8	49.0	**2.9**
Singapore	15.6	14.0	0.1	7.4	1.2	(0.9)	6.3	2.0	**45.7**	46.0	45.8	**2.6**
Ireland	13.9	—	0.6	28.9	0.4	(0.2)	—	0.9	**44.5**	45.3	43.9	**2.5**
South Korea	3.8	15.7	0.1	2.1	1.0	(0.9)	9.7	0.5	**32.0**	34.2	35.8	**1.8**
India	6.8	3.8	0.9	5.3	4.6	(0.7)	8.5	0.6	**29.8**	30.3	31.4	**1.7**
Brazil	11.0	—	0.1	3.0	5.6	(0.7)	5.7	2.6	**27.3**	24.4	26.2	**1.6**
China	7.3	3.6	0.8	1.8	2.5	(1.0)	8.2	0.2	**23.4**	20.2	21.8	**1.3**
Germany	0.3	—	—	6.0	6.4	(3.6)	5.9	4.4	**19.4**	14.4	24.4	**1.1**
Jersey	7.3	—	0.1	10.4	—	(0.1)	—	—	**17.7**	14.9	13.4	**1.0**
Australia	5.9	—	0.1	8.0	1.1	(0.7)	1.3	0.7	**16.4**	17.7	21.7	**0.9**
Japan	2.3	—	—	3.4	3.2	(1.8)	5.0	3.8	**15.9**	19.3	21.8	**0.9**
Taiwan	4.1	8.6	0.1	1.4	0.5	(0.2)	0.2	0.6	**15.3**	17.0	17.3	**0.9**
United Arab Emirates	7.3	1.5	0.1	3.8	0.4	(0.5)	2.2	0.1	**14.9**	16.6	12.4	**0.9**
Canada	2.1	0.5	0.1	7.5	1.7	(1.5)	3.3	1.0	**14.7**	16.9	17.8	**0.8**
Poland	3.2	1.8	—	2.6	0.4	(0.2)	4.5	0.8	**13.1**	11.2	15.0	**0.7**
Thailand	1.1	2.7	—	2.1	—	—	1.8	0.2	**7.9**	8.0	8.0	**0.5**
Malaysia	1.4	3.4	0.2	1.0	0.1	(0.1)	1.9	(0.1)	**7.8**	8.2	8.3	**0.4**
Indonesia	2.2	0.6	—	1.2	0.2	(0.1)	1.5	(0.1)	**5.5**	5.8	6.0	**0.3**
Russia	2.2	0.7	—	0.7	0.4	(0.1)	1.5	—	**5.4**	5.5	5.2	**0.3**
Luxembourg	0.8	—	—	—	0.2	(0.9)	4.0	(0.1)	**4.0**	5.3	5.1	**0.2**
South Africa	1.4	—	0.1	0.6	0.2	(0.1)	1.8	(0.2)	**3.8**	3.8	3.6	**0.2**
Czech Republic	0.7	—	—	0.9	1.6	(0.1)	0.4	—	**3.5**	3.5	4.3	**0.2**
Spain	0.4	—	—	2.9	0.4	(1.3)	—	0.3	**2.7**	3.3	3.4	**0.2**
Total as a % of Citi's total exposure												**32.8%**
Total as a % of Citi's non-U.S. total exposure												**93.4%**

(1) *ICG* loans reflect funded corporate loans and private bank loans, net of unearned income. As of December 31, 2021, private bank loans in the table above totaled $31.8 billion, concentrated in the U.K. ($8.8 billion), Hong Kong ($8.6 billion) and Singapore ($7.5 billion).
(2) Other funded includes other direct exposures such as accounts receivable, loans HFS, other loans in *Corporate/Other* and investments accounted for under the equity method.
(3) Unfunded exposure includes unfunded corporate lending commitments, letters of credit and other contingencies.
(4) Net mark-to-market counterparty risk on OTC derivatives and securities lending/borrowing transactions (repos). Exposures are shown net of collateral and inclusive of CVA. Includes margin loans.
(5) Investment securities include debt securities available-for-sale, recorded at fair market value, and debt securities held-to-maturity, recorded at amortized cost.
(6) Trading account assets are shown on a net basis and include issuer risk on cash products and derivative exposure where the underlying reference entity/issuer is located in that country.

Argentina

Citi operates in Argentina through its *ICG* businesses. As of December 31, 2021, Citi's net investment in its Argentine operations was approximately $1.5 billion. Citi uses the U.S. dollar as the functional currency for its operations in highly inflationary countries under U.S. GAAP. Citi uses Argentina's official market exchange rate to remeasure its net Argentine peso-denominated assets into the U.S. dollar. As of December 31, 2021, the official Argentine peso exchange rate against the U.S. dollar was 102.73.

The Central Bank of Argentina maintains certain capital and currency controls that generally restrict Citi's ability to access U.S. dollars in Argentina and remit substantially all of its earnings from its Argentine operations. Citi's net investment in its Argentine operations is likely to increase as Citi continues to generate net income from its Argentine franchise and the majority of its earnings cannot be remitted.

Due to the currency controls implemented by the Central Bank of Argentina, certain indirect foreign exchange mechanisms have developed that some Argentine entities may use to obtain U.S. dollars, generally at rates that are significantly higher than Argentina's official exchange rate. Citibank Argentina is precluded from accessing these alternative mechanisms, and these exchange mechanisms cannot be used to remeasure Citi's net monetary assets into the U.S. dollar under U.S. GAAP. Citi cannot predict future fluctuations in Argentina's official market exchange rate or to what extent Citi may be able to access U.S. dollars at the official exchange rate in the future.

Citi economically hedges the foreign currency risk in its net Argentine peso-denominated assets to the extent possible and prudent using non-deliverable forward (NDF) derivative instruments that are primarily executed outside of Argentina. As of December 31, 2021, the international NDF market had very limited liquidity, resulting in Citi being unable to economically hedge nearly all of its Argentine peso exposure. As a result, and to the extent that Citi does not execute NDF contracts for this unhedged exposure in the future, Citi would record devaluations on its net Argentine peso-denominated assets in earnings, without any benefit from a change in the fair value of derivative positions used to economically hedge the exposure.

Citi continually evaluates its economic exposure to its Argentine counterparties and reserves for changes in credit risk and sovereign risk associated with its Argentine assets. Citi believes it has established appropriate allowances for credit losses on its Argentine loans, and appropriate fair value adjustments on Argentine assets and liabilities measured at fair value, for such risks under U.S. GAAP as of December 31, 2021. However, U.S. regulatory agencies may require Citi to record additional reserves in the future, increasing *ICG*'s cost of credit, based on the perceived country risk associated with its Argentine exposures.

For additional information on Citi's emerging markets risks, including those related to its Argentine exposures, see "Risk Factors" above.

Russia

Citi operates both its *ICG* and *GCB* businesses in Russia, although the Company is currently pursuing the exit of its *GCB* business in the country. All of Citi's domestic operations in Russia are conducted through a subsidiary of Citibank, which uses the Russian ruble as its functional currency. Citi's net investment in Russia was approximately $1 billion as of December 31, 2021. The majority of Citi's net investment was hedged for foreign currency depreciation as of December 31, 2021, using forward foreign exchange contracts. Citi's total third-party exposure was approximately $8.2 billion as of December 31, 2021. These assets primarily consisted of corporate and consumer loans, local government debt securities, reverse repurchase agreements, and cash on deposit and placements with the Bank of Russia and other financial institutions. A significant portion of Citi's third-party exposures were funded with domestic deposit liabilities from both *ICG* and *GCB* clients. Further, Citi has approximately $1.6 billion of additional exposures to Russian counterparties that are not held on the Russian subsidiary and are not included in the $8.2 billion above.

The $5.4 billion in Russia credit and other exposures in the "Top 25 Country Exposures" table above does not include approximately $1.0 billion of cash and placements with the Bank of Russia and other financial institutions and $1.8 billion of reverse repurchase agreements with various counterparties.

Citi continues to monitor the current Russia–Ukraine geopolitical situation and economic conditions and will mitigate its exposures and risks as appropriate. For additional information, see "Risk Factors—Market-Related Risk," "—Operational Risks" and "—Other Risks" above.

FFIEC—Cross-Border Claims on Third Parties and Local Country Assets

Citi's cross-border disclosures are set forth below, based on the country exposure bank regulatory reporting guidelines of the Federal Financial Institutions Examination Council (FFIEC). The following summarizes some of the FFIEC key reporting guidelines:

- Amounts are based on the domicile of the ultimate obligor, counterparty, collateral (only including qualifying liquid collateral), issuer or guarantor, as applicable (e.g., a security recorded by a Citi U.S. entity but issued by the U.K. government is considered U.K. exposure; a loan recorded by a Citi Mexico entity to a customer domiciled in Mexico where the underlying collateral is held in Germany is considered German exposure).
- Amounts do not consider the benefit of collateral received for secured financing transactions (i.e., repurchase agreements, reverse repurchase agreements and securities loaned and borrowed) and are reported based on notional amounts.
- Netting of derivative receivables and payables, reported at fair value, is permitted, but only under a legally binding netting agreement with the same specific counterparty, and does not include the benefit of margin received or hedges.
- Credit default swaps (CDS) are included based on the gross notional amount sold and purchased and do not include any offsetting CDS on the same underlying entity.
- Loans are reported without the benefit of hedges.

Given the requirements noted above, Citi's FFIEC cross-border exposures and total outstandings tend to fluctuate, in some cases significantly, from period to period. As an example, because total outstandings under FFIEC guidelines do not include the benefit of margin or hedges, market volatility in interest rates, foreign exchange rates and credit spreads may cause significant fluctuations in the level of total outstandings, all else being equal.

The tables below show each country whose total outstandings exceeded 0.75% of total Citigroup assets:

	December 31, 2021									
	Cross-border claims on third parties and local country assets									
In billions of dollars	Banks (a)	Public (a)	NBFIs[1] (a)	Other (corporate and households) (a)	Trading assets[2] (included in (a))	Short-term claims[2] (included in (a))	Total outstanding[3] (sum of (a))	Commitments and guarantees[4]	Credit derivatives purchased[5]	Credit derivatives sold[5]
United Kingdom	**$ 7.0**	**$31.1**	**$55.6**	**$19.2**	**$16.5**	**$70.8**	**$112.9**	**$23.0**	**$76.3**	**$70.8**
Cayman Islands	**—**	**—**	**78.8**	**13.2**	**7.4**	**56.3**	**92.0**	**9.9**	**0.4**	**0.3**
Japan	**31.0**	**30.1**	**12.8**	**8.7**	**15.6**	**54.8**	**82.6**	**8.4**	**13.4**	**12.1**
Germany	**4.5**	**48.9**	**47.7**	**9.6**	**18.5**	**78.3**	**110.7**	**23.2**	**48.6**	**44.7**
Mexico	**2.8**	**28.4**	**9.3**	**25.8**	**2.7**	**33.4**	**66.3**	**19.7**	**6.7**	**6.1**
France	**9.7**	**9.6**	**27.0**	**9.8**	**14.0**	**41.6**	**56.1**	**85.3**	**62.6**	**55.7**
Singapore	**1.9**	**18.3**	**12.1**	**17.4**	**2.7**	**39.1**	**49.7**	**16.3**	**1.4**	**1.3**
South Korea	**3.6**	**17.9**	**3.2**	**21.9**	**2.0**	**37.7**	**46.6**	**12.7**	**9.0**	**8.1**
Hong Kong	**1.3**	**12.3**	**3.9**	**21.8**	**4.2**	**30.2**	**39.3**	**13.6**	**1.7**	**1.5**
Australia	**3.9**	**14.2**	**5.7**	**12.8**	**7.3**	**22.9**	**36.6**	**13.6**	**4.0**	**3.9**
China	**4.2**	**12.9**	**3.7**	**14.7**	**8.0**	**26.3**	**35.5**	**4.4**	**9.6**	**9.0**
India	**1.2**	**15.0**	**4.4**	**13.1**	**2.6**	**23.4**	**33.7**	**10.2**	**1.8**	**1.4**
Taiwan	**0.5**	**7.0**	**1.7**	**15.8**	**4.8**	**21.1**	**25.0**	**14.6**	**—**	**0.1**
Netherlands	**5.9**	**8.8**	**3.3**	**5.7**	**5.2**	**16.2**	**23.7**	**9.8**	**30.8**	**27.6**
Brazil	**2.0**	**12.9**	**2.2**	**12.5**	**3.9**	**20.3**	**29.6**	**3.2**	**6.2**	**5.6**
Italy	**2.8**	**10.9**	**0.9**	**1.8**	**8.1**	**2.4**	**16.4**	**1.6**	**38.8**	**37.0**
Switzerland	**1.4**	**13.7**	**0.9**	**6.0**	**3.1**	**20.0**	**22.0**	**9.7**	**18.9**	**17.6**
Canada	**6.5**	**12.2**	**4.7**	**4.1**	**3.8**	**21.0**	**27.5**	**12.9**	**5.7**	**5.3**

	December 31, 2020									
	Cross-border claims on third parties and local country assets									
In billions of dollars	Banks (a)	Public (a)	NBFIs[1] (a)	Other (corporate and households) (a)	Trading assets[2] (included in (a))	Short-term claims[2] (included in (a))	Total outstanding[3] (sum of (a))	Commitments and guarantees[4]	Credit derivatives purchased[5]	Credit derivatives sold[5]
United Kingdom[6]	$16.0	$26.0	$50.5	$17.5	$14.2	$73.5	$110.0	$25.8	$76.2	$75.3
Cayman Islands	—	—	85.8	12.7	8.0	69.7	98.5	11.9	0.3	0.2
Japan	32.9	35.5	12.1	6.6	16.2	63.3	87.1	6.6	16.1	15.1
Germany[6]	7.1	51.8	15.9	9.6	11.3	58.6	84.4	14.1	49.7	48.1
Mexico	3.9	31.5	9.5	28.8	6.0	44.4	73.7	21.7	7.3	6.6
France	11.0	9.7	39.3	9.5	13.3	58.7	69.5	68.2	61.3	56.4
Singapore	2.5	25.6	10.7	17.5	2.8	46.5	56.3	13.8	1.9	1.5
South Korea	3.3	18.2	1.8	24.9	1.5	35.6	48.2	14.7	10.8	10.7
Hong Kong	1.5	13.8	3.9	19.8	7.2	33.2	39.0	13.1	2.1	1.7
Australia	5.1	16.4	4.0	13.0	9.6	31.6	38.5	13.0	5.7	5.2
China	4.5	16.3	3.3	14.1	9.7	33.4	38.2	5.8	10.5	10.0
India	1.9	14.0	2.5	12.9	2.3	22.1	31.3	11.3	1.8	1.6
Taiwan	0.4	7.8	2.0	16.5	5.1	23.7	26.7	14.1	—	—
Netherlands	7.8	10.4	3.4	4.8	5.2	18.2	26.4	10.4	28.5	27.4
Brazil	2.8	11.3	1.6	9.9	5.2	20.0	25.6	2.7	6.0	6.0
Italy	2.5	19.1	0.6	1.9	15.0	16.1	24.1	2.7	42.3	41.3
Switzerland	1.8	14.3	1.4	4.9	2.6	20.0	22.4	7.3	18.0	17.4
Canada	4.5	6.3	5.9	4.5	3.4	15.1	21.2	14.5	3.9	4.0

(1) Non-bank financial institutions.
(2) Included in total outstanding.
(3) Total outstanding includes cross-border claims on third parties, as well as local country assets. Cross-border claims on third parties include cross-border loans, securities, deposits with banks and other monetary assets, as well as net revaluation gains on foreign exchange and derivative products.
(4) Commitments (not included in total outstanding) include legally binding cross-border letters of credit and other commitments and contingencies as defined by the FFIEC guidelines. The FFIEC definition of commitments includes commitments to local residents to be funded with local currency liabilities originated within the country.
(5) Credit default swaps (CDS) are not included in total outstanding.
(6) Exposures for the United Kingdom and Germany for the December 31, 2020 period have been revised by $(5.4) billion and $4.8 billion, respectively, as compared to those previously reported, with the balance in the U.S. This revision reflects a correction in the domicile for Non-Bank Financial Institutions counterparties.

SIGNIFICANT ACCOUNTING POLICIES AND SIGNIFICANT ESTIMATES

This section contains a summary of Citi's most significant accounting policies. Note 1 to the Consolidated Financial Statements contains a summary of all of Citigroup's significant accounting policies. These policies, as well as estimates made by management, are integral to the presentation of Citi's results of operations and financial condition. While all of these policies require a certain level of management judgment and estimates, this section highlights and discusses the significant accounting policies that require management to make highly difficult, complex or subjective judgments and estimates at times regarding matters that are inherently uncertain and susceptible to change (see also "Risk Factors—Operational Risks" above). Management has discussed each of these significant accounting policies, the related estimates and its judgments with the Audit Committee of the Citigroup Board of Directors.

Valuations of Financial Instruments

Citigroup holds debt and equity securities, derivatives, retained interests in securitizations, investments in private equity and other financial instruments. A substantial portion of these assets and liabilities is reflected at fair value on Citi's Consolidated Balance Sheet as *Trading account assets, Available-for-sale securities* and *Trading account liabilities*.

Citi purchases securities under agreements to resell (reverse repos or resale agreements) and sells securities under agreements to repurchase (repos), a substantial portion of which is carried at fair value. In addition, certain loans, short-term borrowings, long-term debt and deposits, as well as certain securities borrowed and loaned positions that are collateralized with cash, are carried at fair value. Citigroup holds its investments, trading assets and liabilities, and resale and repurchase agreements on Citi's Consolidated Balance Sheet to meet customer needs and to manage liquidity needs, interest rate risks and private equity investing.

When available, Citi generally uses quoted market prices in active markets to determine fair value and classifies such items within Level 1 of the fair value hierarchy established under ASC 820-10, *Fair Value Measurement*. If quoted market prices are not available, fair value is based on internally developed valuation models that use, where possible, current market-based or independently sourced market parameters, such as interest rates, currency rates and option volatilities. Such models are often based on a discounted cash flow analysis. In addition, 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 under the fair value hierarchy as Level 3 even though there may be some significant inputs that are readily observable.

Citi is required to exercise subjective judgments relating to the applicability and functionality of internal valuation models, the significance of inputs or value drivers to the valuation of an instrument and the degree of observability in certain markets. The fair value of these instruments is reported on Citi's Consolidated Balance Sheet with the changes in fair value recognized in either the Consolidated Statement of Income or in *AOCI*.

Losses on available-for-sale securities whose fair values are less than the amortized cost, where Citi intends to sell the security or could more-likely-than-not be required to sell the security, are recognized in earnings. Where Citi does not intend to sell the security nor could more-likely-than-not be required to sell the security, the portion of the loss related to credit is recognized as an allowance for credit losses with a corresponding provision for credit losses and the remainder of the loss is recognized in other comprehensive income. Such losses are capped at the difference between the fair value and amortized cost of the security.

For equity securities carried at cost or under the measurement alternative, decreases in fair value below the carrying value are recognized as impairment in the Consolidated Statement of Income. Moreover, for certain equity method investments, decreases in fair value are only recognized in earnings in the Consolidated Statement of Income if such decreases are judged to be an other-than-temporary impairment (OTTI). Adjudicating the temporary nature of fair value impairments is also inherently judgmental.

The fair value of financial instruments incorporates the effects of Citi's own credit risk and the market view of counterparty credit risk, the quantification of which is also complex and judgmental. For additional information on Citi's fair value analysis, see Notes 1, 6, 24 and 25 to the Consolidated Financial Statements.

Citi's Allowance for Credit Losses (ACL)

The table below shows Citi's ACL as of the fourth quarter of 2021. For information on the drivers of Citi's ACL release in the fourth quarter, see below. For additional information on Citi's accounting policy on accounting for credit losses under ASC Topic 326, *Financial Instruments—Credit losses; Current Expected Credit Losses (CECL)*, see Note 1 to the Consolidated Financial Statements below.

	Allowance for credit losses (ACL)								
	Balance	Build (release)				2021	Balance	ACLL/EOP loans
In millions of dollars	Dec. 31, 2020	1Q21	2Q21	3Q21	4Q21	2021	FX/Other[1]	Dec. 31, 2021	Dec. 31, 2021[2]
Cards[2]	$16,805	$(1,523)	$(1,106)	$ (906)	$ (957)	**$(4,492)**	**$(322)**	**$11,991**	**7.90%**
All other GCB	2,419	(283)	(292)	(125)	18	**(682)**	**(149)**	**1,588**	
Global Consumer Banking	$19,224	$(1,806)	$(1,398)	$(1,031)	$ (939)	**$(5,174)**	**$(471)**	**$13,579**	**5.08%**
Institutional Clients Group	5,402	(1,312)	(949)	(65)	(207)	**(2,533)**	**(30)**	**2,839**	**0.73**
Corporate/Other	330	(109)	(99)	(53)	(30)	**(291)**	**(2)**	**37**	
Allowance for credit losses on loans (ACLL)	**$24,956**	**$(3,227)**	**$(2,446)**	**$(1,149)**	**$(1,176)**	**$(7,998)**	**$(503)**	**$16,455**	**2.49%**
Allowance for credit losses on unfunded lending commitments	2,655	(626)	44	(13)	(193)	**(788)**	**4**	**1,871**	
Other	146	1	1	(13)	11	**—**	**2**	**148**	
Total allowance for credit losses (ACL)	**$27,757**	**$(3,852)**	**$(2,401)**	**$(1,175)**	**$(1,358)**	**$(8,786)**	**$(497)**	**$18,474**	

(1) Includes reclassifications to *Other assets* related to Citi's agreements to sell its consumer banking businesses in Australia and the Philippines. See Notes 2 and 15 to the Consolidated Financial Statements.
(2) As of December 31, 2021, in *North America GCB*, branded cards ACLL/EOP loans was 7.10% and retail services ACLL/EOP loans was 10.0%.

Citi's reserves for expected credit losses on funded loans and unfunded lending commitments, standby letters of credit and financial guarantees are reflected on the Consolidated Balance Sheet in the *Allowance for credit losses on loans* (ACLL) and *Other liabilities* (Allowance for credit losses on unfunded lending commitments (ACLUC)), respectively. In addition, Citi reserves for expected credit losses on other financial assets carried at amortized cost, including held-to-maturity securities, reverse repurchase agreements, securities borrowed, deposits with banks and other financial receivables. These reserves, together with the ACLL and ACLUC, are referred to as the ACL. Changes in the ACL are reflected as *Provision for credit losses* in the Consolidated Statement of Income for each reporting period.

The ACL is composed of quantitative and qualitative management adjustment components. The quantitative component uses a forward-looking base macroeconomic forecast. The qualitative management adjustment component reflects economic uncertainty using alternative downside macroeconomic scenarios and portfolio characteristics and current economic conditions not captured in the quantitative component, such as adjustments to reflect uncertainty around the estimated impact of the pandemic on credit losses. Both the quantitative and qualitative management adjustment components are further discussed below.

Quantitative Component

Citi estimates expected credit losses for its quantitative component using (i) its comprehensive internal data on loss and default history, (ii) internal credit risk ratings, (iii) external credit bureau and rating agencies information, and (iv) a reasonable and supportable forecast of macroeconomic conditions.

For its consumer and corporate portfolios, Citi's expected credit losses are determined primarily by utilizing models that consider the borrowers' probability of default (PD), loss given default (LGD) and exposure at default (EAD). The loss likelihood and severity models used for estimating expected credit losses are sensitive to changes in macroeconomic variables that inform the forecasts, and cover a wide range of geographic, industry, product and operating segments.

In addition, Citi's models determine expected credit losses based on leading credit indicators, including loan delinquencies, changes in portfolio size, default frequency, risk ratings and loss recovery rates (among other things), as well as other current economic factors and credit trends, including housing prices, unemployment and gross domestic product (GDP). This methodology is applied separately for each product within each geographic region in which these portfolios exist.

This evaluation process is subject to numerous estimates and judgments. The frequency of default, risk ratings, loss recovery rates, size and diversity of individual large credits and ability of borrowers with foreign currency obligations to obtain the foreign currency necessary for orderly debt servicing, among other things, are all taken into account.

Changes in these estimates could have a direct impact on Citi's credit costs and the allowance in any period.

Qualitative Component

The qualitative management adjustment component includes, among other things, management adjustments to reflect economic uncertainty based on the likelihood and severity of downside scenarios and certain portfolio characteristics not captured in the quantitative component, such as concentrations, collateral valuation, model limitations, idiosyncratic events and other factors as required by banking supervisory guidance for the ACL. The qualitative management adjustment component also reflects the uncertainty around the estimated impact of the pandemic on credit loss estimates. The ultimate extent of the pandemic's impact on Citi's ACL will depend on, among other things, (i) how consumers respond to the conclusion of government stimulus and assistance programs, (ii) the impact on unemployment, (iii) the timing and extent of the economic recovery, (iv) the severity and duration of any resurgence of COVID-19, (v) the rate of distribution and administration of vaccines and (vi) the extent of any market volatility.

4Q21 Changes in the ACL

In the fourth quarter of 2021, Citi released $1.0 billion of the ACL for its consumer portfolios and $0.4 billion of the ACL for its corporate portfolios, for a total release of $1.4 billion. The releases in the consumer and corporate ACLs were driven primarily by the continued improvement in the macroeconomic outlook, as well as continued improvements in credit quality. The overall qualitative management adjustments declined compared to the previous quarter. Based on its latest macroeconomic forecast, Citi believes its analysis of the ACL reflects the forward view of the economic environment as of December 31, 2021.

Macroeconomic Variables

Citi considers a multitude of macroeconomic variables for both the base and downside macroeconomic forecasts it uses to estimate the ACL, including domestic and international variables for its global portfolios and exposures. Citi's forecasts of the U.S. unemployment rate and U.S. Real GDP growth rate represent the key macroeconomic variables that most significantly affect its estimate of the ACL.

The tables below show Citi's forecasted quarterly average U.S. unemployment rate and year-over-year U.S. Real GDP growth rate used in determining Citi's ACL for each quarterly reporting period from 4Q20 to 4Q21:

	Quarterly average			13-quarter
U.S. unemployment	4Q21	2Q22	4Q22	average[1]
Citi forecast at 4Q20	6.3	6.1	5.7	6.1
Citi forecast at 1Q21	4.9	4.1	3.8	4.3
Citi forecast at 2Q21	4.6	4.1	3.9	4.1
Citi forecast at 3Q21	4.5	4.1	3.9	4.0
Citi forecast at 4Q21	4.3	4.0	3.8	3.8

(1) Represents the average unemployment rate for the rolling, forward-looking 13 quarters in the forecast horizon.

	Year-over-year growth rate[1]		
	Full year		
U.S. Real GDP	2021	2022	2023
Citi forecast at 4Q20	3.7	2.7	2.6
Citi forecast at 1Q21	6.2	4.1	1.9
Citi forecast at 2Q21	6.5	3.7	2.0
Citi forecast at 3Q21	5.9	3.9	2.1
Citi forecast at 4Q21	5.5	4.0	2.2

(1) The year-over-year growth rate is the percentage change in the Real (inflation adjusted) GDP level.

Under the base macroeconomic forecast as of 4Q21, U.S. Real GDP growth is expected to remain strong during 2022, and the unemployment rate is expected to continue to improve as the U.S. moves past the peak of the pandemic-related health and economic crisis.

Consumer

As discussed above, Citi's total consumer ACLL release (including *Corporate/Other*) of $1.0 billion in the fourth quarter of 2021 reduced the ACLL balance to $13.6 billion, or 5.0% of total consumer loans as of December 31, 2021. The release was primarily driven by the continued improvement in the macroeconomic outlook, as well as continued improvements in credit quality. Citi's consumer ACLL is largely driven by the cards businesses.

For cards, including Citi's international businesses, the level of reserves relative to EOP loans decreased to 7.9% as of December 31, 2021, compared to 9.1% at September 30, 2021, primarily driven by the continued improvement in the macroeconomic outlook, as well as continued improvements in credit quality. For the remaining consumer exposures, the level of reserves relative to EOP loans was 1.4% at December 31, 2021, essentially unchanged from September 30, 2021.

Corporate

Citi's corporate ACLL release of $0.2 billion in the fourth quarter of 2021 reduced the ACLL reserve balance to $2.8 billion, or 0.73% of total funded loans. The release was primarily driven by improvements in portfolio credit quality, as well as improvement in the macroeconomic outlook.

The *Allowance for credit losses on unfunded lending commitments* (ACLUC) release of $191 million in the fourth quarter of 2021 decreased the total ACLUC reserve balance included in *Other liabilities* to $1.9 billion at December 31, 2021.

ACLL and Non-accrual Ratios

At December 31, 2021, the ratio of the allowance for credit losses to total funded loans was 2.49% (5.02% for consumer loans and 0.73% for corporate loans) compared to 2.69% at September 30, 2021 (5.55% for consumer loans and 0.77% for corporate loans).

Citi's total non-accrual loans were $3.4 billion at December 31, 2021, down $610 million from September 30, 2021. Consumer non-accrual loans decreased $87 million to $1.5 billion at December 31, 2021 from $1.6 billion at September 30, 2021, while corporate non-accrual loans decreased $523 million to $1.9 billion at December 31, 2021 from $2.4 billion at September 30, 2021. In addition, the ratio of non-accrual loans to total consumer loans was 0.55% and non-accrual loans to total corporate loans was 0.47%, at December 31, 2021.

Regulatory Capital Impact

Citi has elected to phase in the CECL impact for regulatory capital purposes. The transition provisions were recently modified to defer the phase-in. After two years with no impact on capital, the CECL transition impact will phase in over a three-year transition period with 25% of the impact (net of deferred taxes) recognized on the first day of each subsequent year, commencing January 1, 2022, and will be fully implemented on January 1, 2025. In addition, 25% of the impact of the build (pretax) in 2020 and 2021 were deferred and being amortized over the same timeframe.

For a further description of the ACL and related accounts, see Notes 1 and 15 to the Consolidated Financial Statements.

For a discussion of the adoption of the CECL accounting pronouncement, see Note 1 to the Consolidated Financial Statements.

Goodwill

Citi tests goodwill for impairment annually on July 1 (the annual test) and through 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, such as a significant adverse change in the business climate, a decision to sell or dispose of all or a significant portion of a reporting unit or a significant decline in Citi's stock price. During 2021, the annual test was performed, which resulted in no goodwill impairment as described in Note 16 to the Consolidated Financial Statements.

As of December 31, 2021, Citigroup's activities were conducted through the *Global Consumer Banking* and *Institutional Clients Group* business operating segments and *Corporate/Other*. Goodwill impairment testing is performed at the level below the business segment (referred to as a reporting unit).

Citi utilizes allocated equity as a proxy for the carrying value of its reporting units for purposes of goodwill impairment testing. The allocated equity in the reporting units is determined based on the capital the business would require if it were operating as a standalone entity, incorporating sufficient capital to be in compliance with both current and expected regulatory capital requirements, including capital for specifically identified goodwill and intangible assets. The capital allocated to the reporting units is incorporated into the annual budget process, which is approved by Citi's Board of Directors.

Goodwill impairment testing involves management judgment, requiring an assessment of whether the carrying value of a reporting unit can be supported by its fair value of the reporting unit using widely accepted valuation techniques, such as the market approach (earnings multiples and/or transaction multiples) and/or the income approach (discounted cash flow (DCF) method). In applying these methodologies, Citi utilizes a number of factors, including actual operating results, future business plans, economic projections and market data.

Similar to 2020, Citi engaged an independent valuation specialist in 2021 to assist in Citi's valuation of all the reporting units, employing both the market approach and the DCF method. The resulting fair values were relatively consistent and appropriate weighting was given to outputs from both methods. The DCF method utilized at the time of each impairment test used discount rates that Citi believes adequately reflected the risk and uncertainty in the financial markets in the internally generated cash flow projections.

The DCF method employs a capital asset pricing model in estimating the discount rate. Since none of the Company's reporting units are publicly traded, individual reporting unit fair value determinations cannot be directly correlated to Citigroup's common stock price. The sum of the fair values of the reporting units exceeded the overall market capitalization of Citi as of July 1, 2021. However, Citi believes that it is not meaningful to reconcile the sum of the fair values of the Company's reporting units to its market capitalization due to several factors. The market capitalization of Citigroup reflects the execution risk in a transaction involving Citigroup due to its size. However, the individual reporting units' fair values are not subject to the same level of execution risk nor a business model that is as international. In addition, the market capitalization of Citigroup does not include consideration of the individual reporting unit's control premium.

Citi performed its annual goodwill impairment test as of July 1, 2021. The fair values of Citi's reporting units as a percentage of their carrying values ranged from approximately 125% to 153%, resulting in no impairment. While the inherent risk related to uncertainty is embedded in the key assumptions used in the valuations, the economic and business environments continue to evolve as management implements its strategic refresh, which includes, among others, the exits of consumer businesses in 13 markets in *Asia* and *EMEA*, as well as the exit of the Mexico consumer, small business and middle-market banking operations. If management's future estimate of key economic and market assumptions were to differ from its current assumptions, Citi could potentially experience material goodwill impairment charges in the future. Citi expects that the implementation of its new operating segments and reporting units in the first quarter of 2022, as well as the timing and sequencing of the sales of its *Asia* consumer banking businesses, may result in goodwill impairment. See Notes 1 and 16 to the Consolidated Financial Statements for additional information on goodwill, including the changes in the goodwill balance year-over-year and the segments' goodwill balances as of December 31, 2021.

Income Taxes

Overview

Citi is subject to the income tax laws of the U.S., its states and local municipalities and the non-U.S. jurisdictions in which Citi operates. These tax laws are complex and are subject to differing interpretations by the taxpayer and the relevant governmental taxing authorities. 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 audit.

In establishing a provision for income tax expense, Citi must make judgments and interpretations about the application of these inherently complex tax laws. Citi must also make estimates about when in the future certain items will affect taxable income in the various tax jurisdictions, both domestic and foreign. Deferred taxes are recorded for the future consequences of events that have been recognized in the financial statements or tax returns, based upon enacted tax laws and rates. Deferred tax assets (DTAs) are recognized subject to management's judgment that realization is more-likely-than-not. For example, if it is more-likely-than-not that a carry-forward would expire unused, Citi would set up a valuation allowance (VA) against that DTA. Citi has established valuation allowances as described below.

As a result of the Tax Cuts and Jobs Act (Tax Reform), beginning in 2018, Citi is taxed on income generated by its U.S. operations at a federal tax rate of 21%. The effect on Citi's state tax rate is dependent upon how and when the individual states that have not yet addressed the federal tax law changes choose to adopt the various new provisions of the U.S. Internal Revenue Code.

Citi's non-U.S. branches and subsidiaries are subject to tax at their local tax rates. Non-U.S. branches also continue to be subject to U.S. taxation. The impact of this on Citi's earnings depends on the level of branch pretax income, the local branch tax rate and allocations of overall domestic loss (ODL) and expenses for U.S. tax purposes to branch earnings. Citi expects no residual U.S. tax on such earnings since it currently has sufficient branch tax carry-forwards. With respect to non-U.S. subsidiaries, dividends from these subsidiaries are excluded from U.S. taxation. While the majority of Citi's non-U.S. subsidiary earnings are classified as Global Intangible Low Taxed Income (GILTI), Citi expects no material residual U.S. tax on such earnings based on its non-U.S. subsidiaries' local tax rates, which exceed, on average, the GILTI tax rate. Finally, Citi does not expect the Base Erosion Anti-Abuse Tax (BEAT) to affect its tax provision.

Deferred Tax Assets and Valuation Allowances

At December 31, 2021, Citi had net DTAs of $24.8 billion. In the fourth quarter of 2021, Citi's DTAs increased by $0.3 billion, primarily as a result of losses in *Other comprehensive income*. On a full-year basis, Citi's DTAs at December 31, 2021 were essentially unchanged from $24.8 billion at December 31, 2020.

Of Citi's total net DTAs of $24.8 billion as of December 31, 2021, $9.5 billion, primarily related to tax carry-forwards, was deducted in calculating Citi's regulatory capital. Net DTAs arising from temporary differences are deducted from regulatory capital if in excess of the 10%/15% limitations (see "Capital Resources" above). For the quarter and year ended December 31, 2021, Citi did not have any such DTAs. Accordingly, the remaining $15.3 billion of net DTAs as of December 31, 2021 was not deducted in calculating regulatory capital pursuant to Basel III standards, and was appropriately risk weighted under those rules.

Citi's total VA at December 31, 2021 was $4.2 billion, a decrease of $1.0 billion from $5.2 billion at December 31, 2020. The decrease was primarily driven by usage of carry-forwards and expirations in the FTC branch basket. Citi's VA of $4.2 billion is composed of $2.5 billion on its FTC carry-forwards, $1.0 billion on its U.S. residual DTA related to its non-U.S. branches, $0.6 billion on local non-U.S. DTAs and $0.1 billion on state net operating loss carry-forwards.

In 2021, Citi reduced its VA for DTAs related to FTCs in its branch basket for 2021 and future periods. As stated above with regard to the impact of non-U.S. branches on Citi's earnings, the level of branch pretax income, the local branch tax rate and the allocations of ODL and expenses for U.S. tax purposes to the branch basket are the main factors in determining the branch VA. The allocated ODL was enhanced by significant taxable income generated in the current year. In addition, during 2021, the global interest rate environment and balance sheet requirements in non-U.S. branches resulted in a lower relative allocation of interest expense to non-U.S. branches. The combination of the factors enumerated resulted in a VA release of $0.2 billion. Citi also released branch basket VA of $0.1 billion with respect to future years, based upon Citi's operating plan and estimates of future branch basket factors, as outlined above.

Citi's VA of $0.8 billion against FTC carry-forwards in its general basket was reduced by $0.2 billion in 2021, primarily as a result of audit adjustments made to prior years' returns. In Citi's general basket for FTCs, changes in the forecasted amount of income in U.S. locations derived from sources outside the U.S., in addition to tax examination changes from prior

years, could alter the amount of valuation allowance that is needed against such FTCs. Citi continues to look for additional actions that may become prudent and feasible, taking into account client, regulatory and operational considerations. (See Note 9 to the Consolidated Financial Statements.)

Recognized FTCs comprised approximately $2.8 billion of Citi's DTAs as of December 31, 2021, compared to approximately $4.4 billion as of December 31, 2020. The decrease in FTCs year-over-year was primarily due to current-year usage. The FTC carry-forward period represents the most time-sensitive component of Citi's DTAs.

Citi has an ODL of approximately $15 billion at December 31, 2021, which allows Citi to elect a percentage between 50% and 100% of future years' domestic source income to be reclassified as foreign source income. (See Note 9 to the Consolidated Financial Statements for a description of the ODL.)

The majority of Citi's U.S. federal net operating loss carry-forward and all of its New York State and City net operating loss carry-forwards are subject to a carry-forward period of 20 years. This provides enough time to fully utilize the net DTAs pertaining to these existing net operating loss carry-forwards. This is due to Citi's forecast of sufficient U.S. taxable income and the continued taxation of Citi's non-U.S. income by New York State and City.

Although realization is not assured, Citi believes that the realization of its recognized net DTAs of $24.8 billion at December 31, 2021 is more-likely-than-not, based upon management's expectations of future taxable income in the jurisdictions in which the DTAs arise, as well as available tax planning strategies (as defined in ASC Topic 740, *Income Taxes*). Citi has concluded that it has the necessary positive evidence to support the realization of its net DTAs after taking its valuation allowances into consideration.

For additional information on Citi's income taxes, including its income tax provision, tax assets and liabilities and a tabular summary of Citi's net DTAs balance as of December 31, 2021 (including the FTCs and applicable expiration dates of the FTCs), see Note 9 to the Consolidated Financial Statements. For information on Citi's ability to use its DTAs, see "Risk Factors—Strategic Risks" above and Note 9 to the Consolidated Financial Statements.

Potential U.S. Tax Legislation

On January 4, 2022, final FTC regulations were published in the Federal Register. These regulations eliminate the creditability of foreign taxes paid in certain situations. These include countries that do not align with U.S. tax principles in significant part and for services performed outside the recipient country. Citi is examining the extent to which these regulations will impact its effective tax rate. Any adoption effect on Citi's DTAs, including its valuation allowance against FTC carry-forwards, will be reported in the first quarter of 2022. Citi does not expect a significant impact on its 2022 effective tax rate. However, the U.S. president's proposed legislation discussed below, if enacted, could exacerbate the impact of these regulations.

The president has proposed the Build Back Better Act, which makes substantial changes to the taxation of multinational corporations. While the Act does not presently contain an increase to the U.S. corporate tax rate, it would impose a minimum level of U.S. taxation, computed on a jurisdiction by jurisdiction basis. The Organization for Economic Cooperation and Development (OECD) Inclusive Framework (140 countries) similarly proposed a minimum tax that could impact Citi.

2017 Impact of Tax Reform

The table below discloses the as-reported GAAP results for 2018 and 2017, as well as the 2017 adjusted results excluding the one-time 2017 impact of Tax Reform. The table does not reflect any adjustment to 2018 results:

In millions of dollars, except per share amounts and as otherwise noted	2018 as reported[1]	2017 as reported	2017 one-time impact of Tax Reform	2017 adjusted results[2]	2018 increase (decrease) vs. 2017 ex-Tax Reform	
					$ Change	% Change
Net income	$18,045	$ (6,798)	$(22,594)	$15,796	$2,249	14%
Diluted earnings per share:						
Income from continuing operations	6.69	(2.94)	(8.31)	5.37	1.32	25
Net income	6.68	(2.98)	(8.31)	5.33	1.35	25
Effective tax rate	22.8%	129.1%	(9,930)bps	29.8%		(700)bps
Performance and other metrics:						
Return on average assets	0.94%	(0.36)%	(120)bps	0.84%		10bps
Return on average common stockholders' equity	9.4	(3.9)	(1,090)	7.0		240
Return on average total stockholders' equity	9.1	(3.0)	(1,000)	7.0		210
Return on average tangible common equity	11.0	(4.6)	(1,270)	8.1		290
Dividend payout ratio	23.1	(32.2)	(5,020)	18.0		510
Total payout ratio	109.1	(213.9)	(33,140)	117.5		840

(1) 2018 includes the one-time benefit of $94 million, due to the finalization of the provisional component of the impact based on Citi's analysis as well as additional guidance received from the U.S. Treasury Department related to Tax Reform, which impacted the tax line within *Corporate/Other*.
(2) 2017 excludes the one-time impact of Tax Reform.

Litigation Accruals

See the discussion in Note 27 to the Consolidated Financial Statements for information regarding Citi's policies on establishing accruals for litigation and regulatory contingencies.

Accounting Changes

See Note 1 to the Consolidated Financial Statements for a discussion of changes in accounting standards.

DISCLOSURE CONTROLS AND PROCEDURES

Citi's disclosure controls and procedures are designed to ensure that information required to be disclosed under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, including without limitation that information required to be disclosed by Citi in its SEC filings is accumulated and communicated to management, including the Chief Executive Officer (CEO) and Chief Financial Officer (CFO), as appropriate, to allow for timely decisions regarding required disclosure.

Citi's Disclosure Committee assists the CEO and CFO in their responsibilities to design, establish, maintain and evaluate the effectiveness of Citi's disclosure controls and procedures. The Disclosure Committee is responsible for, among other things, the oversight, maintenance and implementation of the disclosure controls and procedures, subject to the supervision and oversight of the CEO and CFO.

Citi's management, with the participation of its CEO and CFO, has evaluated the effectiveness of Citigroup's disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934) as of December 31, 2021. Based on that evaluation, the CEO and CFO have concluded that at that date Citigroup's disclosure controls and procedures were effective.

MANAGEMENT'S ANNUAL REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

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

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

Citi's management assessed the effectiveness of Citigroup's internal control over financial reporting as of December 31, 2021 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control—Integrated Framework (2013)*. Based on this assessment, management believes that, as of December 31, 2021, Citi's internal control over financial reporting was effective. In addition, there were no changes in Citi's internal control over financial reporting during the fiscal quarter ended December 31, 2021 that materially affected, or are reasonably likely to materially affect, Citi's internal control over financial reporting.

The effectiveness of Citi's internal control over financial reporting as of December 31, 2021 has been audited by KPMG LLP, Citi's independent registered public accounting firm, as stated in their report below, which expressed an unqualified opinion on the effectiveness of Citi's internal control over financial reporting as of December 31, 2021.

FORWARD-LOOKING STATEMENTS

Certain statements in this Form 10-K, including but not limited to statements included within the Management's Discussion and Analysis of Financial Condition and Results of Operations, are "forward-looking statements" within the meaning of the U.S. Private Securities Litigation Reform Act of 1995. In addition, Citigroup also may make forward-looking statements in its other documents filed or furnished with the SEC, and its management may make forward-looking statements orally to analysts, investors, representatives of the media and others.

Generally, forward-looking statements are not based on historical facts but instead represent Citigroup's and its management's beliefs regarding future events. Such statements may be identified by words such as believe, expect, anticipate, intend, estimate, may increase, may fluctuate, target and illustrative, and similar expressions or future or conditional verbs such as will, should, would and could.

Such statements are based on management's current expectations and are subject to risks, uncertainties and changes in circumstances. Actual results and capital and other financial conditions may differ materially from those included in these statements due to a variety of factors, including without limitation (i) the precautionary statements included within each individual business's discussion and analysis of its results of operations and (ii) the factors listed and described under "Risk Factors" above.

Any forward-looking statements made by or on behalf of Citigroup speak only as to the date they are made, and Citi does not undertake to update forward-looking statements to reflect the impact of circumstances or events that arise after the forward-looking statements were made.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors
Citigroup Inc.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of Citigroup Inc. and subsidiaries (the Company) as of December 31, 2021 and 2020, the related consolidated statements of income, comprehensive income, changes in stockholders' equity and cash flows for each of the years in the three-year period ended December 31, 2021, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021 based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company has changed its method of accounting for the recognition and measurement of credit losses as of January 1, 2020 due to the adoption of ASC Topic 326, Financial Instruments – Credit Losses.

Basis for Opinions

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

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

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does

not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Assessment of the fair value of certain Level 3 assets and liabilities measured on a recurring basis

As described in Notes 1, 24 and 25 to the consolidated financial statements, the Company's assets and liabilities recorded at fair value on a recurring basis were $856.6 billion and $313.4 billion, respectively at December 31, 2021. The Company estimated the fair value of Level 3 assets and liabilities measured on a recurring basis ($14.7 billion and $35.2 billion, respectively at December 31, 2021) utilizing various valuation techniques with one or more significant inputs or significant value drivers being unobservable including, but not limited to, complex internal valuation models, alternative pricing procedures or comparables analysis and discounted cash flows.

We identified the assessment of the measurement of fair value for certain Level 3 assets and liabilities recorded at fair value on a recurring basis as a critical audit matter. A high degree of effort, including specialized skills and knowledge, and subjective and complex auditor judgment was involved in the assessment of the Level 3 fair values due to measurement uncertainty. Specifically, the assessment encompassed the evaluation of the fair value methodology, including methods, models and significant assumptions and inputs used to estimate fair value. Significant assumptions and inputs include interest rate, price, yield, credit spread, volatilities, correlations and forward prices. The assessment also included an evaluation of the conceptual soundness and performance of the valuation models.

The following are the primary procedures we performed to address this critical audit matter. We involved valuation professionals with specialized skills and knowledge who assisted in evaluating the design and testing the operating effectiveness of certain internal controls related to the Company's Level 3 fair value measurements, including controls over:

- valuation methodologies, including significant inputs and assumptions
- independent price verification
- evaluating that significant model assumptions and inputs reflected those which a market participant would use to determine an exit price in the current market environment
- the valuation models used were mathematically accurate and appropriate to value the financial instruments
- relevant information used within the Company's models that was reasonably available was considered in the fair value determination.

We evaluated the Company's methodology for compliance with U.S. generally accepted accounting principles. We involved valuation professionals with specialized skills and knowledge who assisted in developing an independent fair value estimate for a selection of certain Level 3 assets and liabilities recorded at fair value on a recurring basis, based on independently developed valuation models and assumptions, as applicable, using market data sources we determined to be relevant and reliable, and compared our independent expectation to the Company's fair value measurements.

Assessment of the allowance for credit losses collectively evaluated for impairment

As discussed in Notes 1 and 15 to the consolidated financial statements, the Company's allowance for credit losses related to loans and unfunded lending commitments collectively evaluated for impairment (the collective ACLL) was $18.3 billion as of December 31, 2021. The expected credit losses for the quantitative component of the collective ACLL is the product of multiplying the probability of default (PD), loss given default (LGD), and exposure at default (EAD) for consumer and corporate loans. For consumer credit cards, the Company uses the payment rate approach over the life of the loan, which leverages payment rate curves, to determine the payments that should be applied to liquidate the end-of-period balance in the estimation of EAD. For unconditionally cancelable accounts, reserves are based on the expected life of the balance as of the evaluation date and do not include any undrawn commitments that are unconditionally cancelable. The Company's models utilize a single forward-looking macroeconomic forecast and macroeconomic assumptions over reasonable and supportable forecast periods. Reasonable and supportable forecast periods vary by product. For consumer loan models, the Company uses a 13-quarter reasonable and supportable period and reverts to historical loss experience thereafter. For corporate loan models, the Company uses a nine-quarter reasonable and supportable period followed by a three-quarter transition to historical loss experience. Additionally, for consumer loans, these models consider leading credit indicators including loan delinquencies, as well as economic factors. For corporate loans, these models consider the credit quality as measured by risk ratings and economic factors. The qualitative component considers idiosyncratic events and the uncertainty of forward-looking economic scenarios.

We identified the assessment of the collective ACLL as a critical audit matter. The assessment involved significant measurement uncertainty requiring complex auditor judgment, and specialized skills and knowledge as well as experience in the industry. This assessment encompassed the evaluation of the various components of the collective ACLL methodology, including the methods and models used to estimate the PD, LGD, and EAD and certain key assumptions and inputs for the Company's quantitative and qualitative components. Key assumptions and inputs for consumer loans included loan delinquencies, certain credit indicators, reasonable and supportable forecast periods, expected life as well as economic factors, including unemployment rates, gross domestic product (GDP), and housing prices, which are considered in the model. For corporate loans, key assumptions and inputs included risk

ratings, reasonable and supportable forecasts, credit conversion factor for unfunded lending commitments, and economic factors, including GDP and unemployment rates considered in the model. Key assumptions and inputs for the qualitative component for both consumer and corporate loan portfolios included the likelihood and severity of a downside scenario and consideration of uncertainties due to idiosyncratic events as a result of the COVID-19 pandemic. The assessment also included an evaluation of the conceptual soundness and performance of the PD, LGD, and EAD models. In addition, auditor judgment was required to evaluate the sufficiency of audit evidence obtained.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's measurement of the collective ACLL estimate, including controls over the:

- approval of the collective ACLL methodologies
- determination of the key assumptions and inputs used to estimate the quantitative and qualitative components of the collective ACLL
- performance monitoring of the PD, LGD, and EAD models.

We evaluated the Company's process to develop the collective ACLL estimate by testing certain sources of data, and assumptions that the Company used and considered the relevance and reliability of such data, and assumptions. In addition, we involved credit risk professionals with specialized skills and knowledge, who assisted in:

- reviewing the Company's collective ACLL methodologies and key assumptions for compliance with U.S. generally accepted accounting principles
- assessing the conceptual soundness and performance testing of the PD, LGD, and EAD models by inspecting the model documentation to determine whether the models are suitable for their intended use
- evaluating judgments made by the Company relative to the development and performance monitoring testing of the PD, LGD, and EAD models by comparing them to relevant Company-specific metrics
- assessing the economic forecast scenarios through comparison to publicly available forecasts
- evaluating the methodologies used to develop certain economic forecast scenarios by comparing them to relevant industry practices
- testing corporate loan risk ratings for a selection of borrowers by evaluating the financial performance of the borrower, sources of repayment, and any relevant guarantees or underlying collateral
- evaluating the methodologies used in determining the qualitative components and the effect of those components on the collective ACLL compared with relevant credit risk factors and consistency with credit trends.

We also assessed the sufficiency of the audit evidence obtained related to the collective ACLL by evaluating the:

- cumulative results of the audit procedures
- qualitative aspects of the Company's accounting practices
- potential bias in the accounting estimates.

KPMG LLP

We have served as the Company's auditor since 1969.

New York, New York
(PCAOB ID # 185)
February 25, 2022

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CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED STATEMENT OF INCOME

Citigroup Inc. and Subsidiaries

In millions of dollars, except per share amounts	Years ended December 31, 2021	2020	2019
Revenues			
Interest revenue	**$ 50,475**	$ 58,089	$ 76,510
Interest expense	**7,981**	13,338	28,382
Net interest income	**$ 42,494**	$ 44,751	$ 48,128
Commissions and fees	**$ 13,672**	$ 11,385	$ 11,746
Principal transactions	**10,154**	13,885	8,892
Administration and other fiduciary fees	**3,943**	3,472	3,411
Realized gains on sales of investments, net	**665**	1,756	1,474
Impairment losses on investments:			
Impairment losses on investments and other assets	**(206)**	(165)	(32)
Provision for credit losses on AFS debt securities[1]	**(3)**	(3)	—
Net impairment losses recognized in earnings	**$ (209)**	$ (168)	$ (32)
Other revenue	**$ 1,165**	$ 420	$ 1,448
Total non-interest revenues	**$ 29,390**	$ 30,750	$ 26,939
Total revenues, net of interest expense	**$ 71,884**	$ 75,501	$ 75,067
Provisions for credit losses and for benefits and claims			
Provision for credit losses on loans	**$ (3,103)**	$ 15,922	$ 8,218
Provision for credit losses on held-to-maturity (HTM) debt securities	**(3)**	7	—
Provision for credit losses on other assets	**—**	7	—
Policyholder benefits and claims	**116**	113	73
Provision for credit losses on unfunded lending commitments	**(788)**	1,446	92
Total provisions for credit losses and for benefits and claims[2]	**$ (3,778)**	$ 17,495	$ 8,383
Operating expenses			
Compensation and benefits	**$ 25,134**	$ 22,214	$ 21,433
Premises and equipment	**2,314**	2,333	2,328
Technology/communication	**7,828**	7,383	7,077
Advertising and marketing	**1,490**	1,217	1,516
Other operating	**11,427**	11,227	10,429
Total operating expenses	**$ 48,193**	$ 44,374	$ 42,783
Income from continuing operations before income taxes	**$ 27,469**	$ 13,632	$ 23,901
Provision for income taxes	**5,451**	2,525	4,430
Income from continuing operations	**$ 22,018**	$ 11,107	$ 19,471
Discontinued operations			
Income (loss) from discontinued operations	**$ 7**	$ (20)	$ (31)
Benefit for income taxes	**—**	—	(27)
Income (loss) from discontinued operations, net of taxes	**$ 7**	$ (20)	$ (4)
Net income before attribution of noncontrolling interests	**$ 22,025**	$ 11,087	$ 19,467
Noncontrolling interests	**73**	40	66
Citigroup's net income	**$ 21,952**	$ 11,047	$ 19,401
Basic earnings per share[3]			
Income from continuing operations	**$ 10.21**	$ 4.75	$ 8.08
Loss from discontinued operations, net of taxes	**—**	(0.01)	—
Net income	**$ 10.21**	$ 4.74	$ 8.08
Weighted average common shares outstanding *(in millions)*	**2,033.0**	2,085.8	2,249.2
Diluted earnings per share[3]			
Income from continuing operations	**$ 10.14**	$ 4.73	$ 8.04
Loss from discontinued operations, net of taxes	**—**	(0.01)	—
Net income	**$ 10.14**	$ 4.72	$ 8.04
Adjusted weighted average common shares outstanding *(in millions)*	**2,049.4**	2,099.0	2,265.3

(1) This presentation is in accordance with ASC 326, which requires the provision for credit losses on AFS securities to be included in revenue.
(2) This total excludes the provision for credit losses on AFS securities, which is disclosed separately above.
(3) Due to rounding, earnings per share on continuing operations and discontinued operations may not sum to earnings per share on net income.

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

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

Citigroup Inc. and Subsidiaries

In millions of dollars	Years ended December 31, 2021	2020	2019
Citigroup's net income	**$21,952**	$11,047	$19,401
Add: Citigroup's other comprehensive income (loss)			
Net change in unrealized gains and losses on debt securities, net of taxes[1]	**$ (3,934)**	$ 3,585	$ 1,985
Net change in debt valuation adjustment (DVA), net of taxes[1]	**232**	(475)	(1,136)
Net change in cash flow hedges, net of taxes	**(1,492)**	1,470	851
Benefit plans liability adjustment, net of taxes[2]	**1,012**	(55)	(552)
Net change in foreign currency translation adjustment, net of taxes and hedges	**(2,525)**	(250)	(321)
Net change in excluded component of fair value hedges, net of taxes	**—**	(15)	25
Citigroup's total other comprehensive income (loss)	**$ (6,707)**	$ 4,260	$ 852
Citigroup's total comprehensive income	**$15,245**	$15,307	$20,253
Add: Other comprehensive income (loss) attributable to noncontrolling interests	**$ (99)**	$ 26	$ —
Add: Net income attributable to noncontrolling interests	**73**	40	66
Total comprehensive income	**$15,219**	$15,373	$20,319

(1) See Note 1 to the Consolidated Financial Statements.
(2) See Note 8 to the Consolidated Financial Statements.

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

CONSOLIDATED BALANCE SHEET

Citigroup Inc. and Subsidiaries

In millions of dollars	December 31, 2021	2020
Assets		
Cash and due from banks (including segregated cash and other deposits)	**$ 27,515**	$ 26,349
Deposits with banks, net of allowance	**234,518**	283,266
Securities borrowed and purchased under agreements to resell (including $216,466 and $185,204 as of December 31, 2021 and 2020, respectively, at fair value), net of allowance	**327,288**	294,712
Brokerage receivables, net of allowance	**54,340**	44,806
Trading account assets (including $133,828 and $168,967 pledged to creditors at December 31, 2021 and 2020, respectively)	**331,945**	375,079
Investments:		
Available-for-sale debt securities (including $9,226 and $5,921 pledged to creditors as of December 31, 2021 and 2020, respectively), net of allowance	**288,522**	335,084
Held-to-maturity debt securities (including $1,460 and $547 pledged to creditors as of December 31, 2021 and 2020, respectively), net of allowance	**216,963**	104,943
Equity securities (including $1,032 and $1,066 as of December 31, 2021 and 2020, respectively, at fair value)	**7,337**	7,332
Total investments	**$ 512,822**	$ 447,359
Loans:		
Consumer (including $12 and $14 as of December 31, 2021 and 2020, respectively, at fair value)	**271,236**	288,839
Corporate (including 6,070 and 6,840 as of December 31, 2021 and 2020, respectively, at fair value)	**396,531**	387,044
Loans, net of unearned income	**$ 667,767**	$ 675,883
Allowance for credit losses on loans (ACLL)	**(16,455)**	(24,956)
Total loans, net	**$ 651,312**	$ 650,927
Goodwill	**21,299**	22,162
Intangible assets (including MSRs of $404 and $336 as of December 31, 2021 and 2020, respectively, at fair value)	**4,495**	4,747
Other assets (including $12,342 and $14,613 as of December 31, 2021 and 2020, respectively, at fair value), net of allowance	**125,879**	110,683
Total assets	**$2,291,413**	$2,260,090

The following table presents certain assets of consolidated variable interest entities (VIEs), which are included on the Consolidated Balance Sheet above. The assets in the table below include those assets that can only be used to settle obligations of consolidated VIEs, presented on the following page, and are in excess of those obligations. In addition, the assets in the table below include third-party assets of consolidated VIEs only and exclude intercompany balances that eliminate in consolidation.

In millions of dollars	December 31, 2021	2020
Assets of consolidated VIEs to be used to settle obligations of consolidated VIEs		
Cash and due from banks	**$ 260**	$ 281
Trading account assets	**10,038**	8,104
Investments	**844**	837
Loans, net of unearned income		
Consumer	**34,677**	37,561
Corporate	**14,312**	17,027
Loans, net of unearned income	**$48,989**	$54,588
Allowance for credit losses on loans (ACLL)	**(2,668)**	(3,794)
Total loans, net	**$46,321**	$50,794
Other assets	**1,174**	43
Total assets of consolidated VIEs to be used to settle obligations of consolidated VIEs	**$58,637**	$60,059

Statement continues on the next page.

CONSOLIDATED BALANCE SHEET (Continued)

Citigroup Inc. and Subsidiaries

In millions of dollars, except shares and per share amounts	December 31, 2021	2020
Liabilities		
Non-interest-bearing deposits in U.S. offices	**$ 158,552**	$ 126,942
Interest-bearing deposits in U.S. offices (including $879 and $879 as of December 31, 2021 and 2020, respectively, at fair value)	**543,283**	503,213
Non-interest-bearing deposits in offices outside the U.S.	**97,270**	100,543
Interest-bearing deposits in offices outside the U.S. (including $787 and $1,079 as of December 31, 2021 and 2020, respectively, at fair value)	**518,125**	549,973
Total deposits	**$1,317,230**	$1,280,671
Securities loaned and sold under agreements to repurchase (including $56,694 and $60,206 as of December 31, 2021 and 2020, respectively, at fair value)	**191,285**	199,525
Brokerage payables (including $3,575 and $6,835 as of December 31, 2021 and 2020, respectively, at fair value), including allowance	**61,430**	50,484
Trading account liabilities	**161,529**	168,027
Short-term borrowings (including $7,358 and $4,683 as of December 31, 2021 and 2020, respectively, at fair value)	**27,973**	29,514
Long-term debt (including $82,609 and $67,063 as of December 31, 2021 and 2020, respectively, at fair value)	**254,374**	271,686
Other liabilities	**74,920**	59,983
Total liabilities	**$2,088,741**	$2,059,890
Stockholders' equity		
Preferred stock ($1.00 par value; authorized shares: 30 million), issued shares: **759,800 as of December 31, 2021** and 779,200 as of December 31, 2020, at aggregate liquidation value	**$ 18,995**	$ 19,480
Common stock ($0.01 par value; authorized shares: 6 billion), issued shares: **3,099,651,835 as of December 31, 2021** and 3,099,633,160 as of December 31, 2020	**31**	31
Additional paid-in capital	**108,003**	107,846
Retained earnings	**184,948**	168,272
Treasury stock, at cost: **1,115,296,641 shares as of December 31, 2021** and 1,017,543,951 shares as of December 31, 2020	**(71,240)**	(64,129)
Accumulated other comprehensive income (loss) *(AOCI)*	**(38,765)**	(32,058)
Total Citigroup stockholders' equity	**$ 201,972**	$ 199,442
Noncontrolling interests	**700**	758
Total equity	**$ 202,672**	$ 200,200
Total liabilities and equity	**$2,291,413**	$2,260,090

The following table presents certain liabilities of consolidated VIEs, which are included on the Consolidated Balance Sheet above. The liabilities in the table below include third-party liabilities of consolidated VIEs only and exclude intercompany balances that eliminate in consolidation. The liabilities also exclude amounts where creditors or beneficial interest holders have recourse to the general credit of Citigroup.

In millions of dollars	December 31, 2021	2020
Liabilities of consolidated VIEs for which creditors or beneficial interest holders do not have recourse to the general credit of Citigroup		
Short-term borrowings	**$ 8,376**	$ 9,278
Long-term debt	**12,579**	20,405
Other liabilities	**694**	463
Total liabilities of consolidated VIEs for which creditors or beneficial interest holders do not have recourse to the general credit of Citigroup	**$21,649**	$ 30,146

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

CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDERS' EQUITY

Citigroup Inc. and Subsidiaries

	Years ended December 31,					
	Amounts			Shares		
In millions of dollars, except shares in thousands	**2021**	2020	2019	**2021**	2020	2019
Preferred stock at aggregate liquidation value						
Balance, beginning of year	**$ 19,480**	$ 17,980	$ 18,460	**779**	719	738
Issuance of new preferred stock	**3,300**	3,000	1,500	**132**	120	60
Redemption of preferred stock	**(3,785)**	(1,500)	(1,980)	**(151)**	(60)	(79)
Balance, end of year	**$ 18,995**	$ 19,480	$ 17,980	**760**	779	719
Common stock and additional paid-in capital (APIC)						
Balance, beginning of year	**$107,877**	$107,871	$107,953	**3,099,633**	3,099,603	3,099,567
Employee benefit plans	**85**	5	(112)	**19**	30	36
Preferred stock issuance costs (new issuances, net of reclassifications to retained earnings for redemptions)	**25**	(4)	(4)	**—**	—	—
Other	**47**	5	34	**—**	—	—
Balance, end of year	**$108,034**	$107,877	$107,871	**3,099,652**	3,099,633	3,099,603
Retained earnings						
Balance, beginning of year	**$168,272**	$165,369	$151,347			
Adjustments to opening balance, net of taxes[1]						
Financial instruments—credit losses (CECL adoption)	**—**	(3,076)	—			
Variable post-charge-off third-party collection costs	**—**	330	—			
Lease accounting, intra-entity transfers of assets	**—**	—	151			
Adjusted balance, beginning of year	**$168,272**	$162,623	$151,498			
Citigroup's net income	**21,952**	11,047	19,401			
Common dividends[2]	**(4,196)**	(4,299)	(4,403)			
Preferred dividends	**(1,040)**	(1,095)	(1,109)			
Other (primarily reclassifications from APIC for preferred issuance costs on redemptions)	**(40)**	(4)	(18)			
Balance, end of year	**$184,948**	$168,272	$165,369			
Treasury stock, at cost						
Balance, beginning of year	**$ (64,129)**	$ (61,660)	$ (44,370)	**(1,017,544)**	(985,480)	(731,100)
Employee benefit plans[3]	**489**	456	585	**7,745**	8,676	9,872
Treasury stock acquired[4]	**(7,600)**	(2,925)	(17,875)	**(105,498)**	(40,740)	(264,252)
Balance, end of year	**$ (71,240)**	$ (64,129)	$ (61,660)	**(1,115,297)**	(1,017,544)	(985,480)
Citigroup's accumulated other comprehensive income (loss)						
Balance, beginning of year	**$ (32,058)**	$ (36,318)	$ (37,170)			
Citigroup's total other comprehensive income (loss)	**(6,707)**	4,260	852			
Balance, end of year	**$ (38,765)**	$ (32,058)	$ (36,318)			
Total Citigroup common stockholders' equity	**$182,977**	$179,962	$175,262	**1,984,355**	2,082,089	2,114,123
Total Citigroup stockholders' equity	**$201,972**	$199,442	$193,242			
Noncontrolling interests						
Balance, beginning of year	**$ 758**	$ 704	$ 854			
Transactions between noncontrolling-interest shareholders and the related consolidated subsidiary	**—**	—	—			
Transactions between Citigroup and the noncontrolling-interest shareholders	**(10)**	(4)	(169)			
Net income attributable to noncontrolling-interest shareholders	**73**	40	66			
Distributions paid to noncontrolling-interest shareholders	**(10)**	(2)	(40)			
Other comprehensive income (loss) attributable to noncontrolling-interest shareholders	**(99)**	26	—			
Other	**(12)**	(6)	(7)			
Net change in noncontrolling interests	**$ (58)**	$ 54	$ (150)			
Balance, end of year	**$ 700**	$ 758	$ 704			
Total equity	**$202,672**	$200,200	$193,946			

(1) See Note 1 to the Consolidated Financial Statements for additional details.
(2) Common dividends declared were $0.51 per share in the first, second, third and fourth quarters of 2021 and 2020; $0.45 per share in the first and second quarters of 2019 and $0.51 per share in the third and fourth quarters of 2019.
(3) Includes treasury stock related to (i) certain activity on employee stock option program exercises where the employee delivers existing shares to cover the option exercise, or (ii) under Citi's employee restricted or deferred stock programs where shares are withheld to satisfy tax requirements.
(4) Primarily consists of open market purchases under Citi's Board of Directors-approved common stock repurchase programs.

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

CONSOLIDATED STATEMENT OF CASH FLOWS

Citigroup Inc. and Subsidiaries

In millions of dollars	Years ended December 31, 2021	2020	2019
Cash flows from operating activities of continuing operations			
Net income before attribution of noncontrolling interests	**$ 22,025**	$ 11,087	$ 19,467
Net income attributable to noncontrolling interests	**73**	40	66
Citigroup's net income	**$ 21,952**	$ 11,047	$ 19,401
Income (loss) from discontinued operations, net of taxes	**7**	(20)	(4)
Income from continuing operations—excluding noncontrolling interests	**$ 21,945**	$ 11,067	$ 19,405
Adjustments to reconcile net income to net cash provided by (used in) operating activities of continuing operations			
Net loss on significant disposals[1]	**700**	—	—
Depreciation and amortization	**3,964**	3,937	3,905
Deferred income taxes	**1,413**	(2,333)	(610)
Provision for credit losses on loans and unfunded lending commitments	**(3,891)**	17,368	8,310
Realized gains from sales of investments	**(665)**	(1,756)	(1,474)
Impairment losses on investments and other assets	**206**	165	32
Change in trading account assets	**43,059**	(98,997)	(20,124)
Change in trading account liabilities	**(6,498)**	48,133	(24,411)
Change in brokerage receivables net of brokerage payables	**1,412**	(3,066)	(20,377)
Change in loans HFS	**(3,809)**	1,202	(909)
Change in other assets	**(2,139)**	(1,012)	4,724
Change in other liabilities	**6,839**	558	1,737
Other, net	**(1,287)**	4,113	16,955
Total adjustments	**$ 39,304**	$ (31,688)	$ (32,242)
Net cash provided by (used in) operating activities of continuing operations	**$ 61,249**	$ (20,621)	$ (12,837)
Cash flows from investing activities of continuing operations			
Change in securities borrowed and purchased under agreements to resell	**$ (32,576)**	$ (43,390)	$ 19,362
Change in loans	**(1,173)**	14,249	(22,466)
Proceeds from sales and securitizations of loans	**2,918**	1,495	2,878
Purchases of investments	**(359,158)**	(334,900)	(274,491)
Proceeds from sales of investments	**126,728**	146,285	137,173
Proceeds from maturities of investments	**142,100**	124,229	119,051
Capital expenditures on premises and equipment and capitalized software	**(4,119)**	(3,446)	(5,336)
Proceeds from sales of premises and equipment, subsidiaries and affiliates and repossessed assets	**190**	50	259
Other, net	**185**	116	196
Net cash used in investing activities of continuing operations	**$(124,905)**	$ (95,312)	$ (23,374)
Cash flows from financing activities of continuing operations			
Dividends paid	**$ (5,198)**	$ (5,352)	$ (5,447)
Issuance of preferred stock	**3,300**	2,995	1,496
Redemption of preferred stock	**(3,785)**	(1,500)	(1,980)
Treasury stock acquired	**(7,601)**	(2,925)	(17,571)
Stock tendered for payment of withholding taxes	**(337)**	(411)	(364)
Change in securities loaned and sold under agreements to repurchase	**(8,240)**	33,186	(11,429)
Issuance of long-term debt	**70,658**	76,458	59,134
Payments and redemptions of long-term debt	**(74,950)**	(63,402)	(51,029)
Change in deposits	**44,966**	210,081	57,420
Change in short-term borrowings	**(1,541)**	(15,535)	12,703

Statement continues on the next page.

CONSOLIDATED STATEMENT OF CASH FLOWS (Continued)

Citigroup Inc. and Subsidiaries

In millions of dollars	Years ended December 31, 2021	2020	2019
Net cash provided by financing activities of continuing operations	**$ 17,272**	$ 233,595	$ 42,933
Effect of exchange rate changes on cash and due from banks	**$ (1,198)**	$ (1,966)	$ (908)
Change in cash, due from banks and deposits with banks	**(47,582)**	115,696	5,814
Cash, due from banks and deposits with banks at beginning of year	**309,615**	193,919	188,105
Cash, due from banks and deposits with banks at end of year	**$ 262,033**	$ 309,615	$ 193,919
Cash and due from banks (including segregated cash and other deposits)	**$ 27,515**	$ 26,349	$ 23,967
Deposits with banks, net of allowance	**234,518**	283,266	169,952
Cash, due from banks and deposits with banks at end of year	**$ 262,033**	$ 309,615	$ 193,919
Supplemental disclosure of cash flow information for continuing operations			
Cash paid during the year for income taxes	**$ 4,028**	$ 4,797	$ 4,888
Cash paid during the year for interest	**7,143**	12,094	27,901
Non-cash investing activities[1][2]			
Decrease in net loans associated with significant disposals reclassified to HFS	**$ 9,945**	$ —	$ —
Transfers to loans HFS *(Other assets)* from loans	**7,414**	2,614	5,500
Non-cash financing activities[1]			
Decrease in long-term debt associated with significant disposals reclassified to HFS	**$ 479**	$ —	$ —
Decrease in deposits associated with significant disposals reclassified to HFS	**8,407**	—	—

(1) See Note 2 to the Consolidated Financial Statements for further information on significant disposals.
(2) Operating and finance lease right-of-use assets and lease liabilities represent non-cash investing and financing activities, respectively, and are not included in the non-cash investing activities presented here. See Note 26 to the Consolidated Financial Statements for more information and balances.

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

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Throughout these Notes, "Citigroup," "Citi" and the "Company" refer to Citigroup Inc. and its consolidated subsidiaries.

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

Principles of Consolidation

The Consolidated Financial Statements include the accounts of Citigroup and its subsidiaries prepared in accordance with U.S. generally accepted accounting principles (GAAP). The Company consolidates subsidiaries in which it holds, directly or indirectly, more than 50% of the voting rights or where it exercises control. Entities in which 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 21 to the Consolidated Financial Statements, Citigroup also consolidates entities deemed to be variable interest entities when Citigroup is determined to be the primary beneficiary. Gains and losses on the disposition of branches, subsidiaries, affiliates, buildings and other investments are included in *Other revenue*.

Citibank

Citibank, N.A. (Citibank) is a commercial bank and indirect wholly owned subsidiary of Citigroup. Citibank's principal offerings include investment banking, commercial banking, cash management, trade finance and e-commerce; private banking products and services; consumer finance, credit cards, and mortgage lending; and retail banking products and services.

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, Citi 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 21 to the Consolidated Financial Statements for more detailed information.

Foreign Currency Translation

Assets and liabilities of Citi'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 stockholders' equity, net of any related hedge and tax effects, until realized upon sale or substantial liquidation of the foreign entity, at which point such amounts are reclassified into earnings. Revenues and expenses of Citi'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. Instruments used to hedge foreign currency exposures include foreign currency forward, option and swap contracts and, in certain instances, designated issues of non-U.S.-dollar debt. 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*.

Investment Securities

Investments include debt and equity securities. Debt securities include bonds, notes and redeemable preferred stocks, as well as certain loan-backed and structured securities that are subject to prepayment risk. Equity securities include common and nonredeemable preferred stock.

Debt Securities

- Debt securities classified as "held-to-maturity" (HTM) are securities that the Company has both the ability and the intent to hold until maturity and are carried at amortized cost. Interest income on such securities is included in *Interest revenue*.
- Debt securities classified as "available-for-sale" (AFS) are carried at fair value with changes in fair value reported in *Accumulated other comprehensive income (loss)*, a component of stockholders' equity, net of applicable income taxes and hedges. Interest income on such securities is included in *Interest revenue*.

Equity Securities

- Marketable equity securities are measured at fair value with changes in fair value recognized in earnings.
- Non-marketable equity securities are measured at fair value with changes in fair value recognized in earnings unless (i) the measurement alternative is elected or (ii) the investment represents Federal Reserve Bank and Federal Home Loan Bank stock or certain exchange seats that continue to be carried at cost. Non-marketable equity securities under the measurement alternative are carried at cost less impairment (if any), plus or minus changes resulting from observed prices for orderly transactions for the identical or a similar investment of the same issuer.
- Certain investments that would otherwise have been accounted for using the equity method are carried at fair value with changes in fair value recognized in earnings, since the Company elected to apply fair value accounting.

For investments in debt securities classified as held-to-maturity (HTM) or available-for-sale (AFS), the accrual of interest income is suspended for investments that are in default or for which it is likely that future interest payments will not be made as scheduled.

Debt securities not measured at fair value through earnings include securities held in HTM or AFS, and equity securities accounted for under the Measurement Alternative or equity method and Federal Reserve Bank, Federal Home Loan Bank stock and certain exchange seats. These securities are subject to evaluation for impairment as described in Note 15 to the Consolidated Financial Statements for HTM securities and in Note 13 for AFS, Measurement Alternative and equity method investments. Realized gains and losses on sales of investments are included in earnings, primarily on a specific identification basis.

The Company uses a number of valuation techniques for investments carried at fair value, which are described in Note 24 to the Consolidated Financial Statements.

Trading Account Assets and Liabilities

Trading account assets include debt and marketable equity securities, derivatives in a receivable position, residual interests in securitizations and physical commodities inventory. In addition, as described in Note 25 to the Consolidated Financial Statements, certain assets that Citigroup has elected to carry at fair value under the fair value option, such as loans and purchased guarantees, are also included in *Trading account assets*.

Trading account liabilities include securities sold, not yet purchased (short positions) and derivatives in a net payable position, as well as certain liabilities that Citigroup has elected to carry at fair value (as described in Note 25 to the Consolidated Financial Statements).

Other than physical commodities inventory, 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.

Physical commodities inventory is carried at the lower of cost or market with related losses reported in *Principal transactions*, except when included in a hedge relationship. Realized gains and losses on sales of commodities inventory are included in *Principal transactions*. Investments in unallocated precious metals accounts (gold, silver, platinum and palladium) are accounted for as hybrid instruments containing a debt host contract and an embedded non-financial derivative instrument indexed to the price of the relevant precious metal. The embedded derivative instrument and debt host contract are carried at fair value under the fair value option, as described in Note 25 to the Consolidated Financial Statements.

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 Balance Sheet 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 22 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 24 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 25 to the Consolidated Financial Statements, the Company has elected to apply fair value accounting to a number of securities borrowing and lending transactions. Fees received or paid for all securities borrowing and lending transactions are recorded in *Interest revenue* or *Interest expense* at the contractually specified rate.

Where the conditions of ASC 210-20-45-1, *Balance Sheet—Offsetting: Right of Setoff Conditions*, are met, securities borrowing and lending transactions are presented net on the Consolidated Balance Sheet.

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 24 to the Consolidated Financial Statements, the Company uses a discounted cash flow technique to determine the fair value of securities lending and borrowing transactions.

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 25 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 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 Balance Sheet.

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 24 to the Consolidated Financial Statements, the Company uses a discounted cash flow technique to determine the fair value of repo and reverse repo transactions.

Loans

Loans are reported at their outstanding principal balances net of any unearned income and unamortized deferred fees and costs, except for credit card receivable balances, which include accrued interest and fees. Loan origination fees and certain direct origination costs are generally deferred and recognized as adjustments to income over the lives of the related loans.

As described in Note 25 to the Consolidated Financial Statements, Citi has elected fair value accounting for certain loans. Such loans are carried at fair value with changes in fair value reported in earnings. Interest income on such loans is recorded in *Interest revenue* at the contractually specified rate.

Loans that are held-for-investment are classified as *Loans, net of unearned income* on the Consolidated Balance Sheet, and the related cash flows are included within the cash flows from investing activities category in the Consolidated Statement of Cash Flows on the line *Change in loans*. However, when the initial intent for holding a loan has changed from held-for-investment to held-for-sale (HFS), the loan is reclassified to HFS, but the related cash flows continue to be reported in cash flows from investing activities in the Consolidated Statement of Cash Flows on the line *Proceeds from sales and securitizations of loans*.

Consumer Loans

Consumer loans represent loans and leases managed primarily by the *Global Consumer Banking (GCB)* businesses and *Corporate/Other*.

Consumer Non-accrual and Re-aging Policies

As a general rule, interest accrual ceases for installment and real estate (both open- and closed-end) loans when payments are 90 days contractually past due. For credit cards and other unsecured revolving loans, however, Citi generally accrues interest until payments are 180 days past due. As a result of OCC guidance, home equity loans in regulated bank entities are classified as non-accrual if the related residential first mortgage is 90 days or more past due. Also as a result of OCC guidance, mortgage loans in regulated bank entities are classified as non-accrual within 60 days of notification that the borrower has filed for bankruptcy, with the exception of Federal Housing Administration (FHA)-insured loans.

Loans that have been modified to grant a concession to a borrower in financial difficulty may not be accruing interest at the time of the modification. The policy for returning such modified loans to accrual status varies by product and/or region. In most cases, a minimum number of payments (ranging from one to six) is required, while in other cases the loan is never returned to accrual status. For regulated bank entities, such modified loans are returned to accrual status if a credit evaluation at the time of, or subsequent to, the modification indicates the borrower is able to meet the restructured terms, and the borrower is current and has demonstrated a reasonable period of sustained payment performance (minimum six months of consecutive payments).

For U.S. consumer loans, generally one of the conditions to qualify for modification (other than for loan modifications made through the CARES Act relief provisions or banking agency guidance for pandemic-related issues) is that a minimum number of payments (typically ranging from one to three) must be made. Upon modification, the loan is re-aged to current status. However, re-aging practices for certain open-ended consumer loans, such as credit cards, are governed by Federal Financial Institutions Examination Council (FFIEC) guidelines. For open-ended consumer loans subject to FFIEC guidelines, one of the conditions for the loan to be re-aged to current status is that at least three consecutive minimum monthly payments, or the equivalent amount, must be received. In addition, under FFIEC guidelines, the number of times that such a loan can be re-aged is subject to limitations (generally once in 12 months and twice in five years). Furthermore, FHA and Department of Veterans Affairs (VA) loans may only be modified under those respective agencies' guidelines, and payments are not always required in order to re-age a modified loan to current.

Consumer Charge-Off Policies

Citi's charge-off policies follow the general guidelines below:

- Unsecured installment loans are charged off at 120 days contractually past due.
- Unsecured revolving loans and credit card loans are charged off at 180 days contractually past due.
- Loans secured with non-real estate collateral are written down to the estimated value of the collateral, less costs to sell, at 120 days contractually past due.
- Real estate-secured loans are written down to the estimated value of the property, less costs to sell, at 180 days contractually past due.
- Real estate-secured loans are charged off no later than 180 days contractually past due if a decision has been made not to foreclose on the loans.
- Unsecured loans in bankruptcy are charged off within 60 days of notification of filing by the bankruptcy court or in accordance with Citi's charge-off policy, whichever occurs earlier.
- Real estate-secured loans in bankruptcy, other than FHA-insured loans, are written down to the estimated value of the property, less costs to sell, within 60 days of notification that the borrower has filed for bankruptcy or in accordance with Citi's charge-off policy, whichever is earlier.

Corporate Loans

Corporate loans represent loans and leases managed by *Institutional Clients Group (ICG)*. Corporate loans are identified as impaired and placed on a cash (non-accrual) basis when it is determined, based on actual experience and a forward-looking assessment of the collectability of the loan in full, that the payment of interest or principal is doubtful or when interest or principal is 90 days past due, except when the loan is well collateralized and in the process of collection. Any interest accrued on impaired corporate loans and leases is reversed at 90 days past due and charged against current earnings, and interest is thereafter included in earnings only to the extent actually received in cash. When there is doubt regarding the ultimate collectability of principal, all cash receipts are thereafter applied to reduce the recorded investment in the loan.

Impaired corporate loans and leases are written down to the extent that principal is deemed to be uncollectible. Impaired collateral-dependent loans and leases, where repayment is expected to be provided solely by the sale of the underlying collateral and there are no other available and reliable sources of repayment, are written down to the lower of carrying value or collateral value. Cash-basis loans are returned to accrual status when all contractual principal and interest amounts are reasonably assured of repayment and there is a sustained period of repayment performance in accordance with the contractual terms.

Loans Held-for-Sale

Corporate and consumer loans that have been identified for sale are classified as loans HFS and included in *Other assets*. The practice of Citi's U.S. prime mortgage business has been to sell substantially all of its conforming loans. As such, U.S. prime mortgage conforming loans are classified as HFS and the fair value option is elected at origination, with changes in fair value recorded in *Other revenue*. With the exception of those loans for which the fair value option has been elected, HFS loans are accounted for at the lower of cost or market value, with any write-downs or subsequent recoveries charged to *Other revenue*. The related cash flows are classified in the Consolidated Statement of Cash Flows in the cash flows from operating activities category on the line *Change in loans held-for-sale*.

Allowances for Credit Losses (ACL)

Commencing January 1, 2020, Citi adopted Accounting Standards Update (ASC) 326, *Financial Instruments—Credit Losses*, using the methodologies described below. For information about Citi's accounting for loan losses prior to January 1, 2020, see "Superseded Accounting Principles" below.

The current expected credit losses (CECL) methodology is based on relevant information about past events, including historical experience, current conditions and reasonable and supportable (R&S) forecasts that affect the collectability of the reported financial asset balances. If the asset's life extends beyond the R&S forecast period, then historical experience is considered over the remaining life of the assets in the ACL. The resulting ACL is adjusted in each subsequent reporting period through *Provisions for credit losses* in the Consolidated Statement of Income to reflect changes in history, current conditions and forecasts as well as changes in asset positions and portfolios. ASC 326 defines the ACL as a valuation account that is deducted from the amortized cost of a financial asset to present the net amount that management expects to collect on the financial asset over its expected life. All financial assets carried at amortized cost are in the scope of ASC 326, while assets measured at fair value are excluded. See Note 13 to the Consolidated Financial Statements for a discussion of impairment on available-for-sale (AFS) securities.

Increases and decreases to the allowances are recorded in *Provisions for credit losses*. The CECL methodology utilizes a lifetime expected credit loss (ECL) measurement objective for the recognition of credit losses for held-for-investment (HFI) loans, held-to-maturity (HTM) debt securities, receivables and other financial assets measured at amortized cost at the time the financial asset is originated or acquired. Within the life 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.

Estimation of ECLs requires Citi to make assumptions regarding the likelihood and severity of credit loss events and their impact on expected cash flows, which drive the probability of default (PD), loss given default (LGD) and exposure at default (EAD) models and, where Citi discounts the ECL, using discounting techniques for certain products. Where the asset's life extends beyond the R&S forecast period, Citi considers historical experience over the remaining life of the assets in estimating the ACL.

Citi uses a multitude of variables in its macroeconomic forecast as part of its calculation of both the qualitative and quantitative components of the ACL, including both domestic and international variables for its global portfolios and exposures. Citi's forecasts of the U.S. unemployment rate and U.S. Real GDP growth rate represent the key macroeconomic variables that most significantly affect its estimate of its consumer and corporate ACLs. Under the quantitative base scenario, Citi's 4Q21 forecasts are for U.S. unemployment to continue to improve as the U.S. continues to move past the peak of the pandemic-related health and economic crisis.

The following are the main factors and interpretations that Citi considers when estimating the ACL under the CECL methodology:

- The most important reasons for the change in the ACL during 2021 were the ACL releases resulting from the recovery from the pandemic.
- CECL reserves are estimated over the contractual term of the financial asset, which is adjusted for expected prepayments. Expected extensions are generally not considered unless the option to extend the loan cannot be canceled unilaterally by Citi. Modifications are also not considered, unless Citi has a reasonable expectation that it will execute a troubled debt restructuring (TDR).

- Credit enhancements that are not freestanding (such as those that are included in the original terms of the contract or those executed in conjunction with the lending transaction) are considered loss mitigants for purposes of CECL reserve estimation.
- For unconditionally cancelable accounts such as credit cards, reserves are based on the expected life of the balance as of the evaluation date (assuming no further charges) and do not include any undrawn commitments that are unconditionally cancelable. Reserves are included for undrawn commitments for accounts that are not unconditionally cancelable (such as letters of credit and corporate loan commitments, home equity lines of credit (HELOCs), undrawn mortgage loan commitments and financial guarantees).
- CECL models are designed to be economically sensitive. They utilize the macroeconomic forecasts provided by Citi's economic forecasting team (EFT) that are approved by senior management. Analysis is performed and documented to determine the necessary qualitative management adjustment (QMA) to capture forward-looking macroeconomic expectations and model uncertainty.
- The portion of the forecast that reflects the EFT's reasonable and supportable (R&S) period indicates the maximum length of time its models can produce a R&S macroeconomic forecast, after which mean reversion reflecting historical loss experience is used for the remaining life of the loan to estimate expected credit losses. For the loss forecast, businesses consume the macroeconomic forecast as determined to be appropriate and justifiable.

Citi's ability to forecast credit losses over the reasonable and supportable (R&S) period is based on the ability to forecast economic activity over a reasonable and supportable time window. The R&S period reflects the overall ability to have a reasonable and supportable forecast of credit loss based on economic forecasts.

- The loss models consume all or a portion of the R&S economic forecast and then revert to historical loss experience. The R&S forecast period for consumer loans is 13 quarters and, in most cases, reverts to historically based loss experience either immediately or using a straight-line approach thereafter, while the R&S period for corporate loans is nine quarters with an additional straight-line reversion period of three quarters for ECL parameters.
- The ACL incorporates provisions for accrued interest on products that are not subject to a non-accrual and timely write-off policy (e.g., credit cards, etc.).
- The reserves for TDRs are calculated using the discounted cash flow method and considers appropriate macroeconomic forecast data for the exposure type. For TDR loans that are collateral dependent, the ACL is based on the fair value of the collateral.
- Citi uses the most recent available information to inform its macroeconomic forecasts, allowing sufficient time for analysis of the results and corresponding approvals. Key variables are reviewed for significant changes through year end and changes to portfolio positions are reflected in the ACL.
- Reserves are calculated at an appropriately granular level and on a pooled basis where financial assets share risk characteristics. At a minimum, reserves are calculated at a portfolio level (product and country). Where a financial asset does not share risk characteristics with any of the pools, it is evaluated for credit losses individually.

Quantitative and Qualitative Components of the ACL

The loss likelihood and severity models use both internal and external information and are sensitive to forecasts of different macroeconomic conditions. For the quantitative component, Citi uses a single forward-looking macroeconomic forecast, complemented by the qualitative component that reflects economic uncertainty due to a different possible more adverse scenario for estimating the ACL. Estimates of these ECLs are based upon (i) Citigroup's internal system of credit risk ratings; (ii) historical default and loss data, including comprehensive internal history and rating agency information regarding default rates and internal data on the severity of losses in the event of default; and (iii) a R&S forecast of future macroeconomic conditions. ECL is determined primarily by utilizing models for the borrowers' PD, LGD and EAD. Adjustments may be made to this data, including (i) statistically calculated estimates to cover the historical fluctuation of the default rates over the credit cycle, the historical variability of loss severity among defaulted loans and the degree to which there are large obligor concentrations in the global portfolio, and (ii) adjustments made for specifically known items, such as current environmental factors and credit trends.

Any adjustments needed to the modeled expected losses in the quantitative calculations are addressed through a qualitative adjustment. The qualitative adjustment considers, among other things: the uncertainty of forward-looking scenarios based on the likelihood and severity of a possible recession; the uncertainty of economic conditions related to an alternative downside scenario; certain portfolio characteristics and concentrations; collateral coverage; model limitations; idiosyncratic events; and other relevant criteria under banking supervisory guidance for loan loss reserves. The qualitative adjustment also reflects the estimated impact of the pandemic on the economic forecasts and the impact on credit loss estimates. The total ACL is composed of the quantitative and qualitative components.

Consumer Loans

For consumer loans, most portfolios including North America cards, mortgages and personal installment loans (PILs) are covered by the PD, LGD and EAD loss forecasting models. Some smaller international portfolios are covered by econometric models where the gross credit loss (GCL) rate is forecasted. The modeling of all retail products is performed by examining risk drivers for a given portfolio; these drivers relate to exposures with similar credit risk characteristics and consider past events, current conditions and R&S forecasts. Under the PD x LGD x EAD approach, GCLs and recoveries are captured on an undiscounted basis. Citi incorporates expected recoveries on loans into its reserve estimate, including expected recoveries on assets previously written off.

CECL defines the exposure's expected life as the remaining contractual maturity including any expected prepayments. Subsequent changes to the contractual terms that are the result of a re-underwriting are not included in the loan's expected CECL life.

Citi does not establish reserves for the uncollectible accrued interest on non-revolving consumer products, such as mortgages and installment loans, which are subject to a non-accrual and timely write-off policy. As such, only the principal balance is subject to the CECL reserve methodology and interest does not attract a further reserve. FAS 91-deferred origination costs and fees related to new account originations are amortized within a 12-month period, and an ACL is provided for components in the scope of the ASC.

Separate valuation allowances are determined for impaired smaller-balance homogeneous loans whose terms have been modified in a TDR. Long-term modification programs, and short-term (less than 12 months) modifications that provide concessions (such as interest rate reductions) to borrowers in financial difficulty, are reported as TDRs. In addition, loan modifications that involve a trial period are reported as TDRs at the start of the trial period. The ACL for TDRs is determined using a discounted cash flow (DCF) approach. When a DCF approach is used, the initial allowance for ECLs is calculated as the expected contractual cash flows discounted at the loan's original effective interest rate. DCF techniques are applied only for consumer loans classified as TDR loan exposures.

For credit cards, Citi uses the payment rate approach, which leverages payment rate curves, to determine the payments that should be applied to liquidate the end-of-period balance (CECL balance) in the estimation of EAD. The payment rate approach uses customer payment behavior (payment rate) to establish the portion of the CECL balance that will be paid each month. These payment rates are defined as the percentage of principal payments received in the respective month divided by the prior month's billed principal balance. The liquidation (CECL payment) amount for each forecast period is determined by multiplying the CECL balance by that period's forecasted payment rate. The cumulative sum of these payments less the CECL balance produces the balance liquidation curve. Citi does not apply a non-accrual policy to credit card receivables; rather, they are subject to full charge-off at 180 days past due. As such, the entire customer balance up until write-off, including accrued interest and fees, will be subject to the CECL reserve methodology.

Corporate Loans and HTM Securities

Citi records allowances for credit losses on all financial assets carried at amortized cost that are in the scope of CECL, including corporate loans classified as HFI and HTM debt securities. Discounting techniques are applied for corporate loans classified as HFI and HTM securities and non-accrual/TDR loan exposures. All cash flows are fully discounted to the reporting date. The ACL includes Citi's estimate of all credit losses expected to be incurred over the estimated full contractual life of the financial asset. The contractual life of the financial asset does not include expected extensions, renewals or modifications, except for instances where the Company reasonably expects to extend the tenor of the financial asset pursuant to a future TDR. Where Citi has an unconditional option to extend the contractual term, Citi does not consider the potential extension in determining the contractual term; however, where the borrower has the sole right to exercise the extension option without Citi's approval, Citi does consider the potential extension in determining the contractual term. The decrease in credit losses under CECL at the date of adoption on January 1, 2020, compared with the prior incurred loss methodology, was largely due to more precise contractual maturities that resulted in shorter remaining tenors, the incorporation of recoveries and use of more specific historical loss data based on an increase in portfolio segmentation across industries and geographies.

The Company primarily bases its ACL on models that assess the likelihood and severity of credit events and their impact on cash flows under R&S forecasted economic scenarios. Allowances consider the probability of the borrower's default, the loss the Company would incur upon default and the borrower's exposure at default. Such models discount the present value of all future cash flows, using the asset's effective interest rate (EIR). Citi applies a more simplified approach based on historical loss rates to certain exposures recorded in *Other assets* and certain loan exposures in the private bank.

The Company considers the risk of nonpayment to be zero for U.S. Treasuries and U.S. government-sponsored agency guaranteed mortgage-backed securities (MBS) and, as such, Citi does not have an ACL for these securities. For all other HTM debt securities, ECLs are estimated using PD models and discounting techniques, which incorporate assumptions regarding the likelihood and severity of credit losses. For structured securities, specific models use relevant assumptions for the underlying collateral type. A discounting approach is applied to HTM direct obligations of a single issuer, similar to that used for corporate HFI loans.

Other Financial Assets with Zero Expected Credit Losses

For certain financial assets, zero expected credit losses will be recognized where the expectation of nonpayment of the amortized cost basis is zero, based on there being no history of loss and the nature of the receivables.

Secured Financing Transactions

Most of Citi's reverse repurchase agreements, securities borrowing arrangements and margin loans require that the borrower continually adjust the amount of the collateral securing Citi'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 Citi does not expect to incur credit losses on such well-collateralized exposures. For certain margin loans presented in *Loans* on the Consolidated Balance Sheet, credit losses are estimated using the same approach as corporate loans.

Accrued Interest

CECL permits entities to make an accounting policy election not to reserve for interest, if the entity has a policy in place that will result in timely reversal or write-off of interest. However, when a non-accrual or timely charge-off policy is not applied, an ACL is recognized on accrued interest. For HTM debt securities, Citi established a non-accrual policy that results in timely write-off of accrued interest. For corporate loans, where a timely charge-off policy is used, Citi has elected to recognize an ACL on accrued interest receivable. The LGD models for corporate loans include an adjustment for estimated accrued interest.

Reasonably Expected TDRs

For corporate loans, the reasonable expectation of TDR concept requires that the contractual life over which ECLs are estimated be extended when a TDR that results in a tenor extension is reasonably expected. Reasonably expected TDRs are included in the life of the asset. A discounting technique or collateral-dependent practical expedient is used for non-accrual and TDR loan exposures that do not share risk characteristics with other loans and are individually assessed. Loans modified in accordance with the CARES Act and bank regulatory guidance are not classified as TDRs.

Purchased Credit-Deteriorated (PCD) Assets

ASC 326 requires entities that have acquired financial assets (such as loans and HTM securities) with an intent to hold, to evaluate whether those assets have experienced a more-than-insignificant deterioration in credit quality since origination. These assets are subject to specialized accounting at initial recognition under CECL. Subsequent measurement of PCD assets will remain consistent with other purchased or originated assets, i.e., non-PCD assets. CECL introduces the notion of PCD assets, which replaces purchased credit impaired (PCI) accounting under prior U.S. GAAP.

CECL requires the estimation of credit losses to be performed on a pool basis unless a PCD asset does not share characteristics with any pool. If certain PCD assets do not meet the conditions for aggregation, those PCD assets should be accounted for separately. This determination must be made at the date the PCD asset is purchased. In estimating ECLs from day 2 onward, pools can potentially be reassembled based upon similar risk characteristics. When PCD assets are pooled, Citi determines the amount of the initial ACL at the pool level. The amount of the initial ACL for a PCD asset represents the portion of the total discount at acquisition that relates to credit and is recognized as a "gross-up" of the purchase price to arrive at the PCD asset's (or pool's) amortized cost. Any difference between the unpaid principal balance and the amortized cost is considered to be related to non-credit factors and results in a discount or premium, which is amortized to interest income over the life of the individual asset (or pool). Direct expenses incurred related to the acquisition of PCD assets and other assets and liabilities in a business combination are expensed as incurred. Subsequent accounting for acquired PCD assets is the same as the accounting for originated assets; changes in the allowance are recorded in *Provisions for credit losses*.

Consumer

Citi does not purchase whole portfolios of PCD assets in its retail businesses. However, there may be a small portion of a purchased portfolio that is identified as PCD at the purchase date. Interest income recognition does not vary between PCD and non-PCD assets. A consumer financial asset is considered to be more-than-insignificantly credit deteriorated if it is more than 30 days past due at the purchase date.

Corporate

Citi generally classifies wholesale loans and debt securities classified as HTM or AFS as PCD when both of the following criteria are met: (i) the purchase price discount is at least 10% of par and (ii) the purchase date is more than 90 days after the origination or issuance date. Citi classifies HTM beneficial interests rated AA- and lower obtained at origination from certain securitization transactions as PCD when there is a significant difference (i.e., 10% or greater) between contractual cash flows, adjusted for prepayments, and expected cash flows at the date of recognition.

Reserve Estimates and Policies

Management provides reserves for an estimate of lifetime ECLs in the funded loan portfolio on the Consolidated Balance Sheet in the form of an ACL. These reserves are established in accordance with Citigroup's credit reserve policies, as approved by the Audit Committee of the Citigroup Board of Directors. Citi's Chief Risk Officer and Chief Financial Officer review the adequacy of the credit loss reserves each quarter with risk management and finance representatives for each applicable business area. Applicable business areas include those having classifiably managed portfolios, where internal credit risk ratings are assigned (primarily *ICG*) and delinquency managed portfolios (primarily *GCB*) or modified consumer loans, where concessions were granted due to the borrowers' financial difficulties. The aforementioned representatives for these business areas present recommended reserve balances for their funded and unfunded lending portfolios along with supporting quantitative and qualitative data discussed below:

Estimated Credit Losses in the Delinquency-Managed Portfolios for Performing Exposures

In addition, risk management and finance representatives who cover business areas with delinquency-managed portfolios containing smaller-balance homogeneous loans present their recommended reserve balances based on leading credit indicators, including loan delinquencies and changes in portfolio size as well as economic trends, including current and future housing prices, unemployment, length of time in foreclosure, costs to sell and GDP. This methodology is applied separately for each product within each geographic region in which these portfolios exist. This evaluation process is subject to numerous estimates and judgments. The frequency of default, risk ratings, loss recovery rates, size and diversity of individual large credits and ability of borrowers with foreign currency obligations to obtain the foreign currency necessary for orderly debt servicing, among other things, are all taken into account during this review. Changes in these estimates could have a direct impact on the credit costs in any period and could result in a change in the allowance.

Allowance for Unfunded Lending Commitments

Credit loss reserves are recognized on all off-balance sheet commitments that are not unconditionally cancelable. Corporate loan EAD models include an incremental usage factor (or credit conversion factor) to estimate ECLs on amounts undrawn at the reporting date. Off-balance sheet commitments include unfunded exposures, revolving facilities, securities underwriting commitments, letters of credit, HELOCs and financial guarantees (excluding performance guarantees). This reserve is classified on the Consolidated Balance Sheet in *Other liabilities*. Changes to the allowance for unfunded lending commitments are recorded in *Provision for credit losses on unfunded lending commitments*.

Mortgage Servicing Rights (MSRs)

Mortgage servicing rights (MSRs) are recognized as intangible assets when purchased or when the Company sells or securitizes loans acquired through purchase or origination and retains the right to service the loans. Mortgage servicing rights are accounted for at fair value, with changes in value recorded in *Other revenue* in the Company's Consolidated Statement of Income.

For additional information on the Company's MSRs, see Notes 16 and 21 to the Consolidated Financial Statements.

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 quantitative test requires a comparison of the fair value of the individual reporting unit to its carrying value, including goodwill. If the fair value of the reporting unit is in excess of the carrying value, the related goodwill is considered not impaired and no further analysis is necessary. If the carrying value of the reporting unit exceeds the fair value, an impairment loss is recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit.

Upon any business disposition, goodwill is allocated to, and derecognized with, the disposed business based on the ratio of the fair value of the disposed business to the fair value of the reporting unit.

Additional information on Citi's goodwill impairment testing can be found in Note 16 to the Consolidated Financial Statements.

Intangible Assets

Intangible assets—including core deposit intangibles, present value of future profits, purchased credit card relationships, credit card contract related intangibles, other customer relationships and other intangible assets, but excluding MSRs—are amortized over their estimated useful lives. Intangible assets that are deemed to have indefinite useful lives, primarily trade names, are not amortized and are subject to annual impairment tests. An impairment exists if the carrying value of the indefinite-lived intangible asset exceeds its fair value. For other intangible assets subject to amortization, an impairment is recognized if the carrying amount is not recoverable and exceeds the fair value of the intangible asset.

Other Assets and Other Liabilities

Other assets include, among other items, loans HFS, deferred tax assets, equity method investments, interest and fees receivable, lease right-of-use assets, premises and equipment (including purchased and developed software), repossessed assets and other receivables. *Other liabilities* include, among other items, accrued expenses and other payables, lease liabilities, deferred tax liabilities and reserves for legal claims, taxes, unfunded lending commitments, repositioning reserves and other payables.

Other Real Estate Owned and Repossessed Assets

Real estate or other assets received through foreclosure or repossession are generally reported in *Other assets*, net of a valuation allowance for selling costs and subsequent declines in fair value.

Securitizations

There are two key accounting determinations that must be made relating to securitizations. Citi 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 Citigroup 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 Citigroup are consolidated.

Interests in the securitized and sold assets may be retained in the form of subordinated or senior interest-only strips, subordinated tranches, spread accounts and servicing rights. In credit card securitizations, the Company retains a seller's interest in the credit card receivables transferred to the trusts, which is not in securitized form. In the case of consolidated securitization entities, including the credit card trusts, these retained interests are not reported on Citi's Consolidated Balance Sheet. The securitized loans remain on the balance sheet. Substantially all of the consumer loans sold or securitized through non-consolidated trusts by Citigroup are U.S. prime residential mortgage loans. Retained interests in non-consolidated mortgage securitization trusts are classified as *Trading account assets*, except for MSRs, which are included in *Intangible assets* on Citigroup's Consolidated Balance Sheet.

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, or the debt is in a fair value hedging relationship.

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 requirements are met, the assets are removed from the Company's Consolidated Balance Sheet. If the conditions for sale are not met, the transfer is considered to be a secured borrowing, the assets remain on the Consolidated Balance Sheet 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 21 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 by modifying the asset and liability mix, either directly or through the use of derivative financial products, including interest rate swaps, futures, forwards, purchased options and commodities, as well as foreign-exchange contracts. These end-user derivatives are carried at fair value in *Trading account assets* and *Trading account liabilities*.

See Note 22 to the Consolidated Financial Statements for a further discussion of the Company's hedging and derivative activities.

Instrument-Specific Credit Risk

Citi 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. For its most significant pension and postretirement benefit plans (Significant Plans), Citigroup measures and discloses plan obligations, plan assets and periodic plan expense quarterly, instead of annually. The effect of remeasuring the Significant Plan obligations and assets by updating plan actuarial assumptions on a quarterly basis is reflected in *Accumulated other comprehensive income (loss)* and periodic plan expense. All other plans (All Other Plans) are remeasured annually. See Note 8 to the Consolidated Financial Statements.

Stock-Based Compensation

The Company recognizes compensation expense related to 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 7 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 *Income tax expense*.

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

Commissions, Underwriting and Principal Transactions

Commissions and fees revenues are recognized in income when earned. Underwriting revenues are recognized in income typically at the closing of the transaction. *Principal transactions* revenues are recognized in income on a trade-date basis. See Note 5 to the Consolidated Financial Statements for a description of the Company's revenue recognition policies for *Commissions and fees*, and Note 6 to the Consolidated Financial Statements for details of *Principal transactions* revenue.

Earnings per Share

Earnings per share (EPS) is computed after deducting preferred stock dividends. The Company has granted restricted and deferred share awards with dividend rights that are considered to be participating securities, which are akin to a second class of common stock. Accordingly, a portion of Citigroup's earnings is allocated to those participating securities in the EPS calculation.

Basic earnings per share is computed by dividing income available to common stockholders after the allocation of dividends and undistributed earnings to the participating securities by the weighted average number of common shares outstanding for the period. *Diluted earnings per share* reflects the potential dilution that could occur if securities or other contracts to issue common stock were exercised. It is computed after giving consideration to the weighted average dilutive effect of the Company's stock options and warrants and convertible securities and after the allocation of earnings to the participating securities. Anti-dilutive options and warrants are disregarded in the EPS calculations.

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 24 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 other-than-temporary impairments, 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.

Cash Flows

Cash equivalents are defined as those amounts included in *Cash and due from banks* and predominately all of *Deposits with banks*. Cash flows from risk management activities are classified in the same category as the related assets and liabilities.

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.

ACCOUNTING CHANGES

Accounting for Deposit Insurance Expenses

During the fourth quarter of 2021, Citi changed its presentation of accounting for deposit insurance costs paid to the Federal Deposit Insurance Corporation (FDIC) and similar foreign regulators. These costs were previously presented within *Interest expense* and, as a result of this change, are now presented within *Other operating expenses*. Citi concluded that this presentation was preferable in Citi's circumstances, as it better reflected the nature of these deposit insurance costs in that these costs do not directly represent interest payments to creditors, but are similar in nature to other payments to regulatory agencies that are accounted for as operating expenses.

This change in income statement presentation represents a "change in accounting principle" under ASC Topic 250, *Accounting Changes and Error Corrections*, with retrospective application to the earliest period presented. This change in accounting principle resulted in a reclassification of $1,207 million, $1,203 million and $781 million of deposit insurance expenses from *Interest expense* to *Other operating expenses*, for the years ended December 31, 2021, 2020 and 2019, respectively. This change had no impact on Citi's net income or the total deposit insurance expense incurred by Citi.

Accounting for Financial Instruments—Credit Losses

Overview

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 CECL methodology, which requires earlier recognition of credit losses while also providing additional disclosure about credit risk. Citi adopted the ASU as of January 1, 2020, which, as discussed below, resulted in an increase in Citi's *Allowance for credit losses* and a decrease to opening *Retained earnings*, net of deferred income taxes, at January 1, 2020.

The CECL methodology utilizes a lifetime "expected credit loss" measurement objective for the recognition of credit losses for loans, HTM debt securities, receivables and other financial assets measured at amortized cost at the time the financial asset is originated or acquired. The ACL is adjusted each period for changes in lifetime expected 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. For available-for-sale debt securities where fair value is less than cost that Citi intends to hold or more-likely-than-not will not be required to sell, credit-related impairment, if any, is recognized through an ACL and adjusted each period for changes in credit risk.

January 1, 2020 CECL Transition (Day 1) Impact

The CECL methodology's impact on expected credit losses, among other things, reflects Citi's view of the current state of the economy, forecasted macroeconomic conditions and quality of Citi's portfolios. At the January 1, 2020 date of adoption, based on forecasts of macroeconomic conditions and exposures at that time, the aggregate impact to Citi was an approximate $4.1 billion, or an approximate 29%, pretax increase in the *Allowance for credit losses*, along with a $3.1 billion after-tax decrease in *Retained earnings* and a deferred tax asset increase of $1.0 billion. This transition impact reflects (i) a $4.9 billion build to the *Allowance for credit losses* for Citi's consumer exposures, primarily driven by the impact on credit card receivables of longer estimated tenors under the CECL lifetime expected credit loss methodology (loss coverage of approximately 23 months) compared to shorter estimated tenors under the probable loss methodology under prior U.S. GAAP (loss coverage of approximately 14 months), net of recoveries; and (ii) a release of $0.8 billion of reserves primarily related to Citi's corporate net loan loss exposures, largely due to more precise contractual maturities that result in shorter remaining tenors, incorporation of recoveries and use of more specific historical loss data based on an increase in portfolio segmentation across industries and geographies.

Under the CECL methodology, the *Allowance for credit losses consists* of quantitative and qualitative components. Citi's quantitative component of the *Allowance for credit losses* is model based and utilizes a single forward-looking macroeconomic forecast and discounts inputs for the corporate classifiably managed portfolios, complemented by the qualitative component described below, in estimating expected credit losses and discounts inputs for the corporate classifiably managed portfolios. Reasonable and supportable forecast periods vary by product. For example, Citi's consumer models use a 13-quarter reasonable and supportable period and revert to historical loss experience thereafter, while its corporate loan models use a nine-quarter reasonable and supportable period followed by a three-quarter graduated transition to historical loss experience.

The qualitative management adjustment component includes, among other things, management adjustments to reflect economic uncertainty based on the likelihood and severity of downside scenarios and certain portfolio characteristics not captured in the quantitative component, such as concentrations, collateral coverage, model limitations, idiosyncratic events and other factors as required by banking supervisory guidance for the ACL. The qualitative management adjustment component also includes management adjustments to reflect the uncertainty around the estimated impact of the pandemic on credit loss estimates.

Accounting for Variable Post-Charge-Off Third-Party Collection Costs

During the second quarter of 2020, Citi changed its accounting for variable post-charge-off third-party collection costs, whereby these costs were accounted for as an increase in expenses as incurred rather than a reduction in expected credit recoveries. Citi concluded that such a change in the method of accounting is preferable in Citi's circumstances as it better reflects the nature of these collection costs. That is, these costs do not represent

reduced payments from borrowers and are similar to Citi's other executory third-party vendor contracts that are accounted for as operating expenses as incurred. As a result of this change, Citi had a consumer ACL release of $426 million in the second quarter of 2020 for its U.S. cards portfolios and $122 million in the third quarter of 2020 for its international portfolios.

In the fourth quarter of 2020, Citi revised the second quarter of 2020 accounting conclusion from a "change in accounting estimate effected by a change in accounting principle" to a "change in accounting principle," which required an adjustment to opening retained earnings rather than net income, with retrospective application to the earliest period presented. Citi considered the guidance in ASC Topic 250, *Accounting Changes and Error Corrections;* ASC Topic 270, *Interim Reporting;* ASC Topic 250-S99-1, *Assessing Materiality;* and ASC Topic 250-S99-23, *Accounting Changes Not Retroactively Applied Due to Immateriality, Considering the Effects of Prior Year Misstatements when Quantifying Misstatements in Current Year Financial Statements.* Citi believes that the effects of the revisions were not material to any previously reported quarterly or annual period. As a result, Citi's full-year and quarterly results were revised to reflect this change as if it were effective as of January 1, 2020 (impacts to 2018 and 2019 were de minimis). Accordingly, Citi recorded an increase to its beginning retained earnings on January 1, 2020 of $330 million and a decrease of $443 million to its ACL. Further, Citi recorded a decrease of $18 million to its provisions for credit losses on loans in the first quarter of 2020 and an increase of $339 million and $122 million to its provisions for credit losses on loans in the second and third quarters of 2020, respectively. In addition, Citi's operating expenses increased by $49 million and $45 million, with a corresponding decrease in net credit losses, in the first and second quarters of 2020, respectively. As a result of these changes, Citi's net income for the year ended December 31, 2020 was $330 million lower, or $0.16 per share lower, than under the previous presentation as a change in accounting estimate effected by a change in accounting principle.

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 and permits a one-time transfer or sale of qualifying held-to-maturity securities. 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 Citi 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 Citi 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, Citi prospectively adopted the provisions of the ASU. At adoption, Citi recognized a lease liability and a corresponding ROU asset of approximately $4.4 billion on the Consolidated Balance Sheet related to its future lease payments as a lessee under operating leases. In addition, Citi recorded a $151 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 Notes 14 and 26 for additional details.

Citi has elected not to separate lease and non-lease components in its lease contracts and accounts for them as a single lease component. Citi 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 Citi 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. In addition, Citi applies the portfolio approach to account for certain equipment leases with nearly identical contractual terms.

Lessee Accounting

Operating lease ROU assets and lease liabilities are included in *Other assets* and *Other liabilities,* respectively, on the Consolidated Balance Sheet. Finance lease assets and liabilities are included in *Other assets* and *Long-term debt,* respectively, on the Consolidated Balance Sheet. Citi uses its 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 Citi is reasonably certain to exercise such options.

Lessor Accounting

Lessor accounting is largely unchanged under the ASU. Citi acts as a lessor for power, railcar, shipping and aircraft assets, where Citi has executed operating, direct financing and leveraged leasing arrangements. In a direct financing or a leveraged lease, Citi derecognizes the leased asset and records a lease financing receivable at lease commencement in *Loans*. Upon lease termination, Citi may obtain control of the asset, which is then recorded in *Other assets* on the Consolidated Balance Sheet and any remaining receivable for the asset's residual value is derecognized. Under the ASU, leveraged lease accounting is grandfathered and may continue to be applied until the leveraged lease is terminated or modified. Upon modification, the lease must be classified as an operating, direct finance or sales-type lease in accordance with the ASU.

Separately, as part of managing its real estate footprint, Citi subleases excess real estate space via operating lease arrangements.

FUTURE ACCOUNTING CHANGES

Long-Duration Insurance Contracts

In August 2018, the FASB issued ASU No. 2018-12, *Financial Services—Insurance: Targeted Improvements to the Accounting for Long-Duration Contracts*, which changes the existing recognition, measurement, presentation and disclosures for long-duration contracts issued by an insurance entity. Specifically, the guidance (i) improves the timeliness of recognizing changes in the liability for future policy benefits and prescribes the rate used to discount future cash flows for long-duration insurance contracts, (ii) simplifies and improves the accounting for certain market-based options or guarantees associated with deposit (or account balance) contracts, (iii) simplifies the amortization of deferred acquisition costs and (iv) introduces additional quantitative and qualitative disclosures. Citi has certain insurance subsidiaries, primarily in Mexico, that issue long-duration insurance contracts such as traditional life insurance policies and life-contingent annuity contracts that will be impacted by the requirements of ASU 2018-12.

The effective date of ASU 2018-12 was deferred for all insurance entities by ASU 2019-09, *Finance Services—Insurance: Effective Date* (issued in October 2019) and by ASU 2020-11, *Financial Services—Insurance: Effective Date and Early Application* (issued in November 2020). Citi plans to adopt the targeted improvements in ASU 2018-12 on January 1, 2023 and is currently evaluating the impact of the standard on its insurance subsidiaries. Citi does not expect a material impact to its results of operations as a result of adopting the standard.

SUPERSEDED ACCOUNTING PRINCIPLES

The following accounting principle was in effect for 2019 since ASU No. 2016-13, *Financial Instruments—Credit Losses (Topic 326)* became effective beginning on January 1, 2020.

Allowance for Credit Losses

The allowance for credit losses on loans represents management's best estimate of probable credit losses inherent in the portfolio, including probable losses related to large individually evaluated impaired loans and troubled debt restructurings. Additions to the allowance are made through the *Provision for credit losses* on loans. Loan losses are deducted from the allowance and subsequent recoveries are added. Assets received in exchange for loan claims in a restructuring are initially recorded at fair value, with any gain or loss reflected as a recovery or charge-off in the provision.

2. DISCONTINUED OPERATIONS, SIGNIFICANT DISPOSALS AND OTHER BUSINESS EXITS

Summary of Discontinued Operations

The Company's results from *Discontinued operations* consisted of residual activities related to the sales of the Egg Banking plc credit card business in 2011 and the German retail banking business in 2008. All *Discontinued operations* results are recorded within *Corporate/Other*.

The following table summarizes financial information for all *Discontinued operations*:

In millions of dollars	**2021**	2020	2019
Total revenues, net of interest expense	**$ —**	$ —	$ —
Income (loss) from discontinued operations	**$ 7**	$(20)	$(31)
Benefit for income taxes	**—**	—	(27)
Income (loss) from discontinued operations, net of taxes	**$ 7**	$(20)	$ (4)

Cash flows from *Discontinued operations* were not material for any period presented.

Significant Disposals

The following transactions were identified as significant disposals that are recorded within the *GCB* segment, including the assets and liabilities that were reclassified to held-for-sale within *Other assets* and *Other liabilities* on the Consolidated Balance Sheet and the *Income (loss) before taxes (benefits)* related to each business.

Agreement to Sell Australia Consumer Banking Business

On August 9, 2021, Citi entered into an agreement to sell its Australia consumer banking business, which is part of *Asia GCB*. The sale, which is subject to regulatory approvals and other closing conditions, is expected to close in the first half of 2022. As of December 31, 2021, Citi reported the business as held-for-sale, resulting in a pretax loss on sale of approximately $700 million recorded in *Other revenue* ($600 million after-tax), subject to closing adjustments. The loss on sale primarily reflected the impact of a pretax $625 million currency translation adjustment (CTA) loss (net of hedges) ($475 million after-tax) already reflected in the *Accumulated other comprehensive income (AOCI)* component of equity. Upon closing, the CTA-related balance will be removed from the *AOCI* component of equity, resulting in a neutral CTA impact to Citi's Common Equity Tier 1 Capital. Income before taxes, excluding the above referenced pretax loss on sale, for the Australia consumer banking business was as follows:

In millions of dollars	**2021**	2020	2019
Income before taxes	**$306**	$181	$302

The following assets and liabilities for the Australia consumer banking business were identified and reclassified to held-for-sale within *Other assets* and *Other liabilities* on the Consolidated Balance Sheet at December 31, 2021:

In millions of dollars	**December 31, 2021**
Assets	
Cash and deposits with banks	**$ 24**
Loans (net of allowance of $242 million at December 31, 2021)	**8,813**
Goodwill and intangible assets	**257**
Other assets	**81**
Total assets	**$9,175**
Liabilities	
Deposits	**$7,034**
Long-term debt	**479**
Other liabilities	**171**
Total liabilities	**$7,684**

Agreement to Sell Philippines Consumer Banking Business

On December 23, 2021, Citi entered into an agreement to sell its Philippines consumer banking business, which is part of *Asia GCB*. The sale, which is subject to regulatory approvals and other closing conditions, is expected to close in the second half of 2022 and result in an after-tax gain upon closing. Income before taxes for the period in which the individually significant component was classified as held-for-sale and for all prior periods was as follows:

In millions of dollars	**2021**	2020	2019
Income before taxes	**$145**	$42	$196

The following assets and liabilities for the Philippines consumer banking business were identified and reclassified to held-for-sale within *Other assets* and *Other liabilities* on the Consolidated Balance Sheet at December 31, 2021:

In millions of dollars	**December 31, 2021**
Assets	
Cash and deposits with banks	**$ 20**
Loans (net of allowance of $96 million at December 31, 2021)	**1,132**
Goodwill	**244**
Other assets, advances to/from subs	**588**
Other assets	**63**
Total assets	**$2,047**
Liabilities	
Deposits	**$1,373**
Other liabilities	**76**
Total liabilities	**$1,449**

Sale of Mexico Asset Management Business

On September 21, 2018, Citi completed the sale of its Mexico asset management business, which was part of *Latin America GCB*. As part of the sale, Citi derecognized total assets of $137 million and total liabilities of $41 million. The transaction resulted in a pretax gain on sale of approximately $250 million (approximately $150 million after-tax) recorded in *Other revenue* in 2018. Further, Citi and the buyer entered into a 10-year services framework agreement, with Citi acting as the distributor in exchange for an ongoing fee.

Income before taxes for the divested business, excluding the pretax gain on sale, was as follows:

In millions of dollars	**2021**	2020	2019
Income before taxes	**$—**	$—	$123

Other Business Exits

Wind-Down of Korea Consumer Banking Business

On October 25, 2021, Citi announced its decision to wind down and close its Korea consumer banking business, which is part of *Asia GCB*. In connection with the announcement, Citibank Korea Inc. (CKI) commenced a voluntary termination program (VERP). Due to the voluntary nature of this termination program, no liabilities for termination benefits are recorded until CKI makes formal offers to employees that are then irrevocably accepted by those employees. Related charges are recorded as *Compensation and benefits*.

For the year ended December 31, 2021, Citigroup recorded pretax charges of approximately $1.1 billion, composed of gross charges connected to the Korea voluntary termination program.

The following table summarizes the reserve charges related to the voluntary termination program and other initiatives reported in the *GCB* business segment:

In millions of dollars	**2021**
Employee termination costs (pretax)	
Original reserve charges	**$1,052**
Utilization	**(1)**
Foreign exchange	**3**
Balance at December 31, 2021	**$1,054**

The total estimated cash charges for the termination program are approximately $1.1 billion, of which most are already recognized in 2021. Citi expects to recognize the remaining charges throughout 2022, as voluntary retirements are phased in and irrevocably accepted in order to minimize business and operational impacts.

3. OPERATING SEGMENTS

As of December 31, 2021, Citigroup's primary activities were conducted through the following operating segments: *Institutional Clients Group (ICG)* and *Global Consumer Banking (GCB)*. Activities not assigned to the operating segments, as well as certain *North America* legacy consumer loan portfolios, discontinued operations and other legacy assets, were included in *Corporate/Other*.

The operating segments are determined based on how management allocates resources and measures financial performance to make business decisions, and are reflective of the types of customers served, and products and services provided.

ICG consisted of *Banking* and *Markets and securities services*, providing institutional, public sector and high-net-worth clients in 95 countries and jurisdictions with a broad range of banking and financial products and services.

GCB included a global, full-service consumer franchise delivering a wide array of banking, credit card, lending and investment services through a network of local branches, offices and electronic delivery systems and consisted of three GCB reporting units: *North America, Latin America* and *Asia* (including consumer banking activities in certain *EMEA* countries).

Corporate/Other included certain unallocated costs of global functions, other corporate expenses and net treasury results, offsets to certain line-item reclassifications and eliminations, and unallocated taxes.

Beginning in 2021, Citi changed its allocation for certain recurring expenses that are attributable to the operating segments from *Corporate/Other* to *GCB* and *ICG*. These expenses include incremental investments related to risks and controls, technology capabilities and information security initiatives, as well as some incremental spend related to the pandemic. The prior-period reportable operating segment results have been revised to conform to the current-year presentation for all periods to reflect this revised allocation methodology. Citi's consolidated results were unchanged for all periods presented as a result of the changes discussed above.

As part of its strategic refresh, Citi is making management reporting changes to align with its vision and strategy, including to assist Citi in decisions about resources and capital allocation and to assess business performance. In the first quarter of 2022, Citi plans to revise its financial reporting structure to align with these management reporting changes.

The accounting policies of these operating segments are the same as those disclosed in Note 1 to the Consolidated Financial Statements.

The following table presents certain information regarding the Company's continuing operations by operating segment and *Corporate/Other*:

	Revenues, net of interest expense[1]			Provision (benefits) for income taxes			Income (loss) from continuing operations[2]			Identifiable assets	
In millions of dollars, except identifiable assets in billions	**2021**	2020	2019	**2021**	2020	2019	**2021**	2020	2019	**2021**	2020
Institutional Clients Group	**$43,887**	$45,088	$39,824	**$4,524**	$3,303	$3,524	**$15,763**	$11,553	$12,776	**$1,762**	$1,730
Global Consumer Banking	**27,330**	30,342	33,221	**1,745**	143	1,708	**6,046**	663	5,579	**432**	434
Corporate/Other	**667**	71	2,022	**(818)**	(921)	(802)	**209**	(1,109)	1,116	**97**	96
Total	**$71,884**	$75,501	$75,067	**$5,451**	$2,525	$4,430	**$22,018**	$11,107	$19,471	**$2,291**	$2,260

(1) Includes total revenues, net of interest expense (excluding *Corporate/Other*), in *North America* of $34.2 billion, $36.8 billion and $34.1 billion; in *EMEA* of $13.1 billion, $13.0 billion and $12.2 billion; in *Latin America* of $9.2 billion, $9.4 billion and $10.6 billion; and in *Asia* of $14.7 billion, $16.2 billion and $16.2 billion in 2021, 2020 and 2019, respectively. These regional numbers exclude *Corporate/Other*, which largely reflects U.S. activities.

(2) Includes pretax provisions for credit losses and for benefits and claims in the *ICG* results of $(2.9) billion, $5.6 billion and $0.6 billion; in the *GCB* results of $(0.5) billion; $11.7 billion and $7.9 billion; and in the *Corporate/Other* results of $(0.4) billion, $0.2 billion and $(0.1) billion in 2021, 2020 and 2019, respectively.

4. INTEREST REVENUE AND EXPENSE

Interest revenue and *Interest expense* consisted of the following:

In millions of dollars	**2021**	2020	2019
Interest revenue			
Loan interest, including fees	**$35,440**	$40,185	$47,751
Deposits with banks	**577**	928	2,682
Securities borrowed and purchased under agreements to resell	**1,052**	2,283	6,872
Investments, including dividends	**7,388**	7,989	9,860
Trading account assets[2]	**5,365**	6,125	7,672
Other interest-bearing assets	**653**	579	1,673
Total interest revenue	**$50,475**	$58,089	$76,510
Interest expense			
Deposits[1]	**$ 2,896**	$ 5,334	$11,852
Securities loaned and sold under agreements to repurchase	**1,012**	2,077	6,263
Trading account liabilities[2]	**482**	628	1,308
Short-term borrowings and other interest-bearing liabilities	**121**	630	2,465
Long-term debt	**3,470**	4,669	6,494
Total interest expense	**$ 7,981**	$13,338	$28,382
Net interest income	**$42,494**	$44,751	$48,128
Provision for credit losses on loans	**(3,103)**	15,922	8,218
Net interest income after provision for credit losses on loans	**$45,597**	$28,829	$39,910

(1) During 2021, Citi reclassified deposit insurance expenses from *Interest expense to Other operating expenses* for all periods presented. Amounts reclassified for each year were $1,207 million for 2021, $1,203 million for 2020 and $781 million for 2019. For additional information, see Note 1 to the Consolidated Financial Statements.

(2) Interest expense on *Trading account liabilities* of *ICG* is reported as a reduction of *Interest revenue*. *Interest revenue* and *Interest expense* on cash collateral positions are reported in interest on *Trading account assets* and *Trading account liabilities*, respectively.

5. COMMISSIONS AND FEES; ADMINISTRATION AND OTHER FIDUCIARY FEES

Commissions and Fees

The primary components of *Commissions and fees* revenue are investment banking fees, brokerage commissions, credit card and bank card income and deposit-related fees.

Investment banking fees are substantially composed of underwriting and advisory revenues. 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 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, Citi 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 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*.

Brokerage commissions primarily include commissions and fees 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. 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 $639 million, $495 million and $485 million of revenue related to such variable consideration for the years ended December 31, 2021, 2020 and 2019, respectively. These amounts primarily relate to performance obligations satisfied in prior periods.

Credit card and bank card income is primarily composed of interchange fees, which are earned by card issuers based on purchase sales, and certain card fees, including annual fees. Costs related to customer reward programs and certain payments to partners (primarily based on program sales, profitability and customer acquisitions) are recorded as a reduction of credit card and bank card income. Citi's credit card programs have certain partner sharing agreements that vary by partner. These partner sharing agreements are subject to contractually based performance thresholds that, if met, would require Citi to make ongoing payments to the partner. The threshold is based on the profitability of a program and is generally calculated based on predefined program revenues less predefined program expenses. In most of Citi's partner sharing agreements, program expenses include net credit losses and, to the extent that the increase in net credit losses reduces Citi's liability for the partners' share for a given program year, it would generally result in lower payments to partners in total for that year and vice versa. Further, in some instances, other partner payments are based on program sales and new account acquisitions. Interchange revenues are recognized as earned on a daily basis when Citi's performance obligation to transmit funds to the payment networks has been satisfied. Annual card fees, net of origination costs, are deferred and amortized on a straight-line basis over a 12-month period. Costs related to card reward programs are recognized when the rewards are earned by the cardholders. Payments to partners are recognized when incurred.

Deposit-related fees consist of service charges on deposit accounts and fees earned from performing cash management activities and other deposit account services. Such fees are recognized in the period in which the related service is provided.

Transactional service fees primarily consist of fees charged for processing services such as cash management, global payments, clearing, international funds transfer and other trade services. Such fees are recognized as/when the associated service is satisfied, which normally occurs at the point in time the service is requested by the customer and provided by Citi.

Insurance distribution revenue consists of commissions earned from third-party insurance companies for marketing and selling insurance policies on behalf of such entities. Such commissions are recognized in *Commissions and fees* at the point in time the associated service is fulfilled, generally when the insurance policy is sold to the policyholder. Sales of certain insurance 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 policy is not recognized until the variable consideration becomes determinable. The Company recognized $260 million, $290 million and $322 million of revenue related to such variable consideration for the years ended December 31, 2021, 2020 and 2019, respectively. These amounts primarily relate to performance obligations satisfied in prior periods.

Insurance premiums consist of premium income from insurance policies that Citi has underwritten and sold to policyholders.

The following table presents *Commissions and fees* revenue:

	2021				2020				2019			
In millions of dollars	**ICG**	**GCB**	**Corp/Other**	**Total**	ICG	GCB	Corp/Other	Total	ICG	GCB	Corp/Other	Total
Investment banking	**$ 6,007**	**$ —**	**$—**	**$ 6,007**	$4,483	$ —	$—	$ 4,483	$3,767	$ —	$—	$ 3,767
Brokerage commissions	**2,080**	**1,156**	**—**	**3,236**	1,986	974	—	2,960	1,771	841	—	2,612
Credit card and bank card income												
Interchange fees	**817**	**9,004**	**—**	**9,821**	703	7,301	—	8,004	1,222	8,621	—	9,843
Card-related loan fees	**28**	**667**	**—**	**695**	23	626	—	649	60	718	—	778
Card rewards and partner payments[1]	**(405)**	**(9,830)**	**—**	**(10,235)**	(380)	(8,293)	—	(8,673)	(691)	(8,883)	—	(9,574)
Deposit-related fees[2]	**1,044**	**287**	**—**	**1,331**	958	376	—	1,334	1,048	470	—	1,518
Transactional service fees	**1,003**	**95**	**—**	**1,098**	886	88	—	974	824	123	—	947
Corporate finance[3]	**709**	**—**	**—**	**709**	457	—	—	457	616	—	—	616
Insurance distribution revenue	**11**	**462**	**—**	**473**	11	492	—	503	12	524	—	536
Insurance premiums	**—**	**94**	**—**	**94**	—	125	—	125	—	186	—	186
Loan servicing	**43**	**40**	**15**	**98**	82	30	25	137	78	55	21	154
Other	**104**	**237**	**4**	**345**	118	310	4	432	99	261	3	363
Total commissions and fees[4]	**$11,441**	**$ 2,212**	**$19**	**$ 13,672**	$9,327	$ 2,029	$29	$11,385	$8,806	$ 2,916	$24	$11,746

(1) Citi's consumer credit card programs have certain partner-sharing agreements that vary by partner. These agreements are subject to contractually based performance thresholds that, if met, would require Citi to make ongoing payments to the partner. The threshold is based on the profitability of a program and is generally calculated based on predefined program revenues less predefined program expenses. In most of Citi's partner-sharing agreements, program expenses include net credit losses and, to the extent that the increase in net credit losses reduces Citi's liability for the partners' share for a given program year, would generally result in lower payments to partners in total for that year and vice versa. Further, in some instances, other partner payments are based on program sales and new account acquisitions.

(2) Includes overdraft fees of $107 million, $100 million and $127 million for the years ended December 31, 2021, 2020 and 2019, respectively. Overdraft fees are accounted for under ASC 310.

(3) Consists primarily of fees earned from structuring and underwriting loan syndications or related financing activity. This activity is accounted for under ASC 310.

(4) *Commissions and fees* include $(8,516) million, $(7,160) million and $(7,695) million not accounted for under ASC 606, *Revenue from Contracts with Customers*, for the years ended December 31, 2021, 2020 and 2019, respectively. Amounts reported in *Commissions and fees* accounted for under other guidance primarily include card-related loan fees, card reward programs and certain partner payments, corporate finance fees, insurance premiums and loan servicing fees.

Administration and Other Fiduciary Fees

Administration and other fiduciary fees revenue is primarily composed of custody fees and fiduciary fees.

The custody product is composed of numerous services related to the administration, safekeeping and reporting for both U.S. and non-U.S. denominated securities. The services offered to clients include trade settlement, safekeeping, income collection, corporate action notification, record-keeping and reporting, tax reporting and cash management. These services are provided for a wide range of securities, including but not limited to equities, municipal and corporate bonds, mortgage- and asset-backed securities, money market instruments, U.S. Treasuries and agencies, derivative instruments, mutual funds, alternative investments and precious metals. Custody fees are recognized as or 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.

Fiduciary fees consist of trust services and investment management services. As an escrow agent, Citi receives, safe-keeps, services and manages clients' escrowed assets, such as cash, securities, property (including intellectual property), contracts or other collateral. Citi performs its escrow agent duties by safekeeping the assets 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 Citi'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 expenses.*

The following table presents *Administration and other fiduciary fees* revenue:

	2021				2020				2019			
In millions of dollars	**ICG**	**GCB**	**Corp/Other**	**Total**	ICG	GCB	Corp/Other	Total	ICG	GCB	Corp/Other	Total
Custody fees	**$1,872**	**$ 25**	**$ 1**	**$1,898**	$1,590	$ 29	$38	$1,657	$1,453	$ 16	$ 73	$1,542
Fiduciary fees	**798**	**659**	**7**	**1,464**	668	602	4	1,274	647	621	28	1,296
Guarantee fees	**569**	**8**	**4**	**581**	529	7	5	541	558	8	7	573
Total administration and other fiduciary fees[1]	**$3,239**	**$692**	**$12**	**$3,943**	$2,787	$638	$47	$3,472	$2,658	$645	$108	$3,411

(1) *Administration and other fiduciary fees* include $581 million, $541 million and $573 million for the years ended December 31, 2021, 2020 and 2019, respectively, that are not accounted for under ASC 606, *Revenue from Contracts with Customers.* These generally include guarantee fees.

6. PRINCIPAL TRANSACTIONS

Principal transactions revenue consists of realized and unrealized gains and losses from trading activities. Trading activities include revenues from fixed income, equities, credit and commodities products and foreign exchange transactions that are managed on a portfolio basis and characterized below based on the primary risk managed by each trading desk. Not included in the table below is the impact of net interest income related to trading activities, which is an integral part of trading activities' profitability. See Note 4 to the Consolidated Financial Statements for information about net interest income related to trading activities. Principal transactions include CVA (credit valuation adjustments) and FVA (funding valuation adjustments) on over-the-counter derivatives, and gains (losses) on certain economic hedges on loans in *ICG*. These adjustments are discussed further in Note 24 to the Consolidated Financial Statements.

In certain transactions, Citi incurs fees and presents these fees paid to third parties in operating expenses.

The following table presents *Principal transactions* revenue:

In millions of dollars	**2021**	2020	2019
Interest rate risks[1]	**$ 2,790**	$ 5,561	$3,831
Foreign exchange risks[2]	**3,886**	4,158	3,850
Equity risks[3]	**2,197**	1,343	808
Commodity and other risks[4]	**1,123**	1,133	546
Credit products and risks[5]	**158**	1,690	(143)
Total	**$10,154**	$13,885	$8,892

(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 foreign exchange spot, forward, option and swap contracts, as well as foreign currency translation (FX translation) gains and losses.
(3) Includes revenues from common, preferred and convertible preferred stock, convertible corporate debt, equity-linked notes and exchange-traded and OTC equity options and warrants.
(4) Primarily includes revenues from crude oil, refined oil products, natural gas and other commodities trades.
(5) Includes revenues from structured credit products.

7. INCENTIVE PLANS

Discretionary Annual Incentive Awards

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.

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 the form of deferred stock and deferred cash stock units. 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).

Subject to certain exceptions (principally, for retirement-eligible employees), continuous employment within Citigroup is required to vest in deferred annual incentive 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 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 the award type).

Unvested CAP, deferred cash stock units and deferred cash awards may be subject to performance conditions and are subject to one or more cancellation and clawback provisions that apply in certain circumstances, including gross misconduct.

Outstanding (Unvested) Stock Awards

A summary of the status of unvested stock awards granted as discretionary annual incentive or sign-on and replacement awards is presented below:

Unvested stock awards	Shares	Weighted-average grant date fair value per share
Unvested at December 31, 2020	28,226,292	$69.25
Granted[1]	17,535,978	62.10
Canceled	(1,453,029)	67.01
Vested[2]	(12,664,557)	67.17
Unvested at December 31, 2021	**31,644,684**	**$66.22**

(1) The weighted-average fair value of the shares granted during 2020 and 2019 was $76.68 and $61.78, respectively.
(2) The weighted-average fair value of the shares vesting during 2021 was approximately $64.23 per share on the vesting date, compared to $67.17 on the grant date.

Total unrecognized compensation cost related to unvested stock awards was $654 million at December 31, 2021. The cost is expected to be recognized over a weighted-average period of 1.6 years.

Performance Share Units

Executive officers were awarded performance share units (PSUs) every February from 2018 to 2021, for performance in the year prior to the award date based on two performance metrics. For PSUs awarded in 2018, 2019 and 2020, those metrics were return on tangible common equity and earnings per share. For PSUs awards in 2021, the metrics were return on tangible common equity and tangible book value per share. In each year, the metrics were equally weighted.

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 against performance goals and/or 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 Citi common stock. Dividend equivalents are 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. The value of the award, subject to the performance goals and taking into account any mandatory equitable adjustments as per the terms of the award agreement, is estimated using a simulation model that incorporates multiple valuation assumptions, including the probability of achieving the specified performance goals of each award. The risk-free rate used in the model is based on the applicable U.S. Treasury yield curve. Other significant assumptions for the awards are as follows:

Valuation assumptions	2021	2020	2019
Expected volatility	**40.88%**	22.26%	25.33%
Expected dividend yield	**4.21**	2.82	2.67

A summary of the performance share unit activity for 2021 is presented below:

Performance share units	Units	Weighted-average grant date fair value per unit
Outstanding, beginning of year	**1,333,803**	**$79.39**
Granted[1]	**418,098**	**78.55**
Canceled	**(344,131)**	**83.24**
Payments	**(133,497)**	**83.24**
Outstanding, end of year	**1,274,273**	**$77.67**

(1) The weighted-average grant date fair value per unit awarded in 2020 and 2019 was $83.45 and $72.83, respectively.

Transformation Program

In order to provide an incentive for select employees to effectively execute Citi's transformation program, in August 2021 the Personnel and Compensation (P&C) Committee of Citigroup's Board of Directors approved a program for them to earn additional compensation based on the achievement of Citi's transformation goals from August 2021 through December 2024 and satisfaction of other conditions. Eligible employees were notified of their award under the program in November 2021. Performance under the program is divided into three consecutive periods, ending on December 31, 2022, 2023 and 2024. The awards will be subject to variable accounting, pursuant to which the associated value of the award will fluctuate with the attainment of the performance conditions for each tranche and changes to Citigroup's stock price. The amortization commenced after the service inception date of November 2021. Payment for each period will be in cash, in a lump sum, with the third payment indexed to changes in the value of Citi's common stock from the service inception date through the payment date. Earnings generally will be based on collective performance with respect to Citi's transformation goals and will be evaluated and approved by the Committee on an annual basis.

Payments in the event of any category of employment termination or change in job title or employment status are subject to Citi's discretion. Cancellation and clawback is provided for in the event of misconduct and certain other circumstances. The program applies to senior leaders critical to helping deliver a successful transformation with the value varying based on individual compensation levels.

Stock Option Programs

All outstanding stock options are fully vested, with the related expense recognized as a charge to income in prior periods. The following table presents information with respect to stock option activity under Citigroup's stock option programs:

	2021			2020			2019		
	Options	**Weighted-average exercise price**	**Intrinsic value per share**	Options	Weighted-average exercise price	Intrinsic value per share	Options	Weighted-average exercise price	Intrinsic value per share
Outstanding, beginning of year	**166,650**	**$47.42**	**$14.24**	166,650	$47.42	$32.47	762,225	$101.84	$ —
Canceled	—	—	—	—	—	—	(11,365)	40.80	—
Expired	—	—	—	—	—	—	(449,916)	142.30	—
Exercised	**(166,650)**	**52.50**	**20.49**	—	—	—	(134,294)	39.00	23.50
Outstanding, end of year	**—**	**$ —**	**$ —**	166,650	$47.42	$14.24	166,650	$ 47.42	$32.47
Exercisable, end of year	**—**			166,650			166,650		

As of December 31, 2021, Citigroup no longer has any stock options outstanding.

Other Variable Incentive Compensation

Citigroup has 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 and mortgage loan officers.

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, Citi recognizes the expense each year equal to the grant date fair value of the awards that it estimates will be granted in the following year.

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 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 stock payment awards generally are entitled to vote the shares in their award during the sale-restriction 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.

All equity awards granted since April 19, 2005 have been made pursuant to stockholder-approved stock incentive plans that are administered by the P&C Committee, which is composed entirely of independent non-employee directors.

At December 31, 2021, approximately 39.0 million shares of Citigroup common stock were authorized and available for grant under Citigroup's 2019 Stock Incentive Plan, the only plan from which equity awards are currently granted.

The 2019 Stock Incentive Plan and predecessor plans permit the use of treasury stock or newly issued shares in connection with awards granted under the plans. Treasury shares were used to settle vestings from 2018 to 2021, and for the first quarter of 2022, except where local laws favor newly issued shares. The use of treasury stock or newly issued shares to settle stock awards does not affect the compensation expense recorded in the Consolidated Statement of Income for equity awards.

Incentive Compensation Cost

The following table shows components of compensation expense, relating to certain of the incentive compensation programs described above:

In millions of dollars	**2021**	2020	2019
Charges for estimated awards to retirement-eligible colleagues	**$ 807**	$ 748	$ 683
Amortization of deferred cash awards, deferred cash stock units and performance stock units	**384**	201	355
Immediately vested stock award expense[1]	**99**	95	82
Amortization of restricted and deferred stock awards[2]	**395**	420	404
Other variable incentive compensation	**435**	627	666
Total	**$2,120**	$2,091	$2,190

(1) Represents expense for immediately vested stock awards that generally were stock payments in lieu of cash compensation. The expense is generally accrued as cash incentive compensation in the year prior to grant.

(2) All periods include amortization expense for all unvested awards to non-retirement-eligible colleagues.

8. RETIREMENT BENEFITS

Pension and Postretirement Plans

The Company has several non-contributory defined benefit pension plans covering certain U.S. employees and has various defined benefit pension and termination indemnity plans covering employees outside the U.S.

The 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 offers postretirement health care and life insurance benefits to certain eligible U.S. retired employees, as well as to certain eligible employees outside the U.S.

The Company also sponsors 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.

The plan obligations, plan assets and periodic plan expense for the Company's most significant pension and postretirement benefit plans (Significant Plans) are measured and disclosed quarterly, instead of annually. The Significant Plans captured approximately 90% of the Company's global pension and postretirement plan obligations as of December 31, 2021. All other plans (All Other Plans) are measured annually with a December 31 measurement date.

Net (Benefit) Expense

The following table summarizes the components of net (benefit) expense recognized in the Consolidated Statement of Income for the Company's pension and postretirement plans for Significant Plans and All Other Plans:

	Pension plans						Postretirement benefit plans					
	U.S. plans			Non-U.S. plans			U.S. plans			Non-U.S. plans		
In millions of dollars	**2021**	2020	2019	**2021**	2020	2019	**2021**	2020	2019	**2021**	2020	2019
Benefits earned during the year	**$ —**	$ —	$ 1	**$ 149**	$ 147	$ 146	**$ —**	$ —	$ —	**$ 6**	$ 7	$ 8
Interest cost on benefit obligation	**351**	378	469	**268**	246	287	**13**	17	24	**96**	93	104
Expected return on assets	**(683)**	(824)	(821)	**(253)**	(245)	(281)	**(13)**	(17)	(18)	**(84)**	(77)	(84)
Amortization of unrecognized:												
Prior service cost (benefit)	**2**	2	2	**(6)**	5	(4)	**(9)**	(2)	—	**(9)**	(9)	(10)
Net actuarial loss (gain)	**228**	233	200	**62**	70	61	**(3)**	—	—	**13**	20	23
Curtailment loss (gain)[1]	**—**	—	1	**1**	(8)	(6)	**—**	—	—	**—**	—	—
Settlement loss (gain)[1]	**—**	—	—	**10**	(1)	6	**—**	—	—	**—**	—	—
Total net (benefit) expense	**$(102)**	$(211)	$(148)	**$ 231**	$ 214	$ 209	**$ (12)**	$ (2)	$ 6	**$ 22**	$ 34	$ 41

(1) Losses (gains) due to curtailment and settlement relate to repositioning and divestiture activities.

Contributions

The Company's funding practice for U.S. and non-U.S. pension and postretirement plans is generally to fund to minimum funding requirements in accordance with applicable local laws and regulations. The Company may increase its contributions above the minimum required contribution, if appropriate. In addition, management has the ability to change its funding practices. For the U.S. pension plans, there were no required minimum cash contributions for 2021 or 2020.

The following table summarizes the Company's actual contributions for the years ended December 31, 2021 and 2020, as well as expected Company contributions for 2022. Expected contributions are subject to change, since contribution decisions are affected by various factors, such as market performance, tax considerations and regulatory requirements.

	Pension plans[1]						Postretirement benefit plans[1]					
	U.S. plans[2]			Non-U.S. plans			U.S. plans			Non-U.S. plans		
In millions of dollars	2022	**2021**	2020	2022	**2021**	2020	2022	**2021**	2020	2022	**2021**	2020
Contributions made by the Company	$—	**$—**	$ —	$ 74	**$104**	$115	$—	**$ —**	$ —	$3	**$3**	$ 4
Benefits paid directly by (reimbursements to) the Company[3]	57	**56**	56	413	**51**	43	5	**22**	(15)	6	**5**	5

(1) Amounts reported for 2022 are expected amounts.
(2) The U.S. pension plans include benefits paid directly by the Company for the nonqualified pension plans.
(3) Estimated 2022 benefit payments have increased due to the wind-down of Citi's consumer banking business in Korea, as it is expected that employees who elected the VERP plan will be withdrawing their pension plan assets. See Note 2 to the Consolidated Financial Statements for additional information.

Funded Status and *Accumulated Other Comprehensive Income (AOCI)*

The following table summarizes the funded status and amounts recognized on the Consolidated Balance Sheet for the Company's pension and postretirement plans:

	Pension plans				Postretirement benefit plans			
	U.S. plans		Non-U.S. plans		U.S. plans		Non-U.S. plans	
In millions of dollars	**2021**	2020	**2021**	2020	**2021**	2020	**2021**	2020
Change in projected benefit obligation								
Projected benefit obligation at beginning of year	**$13,815**	$13,453	**$ 8,629**	$ 8,105	**$ 559**	$ 692	**$1,390**	$1,384
Benefits earned during the year	**—**	—	**149**	147	**—**	—	**6**	7
Interest cost on benefit obligation	**351**	378	**268**	246	**13**	17	**96**	93
Plan amendments[1]	**—**	—	**6**	(4)	**—**	(104)	**—**	—
Actuarial (gain) loss[2]	**(447)**	950	**(344)**	518	**(28)**	(18)	**(110)**	30
Benefits paid, net of participants' contributions and government subsidy[3]	**(953)**	(966)	**(345)**	(298)	**(43)**	(28)	**(78)**	(64)
Settlement gain[4]	**—**	—	**(124)**	(110)	**—**	—	**—**	—
Curtailment gain[4]	**—**	—	**(30)**	(14)	**—**	—	**—**	—
Foreign exchange impact and other	**—**	—	**(208)**	39	**—**	—	**(135)**	(60)
Projected benefit obligation at year end	**$12,766**	$13,815	**$ 8,001**	$ 8,629	**$ 501**	$ 559	**$1,169**	$1,390
Change in plan assets								
Plan assets at fair value at beginning of year	**$13,309**	$12,717	**$ 7,831**	$ 7,556	**$ 331**	$ 345	**$1,146**	$1,127
Actual return on assets[2]	**565**	1,502	**217**	584	**9**	29	**97**	129
Company contributions (reimbursements)	**56**	56	**155**	158	**22**	(15)	**8**	9
Benefits paid, net of participants' contributions and government subsidy[3]	**(953)**	(966)	**(345)**	(298)	**(43)**	(28)	**(78)**	(64)
Settlement gain[4]	**—**	—	**(124)**	(110)	**—**	—	**—**	—
Foreign exchange impact and other	**—**	—	**(120)**	(59)	**—**	—	**(130)**	(55)
Plan assets at fair value at year end	**$12,977**	$13,309	**$ 7,614**	$ 7,831	**$ 319**	$ 331	**$1,043**	$1,146
Funded status of the plans								
Qualified plans[5]	**$ 894**	$ 230	**$ (387)**	$ (798)	**$(182)**	$(228)	**$ (126)**	$ (244)
Nonqualified plans[6]	**(683)**	(736)	**—**	—	**—**	—	**—**	—
Funded status of the plans at year end	**$ 211**	$ (506)	**$ (387)**	$ (798)	**$(182)**	$(228)	**$ (126)**	$ (244)
Net amount recognized								
Qualified plans								
Benefit asset	**$ 894**	$ 230	**$ 963**	$ 741	**$ —**	$ —	**$ 165**	$ 25
Benefit liability	**—**	—	**(1,350)**	(1,539)	**(182)**	(228)	**(291)**	(269)
Qualified plans	**$ 894**	$ 230	**$ (387)**	$ (798)	**$(182)**	$(228)	**$ (126)**	$ (244)
Nonqualified plans	**(683)**	(736)	**—**	—	**—**	—	**—**	—
Net amount recognized on the balance sheet	**$ 211**	$ (506)	**$ (387)**	$ (798)	**$(182)**	$(228)	**$ (126)**	$ (244)
Amounts recognized in *AOCI*[7]								
Net transition obligation	**$ —**	$ —	**$ —**	$ —	**$ —**	$ —	**$ —**	$ —
Prior service (cost) benefit	**(8)**	(10)	**5**	12	**92**	101	**47**	63
Net actuarial (loss) gain	**(6,575)**	(7,132)	**(1,400)**	(1,863)	**77**	56	**(182)**	(348)
Net amount recognized in equity (pretax)	**$ (6,583)**	$ (7,142)	**$(1,395)**	$(1,851)	**$ 169**	$ 157	**$ (135)**	$ (285)
Accumulated benefit obligation at year end	**$12,765**	$13,812	**$ 7,559**	$ 8,116	**$ 501**	$ 559	**$1,169**	$1,390

(1) The U.S. postretirement benefit plan was amended in 2020 to move grandfathered Medicare-eligible retirees to the Medicare individual marketplace.
(2) During 2021, the actuarial gain was primarily due to the increase in global discount rates partially offset by lower than expected asset returns. During 2020, the actuarial loss was primarily due to the decline in global discount rates partially offset by favorable asset returns.
(3) U.S. postretirement benefit plans were net of Employer Group Waiver Plan subsidies of $11 million and $40 million in 2021 and 2020, respectively.
(4) Curtailment and settlement gains relate to repositioning and divestiture activities.
(5) The U.S. qualified pension plan was fully funded under specified Employee Retirement Income Security Act (ERISA) funding rules as of January 1, 2022 and no minimum required funding is expected for 2022.
(6) The nonqualified plans of the Company are unfunded.
(7) The framework for the Company's pension oversight process includes monitoring of potential settlement charges for all plans. Settlement accounting is triggered when either the sum of all settlements (including lump sum payments) for the year is greater than service plus interest costs or if more than 10% of the plan's projected benefit obligation will be settled. Because some of Citi's significant plans are frozen and have no material service cost, settlement accounting may apply in the future.

The following table shows the change in *AOCI* related to the Company's pension, postretirement and post employment plans:

In millions of dollars	2021	2020	2019
Beginning of year balance, net of tax[1][2]	**$(6,864)**	$(6,809)	$(6,257)
Actuarial assumptions changes and plan experience	**963**	(1,464)	(2,300)
Net asset gain (loss) due to difference between actual and expected returns	**(148)**	1,076	1,427
Net amortization	**280**	318	274
Prior service credit (cost)	**(7)**	108	(7)
Curtailment/settlement gain[3]	**11**	(8)	1
Foreign exchange impact and other	**153**	(108)	(66)
Change in deferred taxes, net	**(240)**	23	119
Change, net of tax	**$ 1,012**	$ (55)	$ (552)
End of year balance, net of tax[1][2]	**$(5,852)**	$(6,864)	$(6,809)

(1) See Note 19 to the Consolidated Financial Statements for further discussion of net AOCI balance.
(2) Includes net-of-tax amounts for certain profit-sharing plans outside the U.S.
(3) Curtailment and settlement relate to repositioning and divestiture activities.

At December 31, 2021 and 2020, the aggregate projected benefit obligation (PBO), the aggregate accumulated benefit obligation (ABO) and the aggregate fair value of plan assets are presented for all defined benefit pension plans with a PBO in excess of plan assets and for all defined benefit pension plans with an ABO in excess of plan assets as follows:

	PBO exceeds fair value of plan assets				**ABO exceeds fair value of plan assets**			
	U.S. plans[1]		**Non-U.S. plans**		**U.S. plans[1]**		**Non-U.S. plans**	
In millions of dollars	**2021**	2020	**2021**	2020	**2021**	2020	**2021**	2020
Projected benefit obligation	**$683**	$736	**$3,966**	$4,849	**$683**	$736	**$3,809**	$4,723
Accumulated benefit obligation	**682**	734	**3,574**	4,400	**682**	734	**3,477**	4,329
Fair value of plan assets	**—**	—	**2,616**	3,310	**—**	—	**2,486**	3,212

(1) As of December 31, 2021 and 2020, only the nonqualified plans' PBO and ABO exceeded plan assets.

Plan Assumptions

The Company utilizes a number of assumptions to determine plan obligations and expenses. Changes in one or a combination of these assumptions will have an impact on the Company's pension and postretirement PBO, funded status and (benefit) expense. Changes in the plans' funded status resulting from changes in the PBO and fair value of plan assets will have a corresponding impact on *Accumulated other comprehensive income (loss)*.

The actuarial assumptions at the respective years ended December 31 in the table below are used to measure the year-end PBO and the net periodic (benefit) expense for the subsequent year (period). Since Citi's Significant Plans are measured on a quarterly basis, the year-end rates for those plans are used to calculate the net periodic (benefit) expense for the subsequent year's first quarter.

As a result of the quarterly measurement process, the net periodic (benefit) expense for the Significant Plans is calculated at each respective quarter end based on the preceding quarter-end rates (as shown below for the U.S. and non-U.S. pension and postretirement plans). The actuarial assumptions for All Other Plans are measured annually.

Certain assumptions used in determining pension and postretirement benefit obligations and net benefit expense for the Company's plans are shown in the following table:

At year end	**2021**	2020
Discount rate		
U.S. plans		
Qualified pension	**2.80%**	2.45%
Nonqualified pension	**2.80**	2.35
Postretirement	**2.75**	2.20
Non-U.S. pension plans		
Range[1]	**-0.10 to 11.95**	-0.25 to 11.15
Weighted average	**3.96**	3.14
Non-U.S. postretirement plans		
Range	**1.05 to 10.00**	0.80 to 8.55
Weighted average	**8.28**	7.42
Future compensation increase rate[2]		
Non-U.S. pension plans		
Range	**1.30 to 11.25**	1.20 to 11.25
Weighted average	**3.10**	3.10
Expected return on assets		
U.S. plans		
Qualified pension	**5.00**	5.80
Postretirement[3]	**5.00/1.50**	5.80/1.50
Non-U.S. pension plans		
Range	**0.00 to 11.50**	0.00 to 11.50
Weighted average	**3.69**	3.39
Non-U.S. postretirement plans		
Range	**6.00 to 8.00**	5.95 to 8.00
Weighted average	**7.99**	7.99

(1) Due to historically low global interest rates, there were negative discount rates for plans with relatively short duration in certain major markets, such as the Eurozone and Switzerland.
(2) Not material for U.S. plans.
(3) For the years ended 2021 and 2020, the expected return on assets for the VEBA Trust was 1.50%.

During the year	**2021**	2020	2019
Discount rate			
U.S. plans			
Qualified pension	**2.45%/3.10%/ 2.75%/2.80%**	3.25%/3.20%/ 2.60%/2.55%	4.25%/3.85%/ 3.45%/3.10%
Nonqualified pension	**2.35/3.00/ 2.70/2.75**	3.25/3.25/ 2.55/2.50	4.25/3.90/ 3.50/3.10
Postretirement	**2.20/2.85/ 2.60/2.65**	3.15/3.20/ 2.45/2.35	4.20/3.80/ 3.35/3.00
Non-U.S. pension plans[1]			
Range[2]	**-0.25 to 11.15**	-0.10 to 11.30	-0.05 to 12.00
Weighted average	**3.14**	3.65	4.47
Non-U.S. postretirement plans[1]			
Range	**0.80 to 9.80**	0.90 to 9.75	1.75 to 10.75
Weighted average	**7.42**	7.76	9.05
Future compensation increase rate[3]			
Non-U.S. pension plans[1]			
Range	**1.20 to 11.25**	1.50 to 11.50	1.30 to 13.67
Weighted average	**3.10**	3.17	3.16
Expected return on assets			
U.S. plans			
Qualified pension[4]	**5.80/5.60/ 5.60/5.00**	6.70	6.70
Postretirement[4]	**5.80/1.50**	6.70/3.00	6.70/3.00
Non-U.S. pension plans[1]			
Range	**0.00 to 11.50**	0.00 to 11.50	1.00 to 11.50
Weighted average	**3.39**	3.95	4.30
Non-U.S. postretirement plans[1]			
Range	**5.95 to 8.00**	6.20 to 8.00	8.00 to 9.20
Weighted average	**7.99**	7.99	8.01

(1) Reflects rates utilized to determine the quarterly expense for Significant non-U.S. pension and postretirement plans.
(2) Due to historically low global interest rates, there were negative discount rates for plans with relatively short duration in certain major markets, such as the Eurozone and Switzerland.
(3) Not material for U.S. plans.
(4) The expected return on assets for the U.S. pension and postretirement plans was lowered from 5.80% to 5.60% effective April 1, 2021 and to 5.00% effective October 1, 2021 to reflect the change in target asset allocation.

Discount Rate

The discount rates for the U.S. pension and postretirement plans were selected by reference to a Citigroup-specific analysis using each plan's specific cash flows and compared with high-quality corporate bond indices for reasonableness. The discount rates for the non-U.S. pension and postretirement plans are selected by reference to high-quality corporate bond rates in countries that have developed corporate bond markets. However, where developed corporate bond markets do not exist, the discount rates are selected by reference to local government bond rates with a premium added to reflect the additional risk for corporate bonds in certain countries. Effective December 31, 2019, the established rounding convention is to the nearest 5 bps for all countries.

Expected Return on Assets

The Company determines its assumptions for the expected return on assets for its U.S. pension and postretirement plans using a "building block" approach, which focuses on ranges of anticipated rates of return for each asset class. A weighted average range of nominal rates is then determined based on target allocations to each asset class. Market performance over a number of earlier years is evaluated covering a wide range of economic conditions to determine whether there are sound reasons for projecting any past trends.

The Company considers the expected return on assets to be a long-term assessment of return expectations and does not anticipate changing this assumption unless there are significant changes in investment strategy or economic conditions. This contrasts with the selection of the discount rate and certain other assumptions, which are reconsidered annually (or quarterly for the Significant Plans) in accordance with GAAP.

The expected return on assets reflects the expected annual appreciation of the plan assets and reduces the Company's annual pension expense. The expected return on assets is deducted from the sum of service cost, interest cost and other components of pension expense to arrive at the net pension (benefit) expense.

The following table shows the expected return on assets used in determining the Company's pension expense compared to the actual return on assets during 2021, 2020 and 2019 for the U.S. pension and postretirement plans:

U.S. plans *(During the year)*	**2021**	2020	2019
Expected return on assets			
U.S. pension and postretirement trust	**5.80%/5.60%/ 5.60%/5.00%**	6.70%	6.70%
VEBA trust	**1.50**	3.00	3.00
Actual return on assets[1]			
U.S. pension and postretirement trust	**5.14**	12.84	15.20
VEBA trust	**1.52**	2.11	1.91 to 2.76

(1) Actual return on assets is presented net of fees.

Sensitivities of Certain Key Assumptions

The following tables summarize the effect on pension expense:

	Discount rate		
	One-percentage-point increase		
In millions of dollars	**2021**	2020	2019
U.S. plans	**$ 35**	$ 34	$ 28
Non-U.S. plans	**(4)**	(16)	(19)

	One-percentage-point decrease		
In millions of dollars	**2021**	2020	2019
U.S. plans	**$(49)**	$(52)	$(44)
Non-U.S. plans	**25**	25	32

The U.S. Qualified Pension Plan was frozen in 2008, and as a result, most service costs have been eliminated. The pension expense for the U.S. Qualified Pension Plan is therefore driven primarily by interest cost rather than by service cost. An increase in the discount rate generally increases pension expense.

For Non-U.S. Pension Plans that are not frozen (in countries such as Mexico, the U.K. and South Korea), there is more service cost. The pension expense for the Non-U.S. Plans is driven by both service cost and interest cost. An increase in the discount rate generally decreases pension expense due to the greater impact on service cost compared to interest cost.

Since the U.S. Qualified Pension Plan was frozen, most of the prospective service cost has been eliminated and the gain/loss amortization period was changed to the life expectancy for inactive participants. As a result, pension expense for the U.S. Qualified Pension Plan is driven more by interest costs than service costs, and an increase in the discount rate would increase pension expense, while a decrease in the discount rate would decrease pension expense.

The following tables summarize the effect on pension expense:

	Expected return on assets		
	One-percentage-point increase		
In millions of dollars	**2021**	2020	2019
U.S. plans	**$(124)**	$(123)	$(123)
Non-U.S. plans	**(70)**	(66)	(64)

	One-percentage-point decrease		
In millions of dollars	**2021**	2020	2019
U.S. plans	**$124**	$123	$123
Non-U.S. plans	**70**	66	64

Health Care Cost Trend Rate

Assumed health care cost trend rates were as follows:

	2021	2020
Health care cost increase rate for U.S. plans		
Following year	**6.25%**	6.50%
Ultimate rate to which cost increase is assumed to decline	**5.00**	5.00
Year in which the ultimate rate is reached	**2027**	2027
Health care cost increase rate for non-U.S. plans (weighted average)		
Following year	**6.92%**	6.85%
Ultimate rate to which cost increase is assumed to decline	**6.92**	6.85
Year in which the ultimate rate is reached	**2022**	2021

Interest Crediting Rate

The Company has cash balance plans and other plans with promised interest crediting rates. For these plans, the interest crediting rates are set in line with plan rules or country legislation and do not change with market conditions.

	Weighted average interest crediting rate		
At year end	**2021**	2020	2019
U.S. plans	**1.80%**	1.45%	2.25%
Non-U.S. plans	**1.61**	1.60	1.61

Plan Assets

Citigroup's pension and postretirement plans' asset allocations for the U.S. plans and the target allocations by asset category based on asset fair values are as follows:

	Target asset allocation	U.S. pension assets at December 31,		U.S. postretirement assets at December 31,	
Asset category[1]	2022	**2021**	2020	**2021**	2020
Equity securities[2]	0–22%	**7%**	16%	**7%**	16%
Debt securities[3]	55–114	**72**	59	**72**	59
Real estate	0–4	**2**	4	**2**	4
Private equity	0–5	**6**	3	**6**	3
Other investments	0–23	**13**	18	**13**	18
Total		**100%**	100%	**100%**	100%

(1) Asset allocations for the U.S. plans are set by investment strategy, not by investment product. For example, private equities with an underlying investment in real estate are classified in the real estate asset category, not private equity.
(2) Equity securities in the U.S. pension and postretirement plans do not include any Citigroup common stock at the end of 2021 and 2020.
(3) The VEBA Trust for postretirement benefits is primarily invested in cash equivalents and debt securities in 2021 and 2020 and is not reflected in the table above.

Third-party investment managers and advisors provide their services to Citigroup's U.S. pension and postretirement plans. Assets are rebalanced as the Company's Pension Plan Investment Committee deems appropriate. Citigroup's investment strategy, with respect to its assets, is to maintain a globally diversified investment portfolio across several asset classes that, when combined with Citigroup's contributions to the plans, will maintain the plans' ability to meet all required benefit obligations.

Citigroup's pension and postretirement plans' weighted-average asset allocations for the non-U.S. plans and the actual ranges, and the weighted-average target allocations by asset category based on asset fair values, are as follows:

	Non-U.S. pension plans				
	Target asset allocation	Actual range at December 31,		Weighted-average at December 31,	
Asset category[1]	2022	**2021**	2020	**2021**	2020
Equity securities	0–100%	**0–100%**	0–100%	**16%**	15%
Debt securities	0–100	**0–100**	0–100	**76**	77
Real estate	0–15	**0–14**	0–12	**1**	1
Other investments	0–100	**0–100**	0–100	**7**	7
Total				**100%**	100%

(1) Similar to the U.S. plans, asset allocations for certain non-U.S. plans are set by investment strategy, not by investment product.

	Non-U.S. postretirement plans				
	Target asset allocation	Actual range at December 31,		Weighted-average at December 31,	
Asset category[1]	2022	2021	2020	2021	2020
Equity securities	0–42%	0–42%	0–38%	41%	38%
Debt securities	54–100	53–100	56–100	53	56
Other investments	0–4	0–6	0–6	6	6
Total				100%	100%

(1) Similar to the U.S. plans, asset allocations for certain non-U.S. plans are set by investment strategy, not by investment product.

Fair Value Disclosure

For information on fair value measurements, including descriptions of Levels 1, 2 and 3 of the fair value hierarchy and the valuation methodology utilized by the Company, see Notes 1 and 24 to the Consolidated Financial Statements. Investments measured using the NAV per share practical expedient are excluded from Level 1, Level 2 and Level 3 in the tables below.

Certain investments may transfer between the fair value hierarchy classifications during the year due to changes in valuation methodology and pricing sources.

Plan assets by detailed asset categories and the fair value hierarchy are as follows:

In millions of dollars	U.S. pension and postretirement benefit plans[1]			
	Fair value measurement at December 31, 2021			
Asset categories	Level 1	Level 2	Level 3	Total
U.S. equities	$ 358	$ —	$—	$ 358
Non-U.S. equities	460	—	—	460
Mutual funds and other registered investment companies	297	—	—	297
Commingled funds	—	1,143	—	1,143
Debt securities	1,657	5,770	—	7,427
Annuity contracts	—	—	4	4
Derivatives	2	17	—	19
Other investments	13	—	25	38
Total investments	$2,787	$6,930	$29	$ 9,746
Cash and short-term investments	$ 635	$ 75	$—	$ 710
Other investment liabilities	(7)	(17)	—	(24)
Net investments at fair value	$3,415	$6,988	$29	$10,432
Other investment liabilities redeemed at NAV				$ (87)
Securities valued at NAV				2,951
Total net assets				$13,296

(1) The investments of the U.S. pension and postretirement plans are commingled in one trust. At December 31, 2021, the allocable interests of the U.S. pension and postretirement plans were 98.0% and 2.0%, respectively. The investments of the VEBA Trust for postretirement benefits are reflected in the above table.

In millions of dollars	U.S. pension and postretirement benefit plans[1]			
	Fair value measurement at December 31, 2020			
Asset categories	Level 1	Level 2	Level 3	Total
U.S. equities	$ 813	$ —	$ —	$ 813
Non-U.S. equities	725	—	—	725
Mutual funds and other registered investment companies	447	—	—	447
Commingled funds	—	1,056	—	1,056
Debt securities	1,275	4,430	—	5,705
Annuity contracts	—	—	1	1
Derivatives	8	6	—	14
Other investments	16	—	57	73
Total investments	$3,284	$5,492	$ 58	$ 8,834
Cash and short-term investments	$ 72	$1,035	$ —	$ 1,107
Other investment liabilities	(2)	(10)	—	(12)
Net investments at fair value	$3,354	$6,517	$ 58	$ 9,929
Other investment receivables redeemed at NAV				$ 99
Securities valued at NAV				3,612
Total net assets				$13,640

(1) The investments of the U.S. pension and postretirement plans are commingled in one trust. At December 31, 2020, the allocable interests of the U.S. pension and postretirement plans were 98.0% and 2.0%, respectively. The investments of the VEBA Trust for postretirement benefits are reflected in the above table.

In millions of dollars	**Non-U.S. pension and postretirement benefit plans**			
	Fair value measurement at December 31, 2021			
Asset categories	**Level 1**	**Level 2**	**Level 3**	**Total**
U.S. equities	**$ 127**	**$ 19**	**$ —**	**$ 146**
Non-U.S. equities	**713**	**92**	**—**	**805**
Mutual funds and other registered investment companies	**2,888**	**66**	**—**	**2,954**
Commingled funds	**21**	**—**	**—**	**21**
Debt securities	**4,263**	**1,341**	**—**	**5,604**
Real estate	**—**	**3**	**2**	**5**
Annuity contracts	**—**	**—**	**2**	**2**
Derivatives	**—**	**239**	**—**	**239**
Other investments	**—**	**—**	**318**	**318**
Total investments	**$8,012**	**$ 1,760**	**$322**	**$10,094**
Cash and short-term investments	**$ 117**	**$ 5**	**$ —**	**$ 122**
Other investment liabilities	**—**	**(1,578)**	**—**	**(1,578)**
Net investments at fair value	**$8,129**	**$ 187**	**$322**	**$ 8,638**
Securities valued at NAV				**$ 19**
Total net assets				**$ 8,657**

In millions of dollars	Non-U.S. pension and postretirement benefit plans			
	Fair value measurement at December 31, 2020			
Asset categories	Level 1	Level 2	Level 3	Total
U.S. equities	$ 5	$ 16	$ —	$ 21
Non-U.S. equities	105	670	—	775
Mutual funds and other registered investment companies	3,137	73	—	3,210
Commingled funds	24	—	—	24
Debt securities	6,705	1,420	—	8,125
Real estate	—	2	2	4
Annuity contracts	—	—	5	5
Derivatives	—	1,005	—	1,005
Other investments	—	—	312	312
Total investments	$ 9,976	$ 3,186	$319	$13,481
Cash and short-term investments	$ 129	$ 3	$ —	$ 132
Other investment liabilities	—	(4,650)	—	(4,650)
Net investments at fair value	$ 10,105	$(1,461)	$319	$ 8,963
Securities valued at NAV				$ 14
Total net assets				$ 8,977

Level 3 Rollforward

The reconciliations of the beginning and ending balances during the year for Level 3 assets are as follows:

In millions of dollars	**U.S. pension and postretirement benefit plans**					
Asset categories	**Beginning Level 3 fair value at Dec. 31, 2020**	**Realized (losses)**	**Unrealized gains**	**Purchases, sales and issuances**	**Transfers in and/or out of Level 3**	**Ending Level 3 fair value at Dec. 31, 2021**
Annuity contracts	$ 1	$—	$—	$ 2	$—	**$ 4**
Other investments	57	(6)	2	(28)	—	**25**
Total investments	$58	$ (6)	$ 2	$(25)	$—	**$29**

In millions of dollars	U.S. pension and postretirement benefit plans					
Asset categories	Beginning Level 3 fair value at Dec. 31, 2019	Realized (losses)	Unrealized (losses)	Purchases, sales and issuances	Transfers in and/or out of Level 3	Ending Level 3 fair value at Dec. 31, 2020
Annuity contracts	$ 1	$—	$ —	$ —	$—	$ 1
Other investments	75	(3)	3	(18)	—	57
Total investments	$76	$ (3)	$ 3	$(18)	$—	$58

In millions of dollars	**Non-U.S. pension and postretirement benefit plans**				
Asset categories	**Beginning Level 3 fair value at Dec. 31, 2020**	**Unrealized gains**	**Purchases, sales and issuances**	**Transfers in and/or out of Level 3**	**Ending Level 3 fair value at Dec. 31, 2021**
Debt securities	$ —	$—	$ —	$—	**$ —**
Real estate	2	—	—	—	**2**
Annuity contracts	5	—	(3)	—	**2**
Other investments	312	4	2	—	**318**
Total investments	$319	$ 4	$ (1)	$—	**$322**

In millions of dollars	Non-U.S. pension and postretirement benefit plans				
Asset categories	Beginning Level 3 fair value at Dec. 31, 2019	Unrealized (losses)	Purchases, sales and issuances	Transfers in and/or out of Level 3	Ending Level 3 fair value at Dec. 31, 2020
Debt securities	$ 10	$—	$(10)	$—	$ —
Real estate	1	1	—	—	2
Annuity contracts	5	—	—	—	5
Other investments	274	23	15	—	312
Total investments	$290	$24	$ 5	$—	$319

Investment Strategy

The Company's global pension and postretirement funds' investment strategy is to invest in a prudent manner for the exclusive purpose of providing benefits to participants. The investment strategies are targeted to produce a total return that, when combined with the Company's contributions to the funds, will maintain the funds' ability to meet all required benefit obligations. Risk is controlled through diversification of asset types and investments in domestic and international equities, fixed income securities and cash and short-term investments. The target asset allocation in most locations outside the U.S. is primarily in equity and debt securities. These allocations may vary by geographic region and country depending on the nature of applicable obligations and various other regional considerations. The wide variation in the actual range of plan asset allocations for the funded non-U.S. plans is a result of differing local statutory requirements and economic conditions. For example, in certain countries local law requires that all pension plan assets must be invested in fixed income investments, government funds or local-country securities.

Significant Concentrations of Risk in Plan Assets

The assets of the Company's pension plans are diversified to limit the impact of any individual investment. The U.S. qualified pension plan is diversified across multiple asset classes, with publicly traded fixed income, publicly traded equity, hedge funds and real estate representing the most significant asset allocations. Investments in these four asset classes are further diversified across funds, managers, strategies, vintages, sectors and geographies, depending on the specific characteristics of each asset class. The pension assets for the Company's non-U.S. Significant Plans are primarily invested in publicly traded fixed income and publicly traded equity securities.

Oversight and Risk Management Practices

The framework for the Company's pension oversight process includes monitoring of retirement plans by plan fiduciaries and/or management at the global, regional or country level, as appropriate. Independent Risk Management contributes to the risk oversight and monitoring for the Company's U.S. qualified pension plan and non-U.S. Significant Pension Plans. Although the specific components of the oversight process are tailored to the requirements of each region, country and plan, the following elements are common to the Company's monitoring and risk management process:

- periodic asset/liability management studies and strategic asset allocation reviews;
- periodic monitoring of funding levels and funding ratios;
- periodic monitoring of compliance with asset allocation guidelines;
- periodic monitoring of asset class and/or investment manager performance against benchmarks; and
- periodic risk capital analysis and stress testing.

Estimated Future Benefit Payments

The Company expects to pay the following estimated benefit payments in future years:

	Pension plans		Postretirement benefit plans	
In millions of dollars	U.S. plans	Non-U.S. plans[1]	U.S. plans	Non-U.S. plans
2022	$ 956	$ 958	$ 64	$ 71
2023	837	452	50	74
2024	844	460	47	78
2025	846	462	44	82
2026	838	467	41	86
2027–2031	3,946	2,428	164	493

(1) Estimated 2022 benefit payments have increased due to the wind-down of Citi's consumer banking business in Korea, as it is expected that employees who elected the VERP plan will be withdrawing their pension plan assets. See Note 2 to the Consolidated Financial Statements for additional information.

Post Employment Plans

The Company 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 following table summarizes the funded status and amounts recognized on the Company's Consolidated Balance Sheet:

In millions of dollars	2021	2020
Funded status of the plan at year end	**$(41)**	$(40)
Net amount recognized in *AOCI* (pretax)	**$(15)**	$(17)

The following table summarizes the net expense recognized in the Consolidated Statement of Income for the Company's U.S. post employment plans:

In millions of dollars	2021	2020	2019
Net expense	**$10**	$9	$9

Defined Contribution Plans

The Company sponsors 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 the Company 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 2021 and 2020, 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 Company contributions are invested according to participants' individual elections. The following tables summarize the Company contributions for the defined contribution plans:

	U.S. plans		
In millions of dollars	2021	2020	2019
Company contributions	**$436**	$414	$404

	Non-U.S. plans		
In millions of dollars	2021	2020	2019
Company contributions	**$364**	$304	$281

9. INCOME TAXES

Income Tax Provision

Details of the Company's income tax provision are presented below:

In millions of dollars	**2021**	2020	2019
Current			
Federal	**$ 522**	$ 305	$ 365
Non-U.S.	**3,288**	4,113	4,352
State	**228**	440	323
Total current income taxes	**$ 4,038**	$ 4,858	$5,040
Deferred			
Federal	**$ 1,059**	$(1,430)	$ (907)
Non-U.S.	**8**	(690)	10
State	**346**	(213)	287
Total deferred income taxes	**$ 1,413**	$(2,333)	$ (610)
Provision for income tax on continuing operations before noncontrolling interests[1]	**$ 5,451**	$ 2,525	$4,430
Provision (benefit) for income taxes on discontinued operations	**—**	—	(27)
Income tax expense (benefit) reported in stockholders' equity related to:			
FX translation	**(146)**	23	(11)
Investment securities	**(1,367)**	1,214	648
Employee stock plans	**(6)**	(4)	(16)
Cash flow hedges	**(476)**	455	269
Benefit plans	**240**	(23)	(119)
FVO DVA	**64**	(141)	(337)
Excluded fair value hedges	**2**	(8)	8
Retained earnings[2]	**—**	(911)	46
Income taxes before noncontrolling interests	**$ 3,762**	$ 3,130	$4,891

(1) Includes the tax on realized investment gains and impairment losses resulting in a provision (benefit) of $169 million and $(57) million in 2021, $454 million and $(14) million in 2020 and $373 million and $(9) million in 2019, respectively.

(2) 2020 reflects the tax effect of ASU 2016-13 for current expected credit losses (CECL). 2019 reflects the tax effect of the accounting change for ASU 2016-02 for lease transactions.

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:

	2021	2020	2019
Federal statutory rate	**21.0%**	21.0%	21.0%
State income taxes, net of federal benefit	**2.1**	1.3	1.9
Non-U.S. income tax rate differential	**1.6**	3.5	1.3
Nondeductible FDIC premiums	**0.6**	1.3	0.4
Tax advantaged investments	**(2.3)**	(4.4)	(2.3)
Valuation allowance releases[1]	**(1.7)**	(4.4)	(3.0)
Other, net	**(1.5)**	0.2	(0.8)
Effective income tax rate	**19.8%**	18.5%	18.5%

(1) See "Deferred Tax Assets" below for a description of the components.

As set forth in the table above, Citi's effective tax rate for 2021 was 19.8%, compared to 18.5% in 2020, primarily due to the reduced effect of permanent differences, including the valuation allowance releases, on a much higher level of pretax income.

Deferred Income Taxes

Deferred income taxes at December 31 related to the following:

In millions of dollars	**2021**	2020
Deferred tax assets		
Credit loss deduction	**$ 5,330**	$ 6,791
Deferred compensation and employee benefits	**2,335**	2,510
U.S. tax on non-U.S. earnings	**1,138**	1,195
Investment and loan basis differences	**2,970**	1,486
Tax credit and net operating loss carry-forwards	**15,620**	17,416
Fixed assets and leases	**3,064**	2,935
Other deferred tax assets	**3,549**	3,832
Gross deferred tax assets	**$34,006**	$36,165
Valuation allowance	**$ 4,194**	$ 5,177
Deferred tax assets after valuation allowance	**$29,812**	$30,988
Deferred tax liabilities		
Intangibles and leases	**$ (2,446)**	$ (2,526)
Non-U.S. withholding taxes	**(987)**	(921)
Interest-related items	**—**	(597)
Other deferred tax liabilities	**(1,590)**	(2,104)
Gross deferred tax liabilities	**$ (5,023)**	$ (6,148)
Net deferred tax assets	**$24,789**	$24,840

Unrecognized Tax Benefits

The following is a rollforward of the Company's unrecognized tax benefits:

In millions of dollars	**2021**	2020	2019
Total unrecognized tax benefits at January 1	**$ 861**	$721	$607
Net amount of increases for current year's tax positions	**97**	51	50
Gross amount of increases for prior years' tax positions	**515**	217	151
Gross amount of decreases for prior years' tax positions	**(107)**	(74)	(44)
Amounts of decreases relating to settlements	**(64)**	(40)	(21)
Reductions due to lapse of statutes of limitation	**(2)**	(13)	(23)
Foreign exchange, acquisitions and dispositions	**(4)**	(1)	1
Total unrecognized tax benefits at December 31	**$1,296**	$861	$721

The portions of the total unrecognized tax benefits at December 31, 2021, 2020 and 2019 that, if recognized, would affect Citi's tax expense are $1.0 billion, $0.7 billion and $0.6 billion, respectively. The remaining uncertain tax positions have offsetting amounts in other jurisdictions or are temporary differences.

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

	2021		2020		2019	
In millions of dollars	**Pretax**	**Net of tax**	Pretax	Net of tax	Pretax	Net of tax
Total interest and penalties on the Consolidated Balance Sheet at January 1	**$118**	**$ 96**	$100	$82	$103	$85
Total interest and penalties in the Consolidated Statement of Income	**32**	**24**	14	10	(4)	(4)
Total interest and penalties on the Consolidated Balance Sheet at December 31[1]	**214**	**164**	118	96	100	82

(1) Includes $3 million, $4 million and $3 million for non-U.S. penalties in 2021, 2020 and 2019, respectively. Also includes $0 million, $1 million and $1 million for state penalties in 2021, 2020 and 2019, respectively.

As of December 31, 2021, Citi 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. The potential range of amounts that could affect Citi's effective tax rate is between $0 and $500 million.

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
Mexico	2016
New York State and City	2009
United Kingdom	2016
India	2017
Singapore	2019
Hong Kong	2015
Ireland	2017

Non-U.S. Earnings

Non-U.S. pretax earnings approximated $12.9 billion in 2021, $13.8 billion in 2020 and $16.7 billion in 2019. As a U.S. corporation, Citigroup 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 a non-U.S. subsidiary or affiliate are effectively exempt from U.S. taxation. The Company provides income taxes on the book over tax basis differences of non-U.S. subsidiaries except to the extent that such differences are indefinitely reinvested outside the U.S.

At December 31, 2021, $6.5 billion of basis differences of non-U.S. entities was indefinitely invested. At the existing tax rates (including withholding taxes), additional taxes (net of U.S. FTCs and valuation allowances) of $1.8 billion would have to be provided if such assertions were reversed.

Income taxes are not provided for the Company's "savings bank base year bad debt reserves" that arose before 1988, because under current U.S. tax rules, such taxes will become payable only to the extent that such amounts are distributed in excess of limits prescribed by federal law. At December 31, 2021, the amount of the base year reserves totaled approximately $358 million (subject to a tax of $75 million).

Deferred Tax Assets

As of December 31, 2021, Citi had a valuation allowance of $4.2 billion, composed of valuation allowances of $0.8 billion on its general basket FTC carry-forwards, $1.7 billion on its branch basket FTC carry-forwards, $1.0 billion on its U.S. residual DTA related to its non-U.S. branches, $0.6 billion on local non-U.S. DTAs and $0.1 billion on state net operating loss carry-forwards. There was a decrease of $1.0 billion from the December 31, 2020 balance of $5.2 billion. The amount of Citi's valuation allowances (VA) may change in future years.

In 2021, Citi's VA for carry-forward FTCs in its branch basket decreased by $0.7 billion and the related VA for the U.S. tax effect on non-U.S. branch temporary differences was unchanged. Of this total branch-related change of $0.7 billion, $0.3 billion impacted the tax provision as discussed below. The remainder of the branch basket-related VA decrease of $0.4 billion was primarily due to carry-forward expirations.

The level of branch pretax income, the local branch tax rate and the allocations of overall domestic losses (ODL) and expenses for U.S. tax purposes to the branch basket are the main factors in determining the branch VA. The allocated ODL was enhanced by significant taxable income generated in the current year. In addition, the global interest rate environment and balance sheet requirements in non-U.S. branches resulted in a lower relative allocation of interest expense to non-U.S. branches. The combination of the factors enumerated resulted in a VA release of $0.2 billion in Citi's full-year effective tax rate. Citi also released branch basket VA of $0.1 billion with respect to future years, based upon Citi's Operating Plan and estimates of future branch basket factors, as outlined above.

In Citi's general basket for FTCs, changes in the forecasted amount of income in U.S. locations derived from sources outside the U.S., in addition to tax examination changes from prior years, could alter the amount of VA that is needed against such FTCs. The VA for the general basket decreased by $0.2 billion to $0.8 billion, primarily due to audit adjustments. Citi continues to look for additional actions that may become prudent and feasible, taking into account client, regulatory and operational considerations.

The VA for U.S. residual DTA related to its non-U.S. branches was unchanged at $1.0 billion. In addition, the non-U.S. local VA was unchanged at $0.6 billion.

The following table summarizes Citi's DTAs:

In billions of dollars

Jurisdiction/component[1]	DTAs balance December 31, 2021	DTAs balance December 31, 2020
U.S. federal[2]		
Net operating losses (NOLs)[3]	**$ 3.2**	$ 3.0
Foreign tax credits (FTCs)	**2.8**	4.4
General business credits (GBCs)	**4.5**	3.6
Future tax deductions and credits	**8.4**	7.9
Total U.S. federal	**$18.9**	$18.9
State and local		
New York NOLs	**$ 1.2**	$ 1.5
Other state NOLs	**0.2**	0.1
Future tax deductions	**1.8**	1.7
Total state and local	**$ 3.2**	$ 3.3
Non-U.S.		
NOLs	**$ 0.5**	$ 0.6
Future tax deductions	**2.2**	2.0
Total non-U.S.	**$ 2.7**	$ 2.6
Total	**$24.8**	$24.8

(1) All amounts are net of valuation allowances.
(2) Included in the net U.S. federal DTAs of $18.9 billion as of December 31, 2021 were deferred tax liabilities of $2.7 billion that will reverse in the relevant carry-forward period and may be used to support the DTAs.
(3) Consists of non-consolidated tax return NOL carry-forwards that are eventually expected to be utilized in Citigroup's consolidated tax return.

The following table summarizes the amounts of tax carry-forwards and their expiration dates:

In billions of dollars

Year of expiration	December 31, 2021	December 31, 2020
U.S. tax return general basket foreign tax credit carry-forwards[1]		
2022	**$ 0.5**	$ 2.3
2023	**0.4**	0.4
2025	**1.5**	1.4
2027	**1.1**	1.2
Total U.S. tax return general basket foreign tax credit carry-forwards	**$ 3.5**	$ 5.3
U.S. tax return branch basket foreign tax credit carry-forwards[1]		
2021	**$ —**	$ 0.7
2022	**1.0**	1.0
2028	**0.6**	0.6
2029	**0.2**	0.2
Total U.S. tax return branch basket foreign tax credit carry-forwards	**$ 1.8**	$ 2.5
U.S. tax return general business credit carry-forwards		
2032	**$ 0.4**	$ 0.3
2033	**0.3**	0.3
2034	**0.2**	0.2
2035	**0.2**	0.2
2036	**0.2**	0.2
2037	**0.5**	0.5
2038	**0.5**	0.5
2039	**0.7**	0.7
2040	**0.7**	0.7
2041	**0.8**	—
Total U.S. tax return general business credit carry-forwards	**$ 4.5**	$ 3.6
U.S. subsidiary separate federal NOL carry-forwards		
2027	**$ 0.1**	$ 0.1
2028	**0.1**	0.1
2030	**0.3**	0.3
2033	**1.6**	1.5
2034	**2.0**	2.0
2035	**3.3**	3.3
2036	**2.1**	2.1
2037	**1.0**	1.0
Unlimited carry-forward period	**4.6**	3.9
Total U.S. subsidiary separate federal NOL carry-forwards[2]	**$15.1**	$14.3
New York State NOL carry-forwards[2]		
2034	**$ 6.6**	$ 8.1
New York City NOL carry-forwards[2]		
2034	**$ 7.2**	$ 8.7
Non-U.S. NOL carry-forwards[1]		
Various	**$ 1.1**	$ 1.2

(1) Before valuation allowance.
(2) Pretax.

The time remaining for utilization of the FTC component has shortened, given the passage of time. Although realization is not assured, Citi believes that the realization of the recognized net DTAs of $24.8 billion at December 31, 2021 is more-likely-than-not, based upon expectations as to future taxable income in the jurisdictions in which the DTAs arise and consideration of available tax planning strategies (as defined in ASC 740, *Income Taxes*).

The majority of Citi's U.S. federal net operating loss carry-forward and all of its New York State and City net operating loss carry-forwards are subject to a carry-forward period of 20 years. This provides enough time to fully utilize the DTAs pertaining to these existing NOL carry-forwards. This is due to Citi's forecast of sufficient U.S. taxable income and because New York State and City continue to tax Citi's non-U.S. income.

With respect to the FTCs component of the DTAs, the carry-forward period is 10 years. Utilization of FTCs in any year is generally limited to 21% of foreign source taxable income in that year. However, ODL that Citi has incurred of approximately $15 billion as of December 31, 2021 are allowed to be reclassified as foreign source income to the extent of 50%–100% (at taxpayer's election) of domestic source income produced in subsequent years. Such resulting foreign source income would support the realization of the FTC carry-forwards after VA. As noted in the tables above, Citi's FTC carry-forwards were $2.8 billion ($5.3 billion before VA) as of December 31, 2021, compared to $4.4 billion as of December 31, 2020. Citi believes that it will more-likely-than-not generate sufficient U.S. taxable income within the 10-year carry-forward period to be able to utilize the net FTCs after the VA, after considering any FTCs produced in the tax return for such period, which must be used prior to any carry-forward utilization.

10. EARNINGS PER SHARE

The following table reconciles the income and share data used in the basic and diluted earnings per share (EPS) computations:

In millions of dollars, except per share amounts	**2021**	2020	2019
Earnings per common share			
Income from continuing operations before attribution of noncontrolling interests	**$ 22,018**	$ 11,107	$ 19,471
Less: Noncontrolling interests from continuing operations	**73**	40	66
Net income from continuing operations (for EPS purposes)	**$ 21,945**	$ 11,067	$ 19,405
Loss from discontinued operations, net of taxes	**7**	(20)	(4)
Citigroup's net income	**$ 21,952**	$ 11,047	$ 19,401
Less: Preferred dividends[1]	**1,040**	1,095	1,109
Net income available to common shareholders	**$ 20,912**	$ 9,952	$ 18,292
Less: Dividends and undistributed earnings allocated to employee restricted and deferred shares with rights to dividends, applicable to basic EPS	**154**	73	121
Net income allocated to common shareholders for basic EPS	**$ 20,758**	$ 9,879	$ 18,171
Weighted-average common shares outstanding applicable to basic EPS *(in millions)*	**2,033.0**	2,085.8	2,249.2
Basic earnings per share[2]			
Income from continuing operations	**$ 10.21**	$ 4.75	$ 8.08
Discontinued operations	**—**	(0.01)	—
Net income per share—basic	**$ 10.21**	$ 4.74	$ 8.08
Diluted earnings per share			
Net income allocated to common shareholders for basic EPS	**$ 20,758**	$ 9,879	$ 18,171
Add back: Dividends allocated to employee restricted and deferred shares with rights to dividends that are forfeitable	**31**	30	33
Net income allocated to common shareholders for diluted EPS	**$ 20,789**	$ 9,909	$ 18,204
Weighted-average common shares outstanding applicable to basic EPS *(in millions)*	**$2,033.0**	$2,085.8	$2,249.2
Effect of dilutive securities			
Options[3]	**—**	0.1	0.1
Other employee plans	**16.4**	13.1	16.0
Adjusted weighted-average common shares outstanding applicable to diluted EPS *(in millions)*[4]	**2,049.4**	2,099.0	2,265.3
Diluted earnings per share[2]			
Income from continuing operations	**$ 10.14**	$ 4.73	$ 8.04
Discontinued operations	**—**	(0.01)	—
Net income per share—diluted	**$ 10.14**	$ 4.72	$ 8.04

(1) See Note 20 to the Consolidated Financial Statements for the potential future impact of preferred stock dividends.
(2) Due to rounding, earnings per share on continuing operations and discontinued operations may not sum to earnings per share on net income.
(3) During 2021, there were no weighted-average options outstanding. During 2021, no significant options to purchase shares of common stock were outstanding. During 2020, weighted-average options to purchase 0.1 million shares of common stock were outstanding but not included in the computation of earnings per share because the weighted-average exercise price of $56.25 per share was anti-dilutive.
(4) Due to rounding, weighted-average common shares outstanding applicable to basic EPS and the effect of dilutive securities may not sum to weighted-average common shares outstanding applicable to diluted EPS.

11. 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	**2021**	2020
Securities purchased under agreements to resell	**$236,252**	$204,655
Deposits paid for securities borrowed	**91,042**	90,067
Total, net[1]	**$327,294**	$294,722
Allowance for credit losses on securities purchased and borrowed[2]	**(6)**	(10)
Total, net of allowance	**$327,288**	$294,712

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

	December 31,	
In millions of dollars	**2021**	2020
Securities sold under agreements to repurchase	**$174,255**	$181,194
Deposits received for securities loaned	**17,030**	18,331
Total, net[1]	**$191,285**	$199,525

(1) The above tables do not include securities-for-securities lending transactions of $3.6 billion and $6.8 billion at December 31, 2021 and 2020, respectively, where the Company acts as lender and receives securities that can be sold or pledged as collateral. In these transactions, the Company recognizes the securities received at fair value within *Other assets* and the obligation to return those securities as a liability within *Brokerage payables*.

(2) See Note 15 to the Consolidated Financial Statements for further information.

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

To maintain reliable funding under a wide range of market conditions, including under periods of stress, Citi manages these activities by taking into consideration the quality of the underlying collateral and stipulating financing tenor. Citi 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, Citi 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 24 and 25 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 25 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 amounts permitted under ASC 210-20-45. The tables also include amounts related to financial instruments that are not permitted to be offset under ASC 210-20-45, but would be eligible for offsetting to the extent that an event of default has occurred and a legal opinion supporting enforceability of the offsetting rights has been obtained. Remaining exposures continue to be secured by financial collateral, but the Company may not have sought or been able to obtain a legal opinion evidencing enforceability of the offsetting right.

	As of December 31, 2021				
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	**$367,594**	**$131,342**	**$236,252**	**$205,349**	**$ 30,903**
Deposits paid for securities borrowed	**107,041**	**15,999**	**91,042**	**17,326**	**73,716**
Total	**$474,635**	**$147,341**	**$327,294**	**$222,675**	**$104,619**

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	**$305,597**	**$131,342**	**$174,255**	**$85,184**	**$ 89,071**
Deposits received for securities loaned	**33,029**	**15,999**	**17,030**	**2,868**	**14,162**
Total	**$338,626**	**$147,341**	**$191,285**	**$88,052**	**$103,233**

	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	$362,025	$157,370	$204,655	$159,232	$ 45,423
Deposits paid for securities borrowed	96,425	6,358	90,067	13,474	76,593
Total	$458,450	$163,728	$294,722	$172,706	$122,016

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	$338,564	$157,370	$181,194	$ 95,563	$85,631
Deposits received for securities loaned	24,689	6,358	18,331	7,982	10,349
Total	$363,253	$163,728	$199,525	$103,545	$95,980

(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, 2021				
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	**$127,679**	**$93,257**	**$32,908**	**$51,753**	**$305,597**
Deposits received for securities loaned	**23,387**	**6**	**1,392**	**8,244**	**33,029**
Total	**$151,066**	**$93,263**	**$34,300**	**$59,997**	**$338,626**

	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	$160,754	$98,226	$41,679	$37,905	$338,564
Deposits received for securities loaned	17,038	3	2,770	4,878	24,689
Total	$177,792	$98,229	$44,449	$42,783	$363,253

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, 2021		
In millions of dollars	**Repurchase agreements**	**Securities lending agreements**	**Total**
U.S. Treasury and federal agency securities	**$ 85,861**	**$ 90**	**$ 85,951**
State and municipal securities	**1,053**	**—**	**1,053**
Foreign government securities	**133,352**	**212**	**133,564**
Corporate bonds	**20,398**	**152**	**20,550**
Equity securities	**25,653**	**32,517**	**58,170**
Mortgage-backed securities	**33,573**	**—**	**33,573**
Asset-backed securities	**1,681**	**—**	**1,681**
Other	**4,026**	**58**	**4,084**
Total	**$305,597**	**$33,029**	**$338,626**

	As of December 31, 2020		
In millions of dollars	Repurchase agreements	Securities lending agreements	Total
U.S. Treasury and federal agency securities	$112,437	$ —	$112,437
State and municipal securities	664	2	666
Foreign government securities	130,017	194	130,211
Corporate bonds	20,149	78	20,227
Equity securities	21,497	24,149	45,646
Mortgage-backed securities	45,566	—	45,566
Asset-backed securities	3,307	—	3,307
Other	4,927	266	5,193
Total	$338,564	$24,689	$363,253

12. BROKERAGE RECEIVABLES AND BROKERAGE PAYABLES

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. Citi 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 Citi 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.

Citi 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, Citi 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 Citi. 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 *Brokerage payables* consisted of the following:

	December 31,	
In millions of dollars	**2021**	2020
Receivables from customers, net	**$26,403**	$18,097
Receivables from brokers, dealers and clearing organizations	**27,937**	26,709
Total brokerage receivables[1]	**$54,340**	$44,806
Payables to customers	**$52,158**	$39,319
Payables to brokers, dealers and clearing organizations	**9,272**	11,165
Total brokerage payables[1]	**$61,430**	$50,484

(1) Includes brokerage receivables and payables recorded by Citi broker-dealer entities that are accounted for in accordance with the AICPA Accounting Guide for Brokers and Dealers in Securities as codified in ASC 940-320.

13. INVESTMENTS

The following table presents Citi's investments by category:

In millions of dollars	December 31, 2021	2020
Debt securities available-for-sale (AFS)	**$288,522**	$335,084
Debt securities held-to-maturity (HTM)[1]	**216,963**	104,943
Marketable equity securities carried at fair value[2]	**543**	515
Non-marketable equity securities carried at fair value[2]	**489**	551
Non-marketable equity securities measured using the measurement alternative[3]	**1,413**	962
Non-marketable equity securities carried at cost[4]	**4,892**	5,304
Total investments	**$512,822**	$447,359

(1) Carried at adjusted amortized cost basis, net of any ACL.
(2) Unrealized gains and losses are recognized in earnings.
(3) Impairment losses and adjustments to the carrying value as a result of observable price changes are recognized in earnings. See "Non-Marketable Equity Securities Not Carried at Fair Value" below.
(4) Represents shares issued by the Federal Reserve Bank, Federal Home Loan Banks and certain exchanges of which Citigroup is a member.

The following table presents interest and dividend income on investments:

In millions of dollars	**2021**	2020	2019
Taxable interest	**$6,975**	$7,554	$9,269
Interest exempt from U.S. federal income tax	**279**	301	404
Dividend income	**134**	134	187
Total interest and dividend income on investments	**$7,388**	$7,989	$9,860

The following table presents realized gains and losses on the sales of investments, which exclude impairment losses:

In millions of dollars	**2021**	2020	2019
Gross realized investment gains	**$ 860**	$1,895	$1,599
Gross realized investment losses	**(195)**	(139)	(125)
Net realized gains on sales of investments	**$ 665**	$1,756	$1,474

Debt Securities Available-for-Sale

The amortized cost and fair value of AFS debt securities were as follows:

	December 31, 2021					December 31, 2020				
In millions of dollars	**Amortized cost**	**Gross unrealized gains**	**Gross unrealized losses**	**Allowance for credit losses**	**Fair value**	Amortized cost	Gross unrealized gains	Gross unrealized losses	Allowance for credit losses	Fair value
Debt securities AFS										
Mortgage-backed securities[1]										
U.S. government-sponsored agency guaranteed	**$ 33,064**	**$ 453**	**$ 301**	**$ —**	**$ 33,216**	$ 42,836	$1,134	$ 52	$ —	$ 43,918
Non-U.S. residential	**380**	**1**	**1**	**—**	**380**	568	3	—	—	571
Commercial	**25**	**—**	**—**	**—**	**25**	49	1	—	—	50
Total mortgage-backed securities	**$ 33,469**	**$ 454**	**$ 302**	**$ —**	**$ 33,621**	$ 43,453	$1,138	$ 52	$ —	$ 44,539
U.S. Treasury and federal agency securities										
U.S. Treasury	**$122,669**	**$ 615**	**$ 844**	**$ —**	**$122,440**	$144,094	$2,108	$ 49	$ —	$146,153
Agency obligations	**—**	**—**	**—**	**—**	**—**	50	1	—	—	51
Total U.S. Treasury and federal agency securities	**$122,669**	**$ 615**	**$ 844**	**$ —**	**$122,440**	$144,144	$2,109	$ 49	$ —	$146,204
State and municipal	**$ 2,643**	**$ 79**	**$ 101**	**$ —**	**$ 2,621**	$ 3,753	$ 123	$ 157	$ —	$ 3,719
Foreign government	**119,426**	**337**	**1,023**	**—**	**118,740**	123,467	1,623	122	—	124,968
Corporate	**5,972**	**33**	**77**	**8**	**5,920**	10,444	152	91	5	10,500
Asset-backed securities[1]	**304**	**—**	**1**	**—**	**303**	277	5	4	—	278
Other debt securities	**4,880**	**1**	**4**	**—**	**4,877**	4,871	5	—	—	4,876
Total debt securities AFS	**$289,363**	**$1,519**	**$2,352**	**$ 8**	**$288,522**	$330,409	$5,155	$ 475	$ 5	$335,084

(1) The Company invests in mortgage- and asset-backed securities, which are typically issued by VIEs through securitization transactions. The Company's maximum exposure to loss from these VIEs is equal to the carrying amount of the securities, which is reflected in the table above. For mortgage- and asset-backed securitizations in which the Company has other involvement, see Note 21 to the Consolidated Financial Statements.

At December 31, 2021, the amortized cost of fixed income securities exceeded their fair value by $2,352 million. Of the $2,352 million, $1,895 million represented unrealized losses on fixed income investments that have been in a gross-unrealized-loss position for less than a year and, of these, 77% were rated investment grade; and $457 million represented unrealized losses on fixed income investments that have been in a gross-unrealized-loss position for a year or more and, of these, 99% were rated investment grade. Of the $457 million, $197 million represents foreign government securities.

The following table shows the fair value of AFS debt securities that have been in an unrealized loss position:

In millions of dollars	Less than 12 months		12 months or longer		Total	
	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses
December 31, 2021						
Debt securities AFS						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	**$ 17,039**	**$ 270**	**$ 698**	**$ 31**	**$ 17,737**	**$ 301**
Non-U.S. residential	**96**	**1**	**1**	**—**	**97**	**1**
Commercial	**—**	**—**	**—**	**—**	**—**	**—**
Total mortgage-backed securities	**$ 17,135**	**$ 271**	**$ 699**	**$ 31**	**$ 17,834**	**$ 302**
U.S. Treasury and federal agency securities						
U.S. Treasury	**$ 56,448**	**$ 713**	**$ 6,310**	**$131**	**$ 62,758**	**$ 844**
Agency obligations	**—**	**—**	**—**	**—**	**—**	**—**
Total U.S. Treasury and federal agency securities	**$ 56,448**	**$ 713**	**$ 6,310**	**$131**	**$ 62,758**	**$ 844**
State and municipal	**$ 229**	**$ 3**	**$ 874**	**$ 98**	**$ 1,103**	**$ 101**
Foreign government	**64,319**	**826**	**9,924**	**197**	**74,243**	**1,023**
Corporate	**2,655**	**77**	**22**	**—**	**2,677**	**77**
Asset-backed securities	**108**	**1**	**—**	**—**	**108**	**1**
Other debt securities	**3,439**	**4**	**—**	**—**	**3,439**	**4**
Total debt securities AFS	**$144,333**	**$1,895**	**$17,829**	**$457**	**$162,162**	**$2,352**
December 31, 2020						
Debt securities AFS						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	$ 3,588	$ 30	$ 298	$ 22	$ 3,886	$ 52
Non-U.S. residential	1	—	—	—	1	—
Commercial	7	—	4	—	11	—
Total mortgage-backed securities	$ 3,596	$ 30	$ 302	$ 22	$ 3,898	$ 52
U.S. Treasury and federal agency securities						
U.S. Treasury	$ 25,031	$ 49	$ —	$ —	$ 25,031	$ 49
Agency obligations	50	—	—	—	50	—
Total U.S. Treasury and federal agency securities	$ 25,081	$ 49	$ —	$ —	$ 25,081	$ 49
State and municipal	$ 836	$ 34	$ 893	$123	$ 1,729	$ 157
Foreign government	29,344	61	3,502	61	32,846	122
Corporate	1,083	90	24	1	1,107	91
Asset-backed securities	194	3	39	1	233	4
Other debt securities	182	—	—	—	182	—
Total debt securities AFS	$ 60,316	$ 267	$ 4,760	$208	$ 65,076	$ 475

The following table presents the amortized cost and fair value of AFS debt securities by contractual maturity dates:

	December 31,				
	2021			2020	
In millions of dollars	**Amortized cost**	**Fair value**	**Weighted average yield[1]**	Amortized cost	Fair value
Mortgage-backed securities[2]					
Due within 1 year	**$ 188**	**$ 189**	**0.79%**	$ 27	$ 27
After 1 but within 5 years	**211**	**211**	**1.07**	567	571
After 5 but within 10 years	**523**	**559**	**3.41**	688	757
After 10 years	**32,547**	**32,662**	**2.73**	42,171	43,184
Total	**$ 33,469**	**$ 33,621**	**2.72%**	$ 43,453	$ 44,539
U.S. Treasury and federal agency securities					
Due within 1 year	**$ 34,321**	**$ 34,448**	**1.05%**	$ 34,834	$ 34,951
After 1 but within 5 years	**87,987**	**87,633**	**0.81**	108,160	110,091
After 5 but within 10 years	**361**	**359**	**1.42**	1,150	1,162
After 10 years	**—**	**—**	**—**	—	—
Total	**$122,669**	**$122,440**	**0.87%**	$144,144	$146,204
State and municipal					
Due within 1 year	**$ 40**	**$ 40**	**2.09%**	$ 427	$ 428
After 1 but within 5 years	**121**	**124**	**3.16**	189	198
After 5 but within 10 years	**156**	**161**	**3.18**	276	267
After 10 years	**2,326**	**2,296**	**3.15**	2,861	2,826
Total	**$ 2,643**	**$ 2,621**	**3.14%**	$ 3,753	$ 3,719
Foreign government					
Due within 1 year	**$ 49,263**	**$ 49,223**	**2.53%**	$ 48,133	$ 48,258
After 1 but within 5 years	**64,555**	**63,961**	**3.14**	67,365	68,586
After 5 but within 10 years	**3,736**	**3,656**	**1.72**	5,908	6,011
After 10 years	**1,872**	**1,900**	**1.52**	2,061	2,113
Total	**$119,426**	**$118,740**	**2.82%**	$123,467	$124,968
All other[3]					
Due within 1 year	**$ 5,175**	**$ 5,180**	**0.94%**	$ 6,661	$ 6,665
After 1 but within 5 years	**5,177**	**5,149**	**1.91**	7,814	7,891
After 5 but within 10 years	**750**	**750**	**2.08**	1,018	1,034
After 10 years	**54**	**21**	**4.28**	99	64
Total	**$ 11,156**	**$ 11,100**	**1.48%**	$ 15,592	$ 15,654
Total debt securities AFS	**$289,363**	**$288,522**	**1.94%**	$330,409	$335,084

(1) Weighted average yields are weighted based on the amortized cost of each security. The average yield considers the contractual coupon, amortization of premiums and accretion of discounts and excludes the effects of any related hedging derivatives.
(2) Includes mortgage-backed securities of U.S. government-sponsored agencies. The Company invests in mortgage- and asset-backed securities, which are typically issued by VIEs through securitization transactions.
(3) Includes corporate, asset-backed and other debt securities.

Debt Securities Held-to-Maturity

The carrying value and fair value of debt securities HTM were as follows:

In millions of dollars	Amortized cost, net[1]	Gross unrealized gains	Gross unrealized losses	Fair value
December 31, 2021				
Debt securities HTM				
Mortgage-backed securities[2]				
U.S. government-sponsored agency guaranteed	**$ 63,885**	**$1,076**	**$ 925**	**$ 64,036**
Non-U.S. residential	**736**	**3**	**—**	**739**
Commercial	**1,070**	**4**	**2**	**1,072**
Total mortgage-backed securities	**$ 65,691**	**$1,083**	**$ 927**	**$ 65,847**
U.S. Treasury securities	**$111,819**	**$ 30**	**$1,632**	**$110,217**
State and municipal[3]	**8,923**	**589**	**12**	**9,500**
Foreign government	**1,651**	**4**	**36**	**1,619**
Asset-backed securities[2]	**28,879**	**8**	**32**	**28,855**
Total debt securities HTM, net	**$216,963**	**$1,714**	**$2,639**	**$216,038**
December 31, 2020				
Debt securities HTM				
Mortgage-backed securities[2]				
U.S. government-sponsored agency guaranteed	$ 49,004	$2,162	$ 15	$ 51,151
Non-U.S. residential	1,124	3	1	1,126
Commercial	825	1	1	825
Total mortgage-backed securities	$ 50,953	$2,166	$ 17	$ 53,102
U.S. Treasury securities[4]	$ 21,293	$ 4	$ 55	$ 21,242
State and municipal	9,185	755	11	9,929
Foreign government	1,931	91	—	2,022
Asset-backed securities[2]	21,581	6	92	21,495
Total debt securities HTM	$104,943	$3,022	$ 175	$107,790

(1) Amortized cost is reported net of ACL of $87 million and $86 million at December 31, 2021 and December 31, 2020, respectively.
(2) The Company invests in mortgage- and asset-backed securities. These securitizations are generally considered VIEs. The Company's maximum exposure to loss from these VIEs is equal to the carrying amount of the securities, which is reflected in the table above. For mortgage- and asset-backed securitizations in which the Company has other involvement, see Note 21 to the Consolidated Financial Statements.
(3) In February 2021, the Company transferred $237 million of state and municipal bonds from AFS classification to HTM classification in accordance with ASC 320. At the time of transfer, the securities were in an unrealized gain position of $14 million. The gain amounts will remain in *AOCI* and will be amortized over the remaining life of the securities.
(4) In August 2020, Citibank transferred $13.1 billion of investments in U.S. Treasury securities from AFS classification to HTM classification in accordance with ASC 320. At the time of transfer, the securities were in an unrealized gain position of $144 million. The gain amounts will remain in *AOCI* and will be amortized over the remaining life of the securities.

The Company has the positive intent and ability to hold these securities to maturity or, where applicable, until the exercise of any issuer call option, absent any unforeseen significant changes in circumstances, including deterioration in credit or changes in regulatory capital requirements.

The net unrealized losses classified in *AOCI* for HTM debt securities primarily relate to debt securities previously classified as AFS that were transferred to HTM, and include any cumulative fair value hedge adjustments. The net unrealized loss amount also includes any non-credit-related changes in fair value of HTM debt securities that have suffered credit impairment recorded in earnings. The *AOCI* balance related to HTM debt securities is amortized as an adjustment of yield, in a manner consistent with the accretion of any difference between the carrying value at the transfer date and par value of the same debt securities.

The following table presents the carrying value and fair value of HTM debt securities by contractual maturity dates:

	December 31,				
	2021			2020	
In millions of dollars	**Amortized cost[1]**	**Fair value**	**Weighted average yield[2]**	Amortized cost[1]	Fair value
Mortgage-backed securities					
Due within 1 year	**$ 152**	**$ 151**	**1.70%**	$ 81	$ 81
After 1 but within 5 years	**684**	**725**	**3.01**	463	477
After 5 but within 10 years	**1,655**	**1,739**	**2.74**	1,699	1,873
After 10 years	**63,200**	**63,232**	**2.55**	48,710	50,671
Total	**$ 65,691**	**$ 65,847**	**2.56%**	$ 50,953	$ 53,102
U.S. Treasury securities					
After 1 but within 5 years	**$ 65,498**	**$ 64,516**	**0.69%**	$ 18,955	$ 19,127
After 5 but within 10 years	**46,321**	**45,701**	**1.15**	2,338	2,115
After 10 years	**—**	**—**	**—**	—	—
Total	**$111,819**	**$110,217**	**0.88%**	$ 21,293	$ 21,242
State and municipal					
Due within 1 year	**$ 51**	**$ 50**	**3.82%**	$ 6	$ 6
After 1 but within 5 years	**166**	**170**	**2.82**	139	142
After 5 but within 10 years	**908**	**951**	**3.23**	818	869
After 10 years	**7,798**	**8,329**	**2.65**	8,222	8,912
Total	**$ 8,923**	**$ 9,500**	**2.72%**	$ 9,185	$ 9,929
Foreign government					
Due within 1 year	**$ 292**	**$ 291**	**7.86%**	$ 361	$ 360
After 1 but within 5 years	**1,359**	**1,328**	**6.30**	1,570	1,662
After 5 but within 10 years	**—**	**—**	**—**	—	—
After 10 years	**—**	**—**	**—**	—	—
Total	**$ 1,651**	**$ 1,619**	**6.58%**	$ 1,931	$ 2,022
All other[3]					
Due within 1 year	**$ —**	**$ —**	**—%**	$ —	$ —
After 1 but within 5 years	**—**	**—**	**—**	—	—
After 5 but within 10 years	**11,520**	**11,515**	**2.78**	11,795	15,020
After 10 years	**17,359**	**17,340**	**1.34**	9,786	6,475
Total	**$ 28,879**	**$ 28,855**	**1.92%**	$ 21,581	$ 21,495
Total debt securities HTM	**$216,963**	**$216,038**	**1.65%**	$104,943	$107,790

(1) Amortized cost is reported net of ACL of $87 million and $86 million at December 31, 2021 and December 30, 2020, respectively.
(2) Weighted average yields are weighted based on the amortized cost of each security. The average yield considers the contractual coupon, amortization of premiums and accretion of discounts and excludes the effects of any related hedging derivatives.
(3) Includes corporate and asset-backed securities.

HTM Debt Securities Delinquency and Non-Accrual Details

Citi did not have any HTM debt securities that were delinquent or on non-accrual status at December 31, 2021 and 2020.

There were no purchased credit-deteriorated HTM debt securities held by the Company as of December 31, 2021 and 2020.

Evaluating Investments for Impairment

AFS Debt Securities

Overview—AFS Debt Securities

The Company conducts periodic reviews of all AFS debt securities with unrealized losses to evaluate whether the impairment resulted from expected credit losses or from other factors and to evaluate the Company's intent to sell such securities.

An AFS debt security is impaired when the current fair value of an individual AFS debt security is less than its amortized cost basis.

The Company recognizes the entire difference between amortized cost basis and fair value in earnings for impaired AFS debt securities that Citi has an intent to sell or for which Citi believes it will more-likely-than-not be required to sell prior to recovery of the amortized cost basis. However, for those AFS debt securities that the Company does not intend to sell and is not likely to be required to sell, only the credit-related impairment is recognized in earnings by recording an allowance for credit losses. Any remaining fair value decline for such securities is recorded in *AOCI*. The Company does not consider the length of time that the fair value of a security is below its amortized cost when determining if a credit loss exists.

For AFS debt securities, credit losses exist where Citi does not expect to receive contractual principal and interest cash flows sufficient to recover the entire amortized cost basis of a security. The allowance for credit losses is limited to the amount by which the AFS debt security's amortized cost basis exceeds its fair value. The allowance is increased or decreased if credit conditions subsequently worsen or improve. Reversals of credit losses are recognized in earnings.

The Company's review for impairment of AFS debt securities generally entails:

- identification and evaluation of impaired investments;
- consideration of evidential matter, including an evaluation of factors or triggers that could cause individual positions to qualify as credit impaired and those that would not support credit impairment; and
- documentation of the results of these analyses, as required under business policies.

The sections below describe the Company's process for identifying expected credit impairments for debt security types that have the most significant unrealized losses as of December 31, 2021.

Mortgage-Backed Securities

Citi records no allowances for credit losses on U.S. government-agency-guaranteed mortgage-backed securities, because the Company expects to incur no credit losses in the event of default due to a history of incurring no credit losses and due to the nature of the counterparties.

State and Municipal Securities

The process for estimating credit losses in Citigroup's AFS state and municipal bonds is primarily based on a credit analysis that incorporates third-party credit ratings. Citi monitors the bond issuers and any insurers providing default protection in the form of financial guarantee insurance. The average external credit rating, disregarding any insurance, is Aa2/AA. In the event of an external rating downgrade or other indicator of credit impairment (i.e., based on instrument-specific estimates of cash flows or probability of issuer default), the subject bond is specifically reviewed for adverse changes in the amount or timing of expected contractual principal and interest payments.

For AFS state and municipal bonds with unrealized losses that Citi plans to sell or would more-likely-than-not be required to sell, the full impairment is recognized in earnings. For AFS state and municipal bonds where Citi has no intent to sell and it is more-likely-than-not that the Company will not be required to sell, Citi records an allowance for expected credit losses for the amount it expects not to collect, capped at the difference between the bond's amortized cost basis and fair value.

Equity Method Investments

Management assesses equity method investments that have fair values that are less than their respective carrying values for other-than-temporary impairment (OTTI). Fair value is measured as price multiplied by quantity if the investee has publicly listed securities. If the investee is not publicly listed, other methods are used (see Note 24 to the Consolidated Financial Statements).

For impaired equity method investments that Citi plans to sell prior to recovery of value or would more-likely-than-not be required to sell, with no expectation that the fair value will recover prior to the expected sale date, the full impairment is recognized as OTTI in *Other revenue* regardless of severity and duration. The measurement of the OTTI does not include partial projected recoveries subsequent to the balance sheet date.

For impaired equity method investments that management does not plan to sell and is not more-likely-than-not to be required to sell prior to recovery of value, the evaluation of whether an impairment is other-than-temporary is based on (i) whether and when an equity method investment will recover in value and (ii) whether the investor has the intent and ability to hold that investment for a period of time sufficient to recover the value. The determination of whether the impairment is considered other-than-temporary considers the following indicators:

- the cause of the impairment and the financial condition and near-term prospects of the issuer, including any specific events that may influence the operations of the issuer;
- the intent and ability to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value; and
- the length of time and extent to which fair value has been less than the carrying value.

Recognition and Measurement of Impairment

The following tables present total impairment on *Investments* recognized in earnings:

In millions of dollars	Year ended December 31, 2021 AFS	Other assets	Total
Impairment losses related to debt securities that the Company does not intend to sell nor will likely be required to sell:			
Total impairment losses recognized during the period	$ —	$—	$ —
Less: portion of impairment loss recognized in *AOCI* (before taxes)	—	—	—
Net impairment losses recognized in earnings for debt securities that the Company does not intend to sell nor will likely be required to sell	$ —	$—	$ —
Impairment losses recognized in earnings for debt securities that the Company intends to sell, would more-likely-than-not be required to sell or will be subject to an issuer call deemed probable of exercise	181	—	181
Total impairment losses recognized in earnings	**$181**	**$—**	**$181**

In millions of dollars	Year ended December 31, 2020 AFS	HTM	Other assets	Total
Impairment losses related to debt securities that the Company does not intend to sell nor will likely be required to sell:				
Total impairment losses recognized during the period	$ —	$—	$—	$ —
Less: portion of impairment loss recognized in *AOCI* (before taxes)	—	—	—	—
Net impairment losses recognized in earnings for debt securities that the Company does not intend to sell nor will likely be required to sell	$ —	$—	$—	$ —
Impairment losses recognized in earnings for debt securities that the Company intends to sell, would more-likely-than-not be required to sell or will be subject to an issuer call deemed probable of exercise	109	—	—	109
Total impairment losses recognized in earnings	$109	$—	$—	$109

In millions of dollars	Year ended December 31, 2019 AFS	HTM	Other assets	Total
Impairment losses related to debt securities that the Company does not intend to sell nor will likely be required to sell:				
Total impairment losses recognized during the period	$ 1	$—	$ 1	$ 2
Less: portion of impairment loss recognized in *AOCI* (before taxes)	—	—	—	—
Net impairment losses recognized in earnings for debt securities that the Company does not intend to sell nor will likely be required to sell	$ 1	$—	$ 1	$ 2
Impairment losses recognized in earnings for debt securities that the Company intends to sell, would more-likely-than-not be required to sell or will be subject to an issuer call deemed probable of exercise	20	—	1	21
Total impairment losses recognized in earnings	$21	$—	$ 2	$23

The following presents the credit-related impairments recognized in earnings for AFS securities held that the Company does not intend to sell nor will likely be required to sell at December 31, 2021 and 2020:

Allowance for Credit Losses on AFS Debt Securities

In millions of dollars	Year ended December 31, 2021					
	Mortgage-backed	**U.S. Treasury and federal agency**	**State and municipal**	**Foreign government**	**Corporate**	**Total AFS**
Allowance for credit losses at beginning of year	**$—**	**$—**	**$—**	**$—**	**$ 5**	**$ 5**
Gross write-offs	—	—	—	—	—	—
Gross recoveries	—	—	—	—	—	—
Net credit losses (NCLs)	**$—**	**$—**	**$—**	**$—**	**$—**	**$—**
NCLs	$—	$—	$—	$—	$—	$—
Credit losses on securities without previous credit losses	—	—	—	—	3	3
Net reserve builds (releases) on securities with previous credit losses	—	—	—	—	—	—
Total provision for credit losses	**$—**	**$—**	**$—**	**$—**	**$ 3**	**$ 3**
Initial allowance on newly purchased credit-deteriorated securities during the year	—	—	—	—	—	—
Allowance for credit losses at end of year	**$—**	**$—**	**$—**	**$—**	**$ 8**	**$ 8**

In millions of dollars	Year ended December 31, 2020					
	Mortgage-backed	U.S. Treasury and federal agency	State and municipal	Foreign government	Corporate	Total AFS
Allowance for credit losses at beginning of year	$—	$—	$—	$—	$—	$—
Gross write-offs	—	—	—	—	—	—
Gross recoveries	—	—	—	—	2	2
Net credit losses (NCLs)	$—	$—	$—	$—	$ 2	$ 2
NCLs	$—	$—	$—	$—	$ (2)	$ (2)
Credit losses on securities without previous credit losses	—	—	—	3	5	8
Net reserve builds (releases) on securities with previous credit losses	—	—	—	(3)	—	(3)
Total provision for credit losses	$—	$—	$—	$—	$ 3	$ 3
Initial allowance on newly purchased credit-deteriorated securities during the year	—	—	—	—	—	—
Allowance for credit losses at end of year	$—	$—	$—	$—	$ 5	$ 5

Non-Marketable Equity Securities Not Carried at Fair Value

Non-marketable equity securities are required to be measured at fair value with changes in fair value recognized in earnings unless (i) the measurement alternative is elected or (ii) the investment represents Federal Reserve Bank and Federal Home Loan Bank stock or certain exchange seats that continue to be carried at cost.

The election to measure a non-marketable equity security using the measurement alternative is made on an instrument-by-instrument basis. Under the measurement alternative, an equity security is carried at cost plus or minus changes resulting from observable prices in orderly transactions for the identical or a similar investment of the same issuer. The carrying value of the equity security is adjusted to fair value on the date of an observed transaction. Fair value may differ from the observed transaction price due to a number of factors, including marketability adjustments and differences in rights and obligations when the observed transaction is not for the identical investment held by Citi.

Equity securities under the measurement alternative are also assessed for impairment. On a quarterly basis, management qualitatively assesses whether each equity security under the measurement alternative is impaired. Impairment indicators that are considered include, but are not limited to, the following:

- a significant deterioration in the earnings performance, credit rating, asset quality or business prospects of the investee;
- a significant adverse change in the regulatory, economic or technological environment of the investee;
- a significant adverse change in the general market condition of either the geographical area or the industry in which the investee operates;
- a bona fide offer to purchase, an offer by the investee to sell or a completed auction process for the same or similar investment for an amount less than the carrying amount of that investment; and
- factors that raise significant concerns about the investee's ability to continue as a going concern, such as negative cash flows from operations, working capital deficiencies or noncompliance with statutory capital requirements or debt covenants.

When the qualitative assessment indicates that impairment exists, the investment is written down to fair value, with the full difference between the fair value of the investment and its carrying amount recognized in earnings.

Below is the carrying value of non-marketable equity securities measured using the measurement alternative at December 31, 2021 and 2020:

In millions of dollars	**December 31, 2021**	December 31, 2020
Measurement alternative:		
Carrying value	**$1,413**	$962

Below are amounts recognized in earnings and life-to-date amounts for non-marketable equity securities measured using the measurement alternative:

	Years ended December 31,	
In millions of dollars	**2021**	2020
Measurement alternative[1]:		
Impairment losses	**$ 25**	$ 56
Downward changes for observable prices	**—**	19
Upward changes for observable prices	**406**	144

(1) See Note 24 to the Consolidated Financial Statements for additional information on these nonrecurring fair value measurements.

In millions of dollars	**Life-to-date amounts on securities still held December 31, 2021**
Measurement alternative:	
Impairment losses	**$ 87**
Downward changes for observable prices	**3**
Upward changes for observable prices	**699**

A similar impairment analysis is performed for non-marketable equity securities carried at cost. For the years ended December 31, 2021 and 2020, there was no impairment loss recognized in earnings for non-marketable equity securities carried at cost.

Investments in Alternative Investment Funds That Calculate Net Asset Value

The Company holds investments in certain alternative investment funds that calculate net asset value (NAV), or its equivalent, including private equity funds, funds of funds and real estate funds, as provided by third-party asset managers. Investments in such funds are generally classified as non-marketable equity securities carried at fair value. The fair values of these investments are estimated using the NAV of the Company's ownership interest in the funds. Some of these investments are in "covered funds" for purposes of the Volcker Rule, which prohibits certain proprietary investment activities and limits the ownership of, and relationships with, covered funds. On April 21, 2017, Citi's request for extension of the permitted holding period under the Volcker Rule for certain of its investments in illiquid funds was approved, allowing the Company to hold such investments until the earlier of five years from the July 21, 2017 expiration date of the general conformance period or the date such investments mature or are otherwise conformed with the Volcker Rule.

	Fair value		Unfunded commitments		Redemption frequency (if currently eligible) monthly, quarterly, annually	Redemption notice period
In millions of dollars	**December 31, 2021**	December 31, 2020	**December 31, 2021**	December 31, 2020		
Private equity funds[1][2]	**$123**	$123	**$60**	$62	—	—
Real estate funds[2][3]	**2**	9	**1**	20	—	—
Mutual/collective investment funds	**20**	20	**—**	—		
Total	**$145**	$152	**$61**	$82	—	—

(1) Private equity funds include funds that invest in infrastructure, emerging markets and venture capital.
(2) With respect to the Company's investments in private equity funds and real estate funds, distributions from each fund will be received as the underlying assets held by these funds are liquidated. It is estimated that the underlying assets of these funds will be liquidated over a period of several years as market conditions allow. Private equity and real estate funds do not allow redemption of investments by their investors. Investors are permitted to sell or transfer their investments, subject to the approval of the general partner or investment manager of these funds, which generally may not be unreasonably withheld.
(3) Includes several real estate funds that invest primarily in commercial real estate in the U.S., Europe and Asia.

14. LOANS

Citigroup loans are reported in two categories: consumer and corporate. These categories are classified primarily according to the operating segment and business that manage the loans.

Consumer Loans

Consumer loans represent loans and leases managed primarily by *GCB* and *Corporate/Other*.

Citigroup has established a risk management process to monitor, evaluate and manage the principal risks associated with its consumer loan portfolio. Credit quality indicators that are actively monitored include delinquency status, consumer credit scores under Fair Isaac Corporation (FICO) and loan to value (LTV) ratios, each as discussed in more detail below.

Delinquency Status

Delinquency status is monitored and considered a key indicator of credit quality of consumer loans. Principally, the U.S. residential first mortgage loans use the Mortgage Bankers Association (MBA) method of reporting delinquencies, which considers a loan delinquent if a monthly payment has not been received by the end of the day immediately preceding the loan's next due date. All other loans use a method of reporting delinquencies that considers a loan delinquent if a monthly payment has not been received by the close of business on the loan's next due date.

As a general policy, residential first mortgages, home equity loans and installment loans are classified as non-accrual when loan payments are 90 days contractually past due. Credit cards and unsecured revolving loans generally accrue interest until payments are 180 days past due. Home equity loans in regulated bank entities are classified as non-accrual if the related residential first mortgage is 90 days or more past due. Mortgage loans, other than Federal Housing Administration (FHA)-insured loans, are classified as non-accrual within 60 days of notification that the borrower has filed for bankruptcy.

The policy for re-aging modified U.S. consumer loans to current status varies by product. Generally, one of the conditions to qualify for these modifications is that a minimum number of payments (typically ranging from one to three) be made. Upon modification, the loan is re-aged to current status. However, re-aging practices for certain open-ended consumer loans, such as credit cards, are governed by Federal Financial Institutions Examination Council (FFIEC) guidelines. For open-ended consumer loans subject to FFIEC guidelines, one of the conditions for a loan to be re-aged to current status is that at least three consecutive minimum monthly payments, or the equivalent amount, must be received. In addition, under FFIEC guidelines, the number of times that such a loan can be re-aged is subject to limitations (generally once in 12 months and twice in five years).

Furthermore, FHA and Department of Veterans Affairs (VA) loans are modified under those respective agencies' guidelines and payments are not always required in order to re-age a modified loan to current.

The following tables provide Citi's consumer loans by type:

Consumer Loans, Delinquencies and Non-Accrual Status at December 31, 2021

In millions of dollars	Total current[1][2]	30–89 days past due[3][4]	≥ 90 days past due[3][4]	Past due government guaranteed[5]	Total loans	Non-accrual loans for which there is no ACLL	Non-accrual loans for which there is an ACLL	Total non-accrual	90 days past due and accruing
In North America offices[6]									
Residential first mortgages[7]	$ 42,894	$ 245	$ 280	$394	$ 43,813	$134	$ 339	$ 473	$ 282
Home equity loans[8][9]	4,899	43	159	—	5,101	63	206	269	—
Credit cards	132,050	947	871	—	133,868	—	—	—	871
Personal, small business and other	3,091	19	10	38	3,158	2	15	17	28
Total	$182,934	$1,254	$1,320	$432	$185,940	$199	$ 560	$ 759	$1,181
In offices outside North America[6]									
Residential mortgages[7]	$ 34,289	$ 159	$ 153	$ —	$ 34,601	$ —	$ 403	$ 403	$ —
Credit cards	17,428	192	188	—	17,808	—	140	140	120
Personal, small business and other	32,662	144	81	—	32,887	—	200	200	22
Total	$ 84,379	$ 495	$ 422	$ —	$ 85,296	$ —	$ 743	$ 743	$ 142
Total Citigroup[10]	$267,313	$1,749	$1,742	$432	$271,236	$199	$1,303	$1,502	$1,323

Consumer Loans, Delinquencies and Non-Accrual Status at December 31, 2020

In millions of dollars	Total current[1][2]	30–89 days past due[3][4]	≥ 90 days past due[3][4]	Past due government guaranteed[5]	Total loans	Non-accrual loans for which there is no ACLL	Non-accrual loans for which there is an ACLL	Total non-accrual	90 days past due and accruing
In North America offices[6]									
Residential first mortgages[7]	$ 46,471	$ 402	$ 381	$524	$ 47,778	$136	$ 509	$ 645	$ 332
Home equity loans[8][9]	6,829	78	221	—	7,128	72	307	379	—
Credit cards	127,827	1,228	1,330	—	130,385	—	—	—	1,330
Personal, small business and other	4,472	27	10	—	4,509	2	33	35	—
Total	$185,599	$1,735	$1,942	$524	$189,800	$210	$ 849	$1,059	$1,662
In offices outside North America[6]									
Residential mortgages[7]	$ 39,557	$ 213	$ 199	$ —	$ 39,969	$ —	$ 486	$ 486	$ —
Credit cards	21,718	429	545	—	22,692	—	384	384	324
Personal, small business and other	35,925	319	134	—	36,378	—	212	212	52
Total	$ 97,200	$ 961	$ 878	$ —	$ 99,039	$ —	$1,082	$1,082	$ 376
Total Citigroup[10]	$282,799	$2,696	$2,820	$524	$288,839	$210	$1,931	$2,141	$2,038

(1) Loans less than 30 days past due are presented as current.
(2) Includes $12 million and $14 million at December 31, 2021 and 2020, respectively, of residential first mortgages recorded at fair value.
(3) Excludes loans guaranteed by U.S. government-sponsored agencies.
(4) Loans modified under Citi's consumer relief programs continue to be reported in the same delinquency bucket they were in at the time of modification. Most modified loans in North America would not be reported as 30–89 or 90+ days past due for the duration of the programs (which have various durations, and certain of which may be renewed by the customer). Consumer relief programs in Asia and Mexico largely expired during the fourth quarter of 2020 and began to age at that time.
(5) Consists of loans that are guaranteed by U.S. government-sponsored agencies that are 30–89 days past due of $0.1 billion and $0.2 billion and 90 days or more past due of $0.3 billion and $0.3 billion at December 31, 2021 and 2020, respectively.
(6) North America includes the U.S., Canada and Puerto Rico. Mexico is included in offices outside North America.
(7) Includes approximately $0.1 billion and $0.1 billion at December 31, 2021 and 2020, respectively, of residential first mortgage loans in process of foreclosure.
(8) Includes approximately $0.1 billion and $0.1 billion at December 31, 2021 and 2020, respectively, of home equity loans in process of foreclosure.
(9) Fixed-rate home equity loans and loans extended under home equity lines of credit, which are typically in junior lien positions.
(10) Consumer loans are net of unearned income of $659 million and $749 million at December 31, 2021 and 2020, respectively. Unearned income on consumer loans primarily represents unamortized origination fees and costs, premiums and discounts.

Interest Income Recognized for Non-Accrual Consumer Loans

In millions of dollars	For the years ended December 31, 2021	December 31, 2020
In North America offices[1]		
Residential first mortgages	**$13**	$15
Home equity loans	**7**	8
Credit cards	**—**	—
Personal, small business and other	**—**	—
Total	**$20**	$23
In offices outside North America[1]		
Residential mortgages	**$ 1**	$—
Credit cards	**—**	—
Personal, small business and other	**—**	—
Total	**$ 1**	$—
Total Citigroup	**$21**	$23

(1) North America includes the U.S., Canada and Puerto Rico. Mexico is included in offices outside North America.

During the years ended December 31, 2021 and 2020, the Company sold and/or reclassified to HFS $1,473 million and $414 million of consumer loans, respectively. Loans of businesses that are HFS are not included in the above. For additional information, see Note 2 to the Consolidated Financial Statements.

Consumer Credit Scores (FICO)

In the U.S., independent credit agencies rate an individual's risk for assuming debt based on the individual's credit history and assign every consumer a Fair Isaac Corporation (FICO) credit score. These scores are continually updated by the agencies based upon an individual's credit actions (e.g., taking out a loan or missed or late payments).

The following tables provide details on the FICO scores for Citi's U.S. consumer loan portfolio based on end-of-period receivables by year of origination. FICO scores are updated monthly for substantially all of the portfolio or, otherwise, on a quarterly basis for the remaining portfolio.

FICO score distribution in U.S. portfolio[1][2]	December 31, 2021				
In millions of dollars	Less than 680	680 to 760	Greater than 760	FICO not available	Total loans
Residential first mortgages					
2021	$ 201	$ 3,415	$ 7,363		
2020	200	2,732	7,339		
2019	140	1,178	3,082		
2018	196	431	747		
2017	240	625	1,143		
Prior	1,507	3,817	7,903		
Total residential first mortgages	$ 2,484	$12,198	$27,577	$1,554	$ 43,813
Home equity loans (pre-reset)	$ 222	$ 836	$ 1,309		
Home equity loans (post-reset)	609	989	1,095		
Total home equity loans	$ 831	$ 1,825	$ 2,404	$ 41	$ 5,101
Credit cards[3]	$23,115	$52,907	$55,137	$2,192	$133,351
Personal, small business and other					
2021	$ 59	$ 201	$ 319		
2020	22	41	64		
2019	42	53	68		
2018	34	35	37		
2017	7	8	9		
Prior	120	179	143		
Total personal, small business and other	$ 284	$ 517	$ 640	$1,717	$ 3,158
Total	$26,714	$67,447	$85,758	$5,504	$185,423

See footnotes on next page.

FICO score distribution in U.S. portfolio[1][2]

In millions of dollars	December 31, 2020 Less than 680	680 to 760	Greater than 760	FICO not available	Total loans
Residential first mortgages					
2020	$ 187	$ 3,741	$ 9,052		
2019	150	1,857	5,384		
2018	246	655	1,227		
2017	298	846	1,829		
2016	323	1,368	3,799		
Prior	1,708	4,133	9,105		
Total residential first mortgages	$ 2,912	$12,600	$30,396	$1,870	$ 47,778
Home equity loans (pre-reset)	$ 292	$ 1,014	$ 1,657		
Home equity loans (post-reset)	1,055	1,569	1,524		
Total home equity loans	$ 1,347	$ 2,583	$ 3,181	$ 17	$ 7,128
Credit cards[3]	$26,227	$52,778	$49,767	$1,041	$129,813
Personal, small business and other					
2020	$ 23	$ 58	$ 95		
2019	79	106	134		
2018	82	80	84		
2017	26	27	30		
2016	10	9	8		
Prior	214	393	529		
Total personal, small business and other	$ 434	$ 673	$ 880	$2,522	$ 4,509
Total	$30,920	$68,634	$84,224	$5,450	$189,228

(1) The FICO bands in the tables are consistent with general industry peer presentations.
(2) FICO scores are updated on either a monthly or quarterly basis. For updates that are made only quarterly, certain current-period loans by year of origination are greater than those disclosed in the prior periods. Loans that did not have FICO scores as of the prior period have been updated with FICO scores as they become available.
(3) Excludes $517 million and $572 million of balances related to Canada for December 31, 2021 and December 31, 2020, respectively.

Loan to Value (LTV) Ratios

LTV ratios (loan balance divided by appraised value) are calculated at origination and updated by applying market price data.

The following tables provide details on the LTV ratios for Citi's U.S. consumer mortgage portfolios by year of origination. LTV ratios are updated monthly using the most recent Core Logic Home Price Index data available for substantially all of the portfolio applied at the Metropolitan Statistical Area level, if available, or the state level if not. The remainder of the portfolio is updated in a similar manner using the Federal Housing Finance Agency indices.

LTV distribution in U.S. portfolio	**December 31, 2021**				
In millions of dollars	**Less than or equal to 80%**	**> 80% but less than or equal to 100%**	**Greater than 100%**	**LTV not available**	**Total**
Residential first mortgages					
2021	**$10,515**	**$ 474**	**$ 1**		
2020	**10,206**	**75**	**—**		
2019	**4,372**	**35**	**1**		
2018	**1,300**	**74**	**5**		
2017	**1,986**	**27**	**2**		
Prior	**13,271**	**34**	**8**		
Total residential first mortgages	**$41,650**	**$ 719**	**$ 17**	**$1,427**	**$43,813**
Home equity loans (pre-reset)	**$ 2,315**	**$ 26**	**$ 9**		
Home equity loans (post-reset)	**2,608**	**48**	**25**		
Total home equity loans	**$ 4,923**	**$ 74**	**$ 34**	**$ 70**	**$ 5,101**
Total	**$46,573**	**$ 793**	**$ 51**	**$1,497**	**$48,914**

LTV distribution in U.S. portfolio	December 31, 2020				
In millions of dollars	Less than or equal to 80%	> 80% but less than or equal to 100%	Greater than 100%	LTV not available	Total
Residential first mortgages					
2020	$11,447	$1,543	$ —		
2019	7,029	376	2		
2018	1,617	507	11		
2017	2,711	269	4		
2016	5,423	84	2		
Prior	14,966	66	16		
Total residential first mortgages	$43,193	$2,845	$ 35	$1,705	$47,778
Home equity loans (pre-reset)	$ 2,876	$ 50	$ 16		
Home equity loans (post-reset)	3,782	290	58		
Total home equity loans	$ 6,658	$ 340	$ 74	$ 56	$ 7,128
Total	$49,851	$3,185	$109	$1,761	$54,906

Impaired Consumer Loans

A loan is considered impaired when Citi believes it is probable that all amounts due according to the original contractual terms of the loan will not be collected. Impaired consumer loans include non-accrual loans, as well as smaller-balance homogeneous loans whose terms have been modified due to the borrower's financial difficulties and where Citi has granted a concession to the borrower. These modifications may include interest rate reductions and/or principal forgiveness. Impaired consumer loans exclude smaller-balance homogeneous loans that have not been modified and are carried on a non-accrual basis.

The following tables present information about impaired consumer loans and interest income recognized on impaired consumer loans:

	At and for the year ended December 31, 2021				
In millions of dollars	**Recorded investment[1][2]**	**Unpaid principal balance**	**Related specific allowance[3][4]**	**Average carrying value[5]**	**Interest income recognized[6]**
Mortgage and real estate					
Residential first mortgages	**$1,457**	**$1,531**	**$ 87**	**$1,548**	**$ 87**
Home equity loans	**188**	**342**	**(1)**	**335**	**9**
Credit cards	**1,582**	**1,609**	**594**	**1,795**	**116**
Personal, small business and other	**454**	**461**	**120**	**505**	**52**
Total	**$3,681**	**$3,943**	**$800**	**$4,183**	**$264**

	At and for the year ended December 31, 2020				
In millions of dollars	Recorded investment[1][2]	Unpaid principal balance	Related specific allowance[3]	Average carrying value[5]	Interest income recognized[6]
Mortgage and real estate					
Residential first mortgages	$1,787	$1,962	$ 157	$1,661	$ 68
Home equity loans	478	651	60	527	13
Credit cards	1,982	2,135	918	1,926	106
Personal, small business and other	552	552	210	463	63
Total	$4,799	$5,300	$1,345	$4,577	$250

(1) Recorded investment in a loan includes net deferred loan fees and costs, unamortized premium or discount and direct write-downs and includes accrued interest only on credit card loans.
(2) For December 31, 2021, $190 million of residential first mortgages and $94 million of home equity loans do not have a specific allowance. For December 31, 2020, $21.1 million of residential first mortgages and $147 million of home equity loans do not have a specific allowance.
(3) Included in the *Allowance for credit losses on loans.*
(4) The negative allowance on home equity loans resulted from expected recoveries on previously written-off accounts.
(5) Average carrying value represents the average recorded investment ending balance for the last four quarters and does not include the related specific allowance.
(6) Includes amounts recognized on both an accrual and cash basis.

Consumer Troubled Debt Restructurings[1]

In millions of dollars, except number of loans modified	For the year ended December 31, 2021[1] Number of loans modified	Post-modification recorded investment[2][3]	Deferred principal[4]	Contingent principal forgiveness[5]	Principal forgiveness[6]	Average interest rate reduction
North America						
Residential first mortgages	**1,333**	**$ 227**	**$—**	**$—**	**$—**	**1%**
Home equity loans	**187**	**12**	**—**	**—**	**—**	**1**
Credit cards	**165,098**	**794**	**—**	**—**	**—**	**18**
Personal, small business and other	**1,000**	**13**	**—**	**—**	**—**	**3**
Total[7]	**167,618**	**$1,046**	**$—**	**$—**	**$—**	
International						
Residential mortgages	**1,975**	**$ 86**	**$—**	**$—**	**$—**	**—%**
Credit cards	**74,202**	**339**	**—**	**—**	**13**	**13**
Personal, small business and other	**28,206**	**201**	**—**	**—**	**7**	**10**
Total[7]	**104,383**	**$ 626**	**$—**	**$—**	**$20**	

In millions of dollars, except number of loans modified	For the year ended December 31, 2020[1] Number of loans modified	Post-modification recorded investment[2][8]	Deferred principal[4]	Contingent principal forgiveness[5]	Principal forgiveness[6]	Average interest rate reduction
North America						
Residential first mortgages	1,225	$ 209	$—	$—	$—	—%
Home equity loans	296	27	—	—	—	1
Credit cards	215,466	1,038	—	—	—	17
Personal, small business and other	2,452	28	—	—	—	5
Total[7]	219,439	$1,302	$—	$—	$—	
International						
Residential mortgages	2,542	$ 141	$ 3	$—	$—	2%
Credit cards	90,694	401	—	—	12	15
Personal, small business and other	41,079	301	—	—	8	10
Total[7]	134,315	$ 843	$ 3	$—	$20	

(1) The above tables do not include loan modifications that meet the TDR relief criteria in the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) or the interagency guidance.
(2) Post-modification balances include past-due amounts that are capitalized at the modification date.
(3) Post-modification balances in *North America* include $15 million of residential first mortgages to borrowers who have gone through Chapter 7 bankruptcy in the year ended December 31, 2021. These amounts include $5 million of residential first mortgages that were newly classified as TDRs during 2021, based on previously received OCC guidance.
(4) Represents the portion of contractual loan principal that is non-interest bearing, but still due from the borrower. Such deferred principal is charged off at the time of permanent modification to the extent that the related loan balance exceeds the underlying collateral value.
(5) Represents the portion of contractual loan principal that is non-interest bearing and, depending upon borrower performance, eligible for forgiveness.
(6) Represents the portion of contractual loan principal that was forgiven at the time of permanent modification.
(7) The above tables reflect activity for restructured loans that were considered TDRs during the year.
(8) Post-modification balances in *North America* include $13 million of residential first mortgages to borrowers who have gone through Chapter 7 bankruptcy in the year ended December 31, 2020. These amounts include $9 million of residential first mortgages that were newly classified as TDRs during 2020, based on previously received OCC guidance.

The following table presents consumer TDRs that defaulted for which the payment default occurred within one year of a permanent modification. Default is defined as 60 days past due.

In millions of dollars	Years ended December 31, 2021	2020
North America		
Residential first mortgages	**$ 57**	$ 71
Home equity loans	**8**	14
Credit cards	**252**	317
Personal, small business and other	**4**	4
Total	**$321**	$406
International		
Residential mortgages	**$ 38**	$ 26
Credit cards	**152**	178
Personal, small business and other	**96**	78
Total	**$286**	$282

Purchased Credit-Deteriorated Assets

	Years ended December 31,					
	2021			2020		
In millions of dollars	**Credit cards**	**Mortgages[1]**	**Installment and other**	Credit cards	Mortgages[1]	Installment and other
Purchase price	**$—**	**$23**	**$—**	$ 4	$49	$—
Allowance for credit losses at acquisition date	**—**	**—**	**—**	4	—	—
Discount or premium attributable to non-credit factors	**—**	**—**	**—**	—	—	—
Par value (amortized cost basis)	**$—**	**$23**	**$—**	$ 8	$49	$—

(1) Includes loans sold to agencies that were bought back at par due to repurchase agreements.

Corporate Loans

Corporate loans represent loans and leases managed by *ICG*. The following table presents information by corporate loan type:

In millions of dollars	**December 31, 2021**	December 31, 2020
In North America offices[1]		
Commercial and industrial	**$ 51,999**	$ 57,731
Financial institutions	**66,936**	55,809
Mortgage and real estate[2]	**63,357**	60,675
Installment and other	**29,143**	26,744
Lease financing	**413**	673
Total	**$211,848**	$201,632
In offices outside North America[1]		
Commercial and industrial	**$103,167**	$104,072
Financial institutions	**32,203**	32,334
Mortgage and real estate[2]	**10,412**	11,371
Installment and other	**34,436**	33,759
Lease financing	**42**	65
Governments and official institutions	**4,423**	3,811
Total	**$184,683**	$185,412
Corporate loans, net of unearned income[3]	**$396,531**	$387,044

(1) North America includes the U.S., Canada and Puerto Rico. Mexico is included in offices outside North America. The classification between offices in North America and outside North America is based on the domicile of the booking unit. The difference between the domicile of the booking unit and the domicile of the managing unit is not material.
(2) Loans secured primarily by real estate.
(3) Corporate loans are net of unearned income of ($799) million and ($844) million at December 31, 2021 and 2020, respectively. Unearned income on corporate loans primarily represents interest received in advance, but not yet earned, on loans originated on a discounted basis.

The Company sold and/or reclassified to held-for-sale $5.9 billion and $2.2 billion of corporate loans during the years ended December 31, 2021 and 2020, respectively. The Company did not have significant purchases of corporate loans classified as held-for-investment for the years ended December 31, 2021 or 2020.

Lease financing

Citi is a lessor in the power, railcars, shipping and aircraft sectors, where the Company has executed operating, direct financing and leveraged leases. Citi's $0.5 billion of lease financing receivables, as of December 31, 2021, is composed of approximately equal balances of direct financing lease receivables and net investments in leveraged leases. Citi uses the interest rate implicit in the lease to determine the present value of its lease financing receivables. Interest income on direct financing and leveraged leases during the year ended December 31, 2021 was not material.

The Company's leases have an average remaining maturity of approximately three and a half years. In certain cases, Citi obtains residual value insurance from third parties and/or the lessee to manage the risk associated with the residual value of the leased assets. The receivable related to the residual value of the leased assets is $0.2 billion as of December 31, 2021, while the amount covered by residual value guarantees is nil.

The Company's operating leases, where Citi is a lessor, are not significant to the Consolidated Financial Statements.

Delinquency Status

Citi generally does not manage corporate loans on a delinquency basis. Corporate loans are identified as impaired and placed on a cash (non-accrual) basis when it is determined, based on actual experience and a forward-looking assessment of the collectability of the loan in full, that the payment of interest or principal is doubtful or when interest or principal is 90 days past due, except when the loan is well collateralized and in the process of collection. Any interest accrued on impaired corporate loans and leases is reversed at 90 days and charged against current earnings, and interest is thereafter included in earnings only to the extent actually received in cash. When there is doubt regarding the ultimate collectability of principal, all cash receipts are thereafter applied to reduce the recorded investment in the loan. While corporate loans are generally managed based on their internally assigned risk rating (see further discussion below), the following tables present delinquency information by corporate loan type.

Corporate Loan Delinquencies and Non-Accrual Details at December 31, 2021

In millions of dollars	30–89 days past due and accruing[1]	≥ 90 days past due and accruing[1]	Total past due and accruing	Total non-accrual[2]	Total current[3]	Total loans[4]
Commercial and industrial	$1,100	$249	$1,349	$1,264	$148,459	$151,072
Financial institutions	505	233	738	33	98,172	98,943
Mortgage and real estate	283	1	284	419	73,066	73,769
Lease financing	—	—	—	14	441	455
Other	128	26	154	147	65,921	66,222
Loans at fair value						6,070
Total	$2,016	$509	$2,525	$1,877	$386,059	$396,531

Corporate Loan Delinquencies and Non-Accrual Details at December 31, 2020

In millions of dollars	30–89 days past due and accruing[1]	≥ 90 days past due and accruing[1]	Total past due and accruing	Total non-accrual[2]	Total current[3]	Total loans[4]
Commercial and industrial	$ 400	$109	$ 509	$2,795	$153,036	$156,340
Financial institutions	668	65	733	92	86,864	87,689
Mortgage and real estate	450	247	697	505	70,836	72,038
Lease financing	62	12	74	24	640	738
Other	112	19	131	111	63,157	63,399
Loans at fair value						6,840
Total	$1,692	$452	$2,144	$3,527	$374,533	$387,044

(1) Corporate loans that are 90 days past due are generally classified as non-accrual. Corporate loans are considered past due when principal or interest is contractually due but unpaid.
(2) Non-accrual loans generally include those loans that are 90 days or more past due or those loans for which Citi believes, based on actual experience and a forward-looking assessment of the collectability of the loan in full, that the payment of interest or principal is doubtful.
(3) Loans less than 30 days past due are presented as current.
(4) Total loans include loans at fair value, which are not included in the various delinquency columns.

Citigroup has a risk management process to monitor, evaluate and manage the principal risks associated with its corporate loan portfolio. As part of its risk management process, Citi assigns numeric risk ratings to its corporate loan facilities based on quantitative and qualitative assessments of the obligor and facility. These risk ratings are reviewed at least annually or more often if material events related to the obligor or facility warrant. Factors considered in assigning the risk ratings include financial condition of the obligor, qualitative assessment of management and strategy, amount and sources of repayment, amount and type of collateral and guarantee arrangements, amount and type of any contingencies associated with the obligor and the obligor's industry and geography.

The obligor risk ratings are defined by ranges of default probabilities. The facility risk ratings are defined by ranges of loss norms, which are the product of the probability of default and the loss given default. The investment-grade rating categories are similar to the category BBB-/Baa3 and above as defined by S&P and Moody's. Loans classified according to the bank regulatory definitions as special mention, substandard, doubtful and loss will have risk ratings within the non-investment-grade categories.

Corporate Loans Credit Quality Indicators

	Recorded investment in loans[1]							
	Term loans by year of origination						Revolving line of credit arrangements[2]	December 31, 2021
In millions of dollars	2021	2020	2019	2018	2017	Prior		
Investment grade[3]								
Commercial and industrial[4]	$ 42,730	$ 5,744	$ 4,762	$ 3,825	$ 3,060	$ 8,928	$ 32,894	$101,943
Financial institutions[4]	14,096	1,985	1,290	1,118	599	2,536	67,184	88,808
Mortgage and real estate	4,423	6,013	5,421	3,630	1,801	3,561	1,341	26,190
Other[5]	11,928	3,993	1,392	2,974	524	6,321	32,807	59,939
Total investment grade	$ 73,177	$17,735	$12,865	$11,547	$ 5,984	$21,346	$134,226	$276,880
Non-investment grade[3]								
Accrual								
Commercial and industrial[4]	$ 16,814	$ 2,313	$ 2,466	$ 2,024	$ 1,412	$ 3,987	$ 18,849	$ 47,865
Financial institutions[4]	4,471	399	571	107	74	586	3,894	10,102
Mortgage and real estate	1,819	980	1,842	1,163	640	761	644	7,849
Other[5]	1,517	399	594	384	148	383	3,152	6,577
Non-accrual								
Commercial and industrial[4]	54	119	64	104	94	117	712	1,264
Financial institutions	—	—	—	—	—	—	33	33
Mortgage and real estate	13	10	2	49	10	25	310	419
Other[5]	19	5	19	19	—	90	9	161
Total non-investment grade	$ 24,707	$ 4,225	$ 5,558	$ 3,850	$ 2,378	$ 5,949	$ 27,603	$ 74,270
Non-rated private bank loans managed on a delinquency basis[3][6]	$ 9,984	$ 8,901	$ 5,926	$ 2,895	$ 2,925	$ 8,680	$ —	$ 39,311
Loans at fair value[7]								6,070
Corporate loans, net of unearned income	$107,868	$30,861	$24,349	$18,292	$11,287	$35,975	$161,829	$396,531

In millions of dollars	Recorded investment in loans[1]							
	Term loans by year of origination						Revolving line of credit arrangements[2]	December 31, 2020
	2020	2019	2018	2017	2016	Prior		
Investment grade[3]								
Commercial and industrial[4]	$ 38,398	$ 7,607	$ 5,929	$ 3,909	$ 2,094	$ 8,670	$ 25,819	$ 92,426
Financial institutions[4]	10,560	2,964	2,106	782	681	2,030	56,239	75,362
Mortgage and real estate	6,793	6,714	5,174	2,568	1,212	1,719	1,557	25,737
Other[5]	10,874	3,566	4,597	952	780	5,290	31,696	57,755
Total investment grade	$ 66,625	$20,851	$17,806	$ 8,211	$ 4,767	$17,709	$115,311	$251,280
Non-investment grade[3]								
Accrual								
Commercial and industrial[4]	$ 19,683	$ 4,794	$ 4,645	$ 2,883	$ 1,182	$ 4,533	$ 23,400	$ 61,120
Financial institutions[4]	7,413	700	654	274	141	197	2,855	12,234
Mortgage and real estate	1,882	1,919	2,058	1,457	697	837	551	9,401
Other[5]	1,407	918	725	370	186	657	1,986	6,249
Non-accrual								
Commercial and industrial[4]	260	203	192	143	57	223	1,717	2,795
Financial institutions	1	—	—	—	—	—	91	92
Mortgage and real estate	13	4	3	18	8	32	427	505
Other[5]	15	3	12	29	2	65	9	135
Total non-investment grade	$ 30,674	$ 8,541	$ 8,289	$ 5,174	$ 2,273	$ 6,544	$ 31,036	$ 92,531
Non-rated private bank loans managed on a delinquency basis[3][6]	$ 9,823	$ 7,121	$ 3,533	$ 3,674	$ 4,300	$ 7,942	$ —	$ 36,393
Loans at fair value[7]								6,840
Corporate loans, net of unearned income	$107,122	$36,513	$29,628	$17,059	$11,340	$32,195	$146,347	$387,044

(1) Recorded investment in a loan includes net deferred loan fees and costs, unamortized premium or discount, less any direct write-downs.
(2) There were no significant revolving line of credit arrangements that converted to term loans during the year.
(3) Held-for-investment loans are accounted for on an amortized cost basis.
(4) Includes certain short-term loans with less than one year in tenor.
(5) Other includes installment and other, lease financing and loans to government and official institutions.
(6) Non-rated private bank loans mainly include mortgage and real estate loans to private banking clients.
(7) Loans at fair value include loans to commercial and industrial, financial institutions, mortgage and real estate and other.

Impaired collateral-dependent loans and leases, where repayment is expected to be provided solely by the sale of the underlying collateral with no other available and reliable sources of repayment, are written down to the lower of carrying value or collateral value, less cost to sell. Cash-basis loans are returned to an accrual status when all contractual principal and interest amounts are reasonably assured of repayment and there is a sustained period of repayment performance, generally six months, in accordance with the contractual terms of the loan.

Non-Accrual Corporate Loans

The following tables present non-accrual loan information by corporate loan type and interest income recognized on non-accrual corporate loans:

	At and for the year ended December 31, 2021				
In millions of dollars	**Recorded investment[1]**	**Unpaid principal balance**	**Related specific allowance**	**Average carrying value[2]**	**Interest income recognized[3]**
Non-accrual corporate loans					
Commercial and industrial	**$1,264**	**$1,863**	**$198**	**$1,840**	**$37**
Financial institutions	**33**	**98**	**4**	**40**	**—**
Mortgage and real estate	**419**	**582**	**15**	**448**	**—**
Lease financing	**14**	**14**	**—**	**20**	**—**
Other	**147**	**241**	**8**	**142**	**18**
Total non-accrual corporate loans	**$1,877**	**$2,798**	**$225**	**$2,490**	**$55**

	At and for the year ended December 31, 2020				
In millions of dollars	Recorded investment[1]	Unpaid principal balance	Related specific allowance	Average carrying value[2]	Interest income recognized[3]
Non-accrual corporate loans					
Commercial and industrial	$2,795	$3,664	$442	$2,649	$14
Financial institutions	92	181	17	132	—
Mortgage and real estate	505	803	38	413	—
Lease financing	24	24	—	34	—
Other	111	235	18	174	21
Total non-accrual corporate loans	$3,527	$4,907	$515	$3,402	$35

	December 31, 2021		December 31, 2020	
In millions of dollars	**Recorded investment[1]**	**Related specific allowance**	Recorded investment[1]	Related specific allowance
Non-accrual corporate loans with specific allowances				
Commercial and industrial	**$638**	**$198**	$1,523	$442
Financial institutions	**27**	**4**	90	17
Mortgage and real estate	**294**	**15**	246	38
Lease financing	**—**	**—**	—	—
Other	**37**	**8**	68	18
Total non-accrual corporate loans with specific allowances	**$996**	**$225**	$1,927	$515
Non-accrual corporate loans without specific allowances				
Commercial and industrial	**$626**		$1,272	
Financial institutions	**6**		2	
Mortgage and real estate	**125**		259	
Lease financing	**14**		24	
Other	**110**		43	
Total non-accrual corporate loans without specific allowances	**$881**	**N/A**	$1,600	N/A

(1) Recorded investment in a loan includes net deferred loan fees and costs, unamortized premium or discount, less any direct write-downs.
(2) Average carrying value represents the average recorded investment balance and does not include related specific allowances.
(3) Interest income recognized for the year ended December 31, 2019 was $42 million.
N/A Not applicable

Corporate Troubled Debt Restructurings[1]

For the year ended December 31, 2021

In millions of dollars	**Carrying value of TDRs modified during the year**	**TDRs involving changes in the amount and/or timing of principal payments[2]**	**TDRs involving changes in the amount and/or timing of interest payments[3]**	**TDRs involving changes in the amount and/or timing of both principal and interest payments**
Commercial and industrial	**$ 82**	**$—**	**$—**	**$82**
Mortgage and real estate	**8**	**—**	**—**	**8**
Other	**10**	**1**		**9**
Total	**$100**	**$ 1**	**$—**	**$99**

For the year ended December 31, 2020

In millions of dollars	Carrying value of TDRs modified during the year	TDRs involving changes in the amount and/or timing of principal payments[2]	TDRs involving changes in the amount and/or timing of interest payments[3]	TDRs involving changes in the amount and/or timing of both principal and interest payments
Commercial and industrial	$247	$—	$—	$247
Mortgage and real estate	19	—	—	19
Other	19	6	—	13
Total	$285	$ 6	$—	$279

(1) The above tables do not include loan modifications that meet the TDR relief criteria in the CARES Act or the interagency guidance.
(2) TDRs involving changes in the amount or timing of principal payments may involve principal forgiveness or deferral of periodic and/or final principal payments. Because forgiveness of principal is rare for corporate loans, modifications typically have little to no impact on the loans' projected cash flows and thus little to no impact on the allowance established for the loans. Charge-offs for amounts deemed uncollectible may be recorded at the time of the restructuring or may have already been recorded in prior periods such that no charge-off is required at the time of the modification.
(3) TDRs involving changes in the amount or timing of interest payments may involve a below-market interest rate.

The following table presents total corporate loans modified in a TDR as well as those TDRs that defaulted and for which the payment default occurred within one year of a permanent modification. Default is defined as 60 days past due, except for classifiably managed commercial banking loans, where default is defined as 90 days past due.

In millions of dollars	**TDR balances at December 31, 2021**	**TDR loans that re-defaulted in 2021 within one year of modification**	TDR balances at December 31, 2020	TDR loans that re-defaulted in 2020 within one year of modification
Commercial and industrial	**$236**	**$—**	$325	$—
Financial institutions	**—**	**—**	—	—
Mortgage and real estate	**73**	**—**	92	—
Lease financing	**—**	**—**	—	—
Other	**41**	**—**	33	—
Total[1]	**$350**	**$—**	$450	$—

(1) The above table reflects activity for loans outstanding that were considered TDRs as of the end of the reporting period.

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15. ALLOWANCE FOR CREDIT LOSSES

In millions of dollars	**2021**	2020	2019
Allowance for credit losses on loans (ACLL) at beginning of year	**$24,956**	$12,783	$12,315
Adjustments to opening balance[1]:			
Financial instruments—credit losses (CECL) adoption	**—**	4,201	—
Variable post-charge-off third-party collection costs	**—**	(443)	—
Adjusted ACLL at beginning of year	**$24,956**	$16,541	$12,315
Gross credit losses on loans	**$ (6,720)**	$ (9,263)	$ (9,341)
Gross recoveries on loans	**1,825**	1,652	1,573
Net credit losses on loans (NCLs)	**$ (4,895)**	$ (7,611)	$ (7,768)
Replenishment of NCLs	**$ 4,895**	$ 7,611	$ 7,768
Net reserve builds (releases) for loans	**(7,283)**	7,635	364
Net specific reserve builds (releases) for loans	**(715)**	676	86
Total provision for credit losses on loans (PCLL)	**$ (3,103)**	$15,922	$ 8,218
Initial allowance for credit losses on newly purchased credit-deteriorated assets during the period	**—**	4	—
Other, net (see table below)	**(503)**	100	18
ACLL at end of year	**$16,455**	$24,956	$12,783
Allowance for credit losses on unfunded lending commitments (ACLUC) at beginning of year[2]	**$ 2,655**	$ 1,456	$ 1,367
Adjustment to opening balance for CECL adoption[1]	**—**	(194)	—
Provision (release) for credit losses on unfunded lending commitments	**(788)**	1,446	92
Other, net[3]	**4**	(53)	(3)
ACLUC at end of year[2]	**$ 1,871**	$ 2,655	$ 1,456
Total allowance for credit losses on loans, leases and unfunded lending commitments	**$18,326**	$27,611	$14,239

Other, net details

In millions of dollars	**2021**	2020	2019
Sales or transfers of various consumer loan portfolios to HFS			
Reclass of Australia consumer ACLL to HFS	**$(280)**	$ —	$ —
Reclass of the Philippines consumer ACLL to HFS	**(90)**	—	—
Transfer of real estate loan portfolios	**—**	(4)	(42)
Sales or transfers of various consumer loan portfolios to HFS	**$(370)**	$ (4)	$(42)
FX translation and other	**(133)**	104	60
Other, net	**$(503)**	$100	$ 18

(1) See "Accounting Changes" in Note 1 to the Consolidated Financial Statements for additional details.
(2) Represents additional credit loss reserves for unfunded lending commitments and letters of credit recorded in *Other liabilities* on the Consolidated Balance Sheet.
(3) 2020 includes a non-provision transfer of $68 million, representing reserves on performance guarantees. The reserves on these contracts have been reclassified out of the allowance for credit losses on unfunded lending commitments and into *Other liabilities* on the Consolidated Balance Sheet beginning in 2020.

Allowance for Credit Losses on Loans and End-of-Period Loans at December 31, 2021

In millions of dollars	Corporate	Consumer	Total
ACLL at beginning of year	$ 5,402	$ 19,554	$ 24,956
Gross credit losses on loans	(522)	(6,198)	(6,720)
Gross recoveries on loans	127	1,698	1,825
Replenishment of NCLs	395	4,500	4,895
Net reserve builds (releases)	(2,254)	(5,029)	(7,283)
Net specific reserve builds (releases)	(278)	(437)	(715)
Initial allowance for credit losses on newly purchased credit-deteriorated assets during the year	—	—	—
Other	(31)	(472)	(503)
Ending balance	$ 2,839	$ 13,616	$ 16,455
ACLL			
Collectively evaluated	$ 2,614	$ 12,816	$ 15,430
Individually evaluated	225	800	1,025
Purchased credit deteriorated	—	—	—
Total ACLL	$ 2,839	$ 13,616	$ 16,455
Loans, net of unearned income			
Collectively evaluated	$388,584	$267,424	$656,008
Individually evaluated	1,877	3,681	5,558
Purchased credit deteriorated	—	119	119
Held at fair value	6,070	12	6,082
Total loans, net of unearned income	$396,531	$271,236	$667,767

Allowance for Credit Losses on Loans and End-of-Period Loans at December 31, 2020

In millions of dollars	Corporate	Consumer	Total
ACLL at beginning of year	$ 2,886	$ 9,897	$ 12,783
Adjustments to opening balance:			
Financial instruments—credit losses (CECL)[1]	(721)	4,922	4,201
Variable post-charge-off third-party collection costs[1]	—	(443)	(443)
Adjusted ACLL at beginning of year	$ 2,165	$ 14,376	$ 16,541
Gross credit losses on loans	$ (1,072)	$ (8,191)	$ (9,263)
Gross recoveries on loans	86	1,566	1,652
Replenishment of NCLs	986	6,625	7,611
Net reserve builds (releases)	2,890	4,745	7,635
Net specific reserve builds (releases)	282	394	676
Initial allowance for credit losses on newly purchased credit-deteriorated assets during the year	—	1	1
Other	65	35	100
Ending balance	$ 5,402	$ 19,554	$ 24,956
ACLL			
Collectively evaluated	$ 4,887	$ 18,207	$ 23,094
Individually evaluated	515	1,345	1,860
Purchased credit deteriorated	—	2	2
Total ACLL	$ 5,402	$ 19,554	$ 24,956
Loans, net of unearned income			
Collectively evaluated	$376,677	$283,885	$660,562
Individually evaluated	3,527	4,799	8,326
Purchased credit deteriorated	—	141	141
Held at fair value	6,840	14	6,854
Total loans, net of unearned income	$387,044	$288,839	$675,883

(1) See "Accounting Changes" in Note 1 to the Consolidated Financial Statements for additional details.

Allowance for Credit Losses on Loans at December 31, 2019

In millions of dollars	Corporate	Consumer	Total
ACLL at beginning of year	$2,811	$ 9,504	$12,315
Gross credit losses on loans	(487)	(8,854)	(9,341)
Gross recoveries on loans	95	1,478	1,573
Replenishment of NCLs	392	7,376	7,768
Net reserve builds (releases)	96	268	364
Net specific reserve builds (releases)	(21)	107	86
Other	—	18	18
Ending balance	$2,886	$ 9,897	$12,783

Allowance for Credit Losses on HTM Debt Securities

	Year ended December 31, 2021					
In millions of dollars	Mortgage-backed	State and municipal	Foreign government	Asset-backed	All other debt securities	Total HTM
Allowance for credit losses on HTM debt securities at beginning of year	**$ 3**	**$74**	**$ 6**	**$ 3**	**$—**	**$86**
Gross credit losses	—	—	—	—	—	—
Gross recoveries	3	—	—	—	—	3
Net credit losses (NCLs)	**$ 3**	**$—**	**$—**	**$—**	**$—**	**$ 3**
Replenishment of NCLs	$ (3)	$—	$—	$—	$—	$ (3)
Net reserve builds (releases)	7	1	(2)	(2)	—	4
Net specific reserve builds (releases)	(4)	—	—	—	—	(4)
Total provision for credit losses on HTM debt securities	**$—**	**$ 1**	**$ (2)**	**$ (2)**	**$—**	**$ (3)**
Other, net	$—	$—	$—	$ 1	$—	$ 1
Initial allowance for credit losses on newly purchased credit-deteriorated securities during the year	—	—	—	—	—	—
Allowance for credit losses on HTM debt securities at end of year	**$ 6**	**$75**	**$ 4**	**$ 2**	**$—**	**$87**

Allowance for Credit Losses on HTM Debt Securities

	Year ended December 31, 2020					
In millions of dollars	Mortgage-backed	State and municipal	Foreign government	Asset-backed	All other debt securities	Total HTM
Allowance for credit losses on HTM debt securities at beginning of year	$—	$—	$—	$—	$—	$—
Adjustment to opening balance for CECL adoption	—	61	4	5		70
Gross credit losses	—	—	—	—	—	—
Gross recoveries	—	—	—	—	—	—
Net credit losses (NCLs)	$—	$—	$—	$—	$—	$—
Replenishment of NCLs	$—	$—	$—	$—	$—	$—
Net reserve builds (releases)	(2)	10	(2)	1	—	7
Net specific reserve builds (releases)	—	—	—	—	—	—
Total provision for credit losses on HTM debt securities	$ (2)	$10	$ (2)	$ 1	$—	$ 7
Other, net	$ 5	$ 3	$ 4	$ (3)	$—	$ 9
Initial allowance for credit losses on newly purchased credit-deteriorated securities during the year	—	—	—	—	—	—
Allowance for credit losses on HTM debt securities at end of year	$ 3	$74	$ 6	$ 3	$—	$86

Allowance for Credit Losses on Other Assets

In millions of dollars	Cash and due from banks	Deposits with banks	Securities borrowed and purchased under agreements to resell	Brokerage receivables	All other assets[1]	Total
			Year ended December 31, 2021			
Allowance for credit losses on other assets at beginning of year	**$—**	**$20**	**$10**	**$—**	**$25**	**$55**
Gross credit losses	—	—	—	—	(2)	(2)
Gross recoveries	—	—	—	—	—	—
Net credit losses (NCLs)	**$—**	**$—**	**$—**	**$—**	**$ (2)**	**$ (2)**
Replenishment of NCLs	$—	$—	$—	$—	$ 2	$ 2
Net reserve builds (releases)	—	2	(4)	—	—	(2)
Total provision for credit losses	**$—**	**$ 2**	**$ (4)**	**$—**	**$ 2**	**$—**
Other, net	$—	$ (1)	$—	$—	$ 1	$—
Allowance for credit losses on other assets at end of year	**$—**	**$21**	**$ 6**	**$—**	**$26**	**$53**

(1) Primarily accounts receivable.

Allowance for Credit Losses on Other Assets

In millions of dollars	Cash and due from banks	Deposits with banks	Securities borrowed and purchased under agreements to resell	Brokerage receivables	All other assets[1]	Total
			Year ended December 31, 2020			
Allowance for credit losses on other assets at beginning of year	$—	$—	$—	$—	$—	$—
Adjustment to opening balance for CECL adoption	6	14	2	1	3	26
Gross credit losses	—	—	—	—	—	—
Gross recoveries	—	—	—	—	—	—
Net credit losses (NCLs)	$—	$—	$—	$—	$—	$—
Replenishment of NCLs	$—	$—	$—	$—	$—	$—
Net reserve builds (releases)	(6)	5	8	(1)	1	7
Total provision for credit losses	$ (6)	$ 5	$ 8	$ (1)	$ 1	$ 7
Other, net	$—	$ 1	$—	$—	$21	$22
Allowance for credit losses on other assets at end of year	$—	$20	$10	$—	$25	$55

(1) Primarily accounts receivable.

For ACL on AFS debt securities, see Note 13 to the Consolidated Financial Statements.

16. GOODWILL AND INTANGIBLE ASSETS

Goodwill

The changes in *Goodwill* were as follows:

In millions of dollars	Institutional Clients Group	Global Consumer Banking	Total
Balance at December 31, 2018	$ 9,959	$12,087	$22,046
Foreign exchange translation	65	15	80
Balance at December 31, 2019	$10,024	$12,102	$22,126
Foreign exchange translation	(4)	40	36
Balance at December 31, 2020	$10,020	$12,142	$22,162
Foreign exchange translation	(267)	(116)	(383)
Divestitures[1]	—	(480)	(480)
Balance at December 31, 2021	**$ 9,753**	**$11,546**	**$21,299**

(1) Goodwill allocated primarily to the Australia and the Philippines consumer banking businesses, which were reclassified as HFS during 2021. See Note 2 to the Consolidated Financial Statements.

The Company performed its annual goodwill impairment test using data as of July 1, 2021, at the level below each operating segment (referred to as a reporting unit). The fair values of the Company's reporting units as a percentage of their carrying values ranged from approximately 125% to 153%, resulting in no impairment. While the inherent risk related to uncertainty is embedded in the key assumptions used in the valuations, the economic and business environments continue to evolve as management implements its strategic refresh, which includes, among others, the exits of consumer businesses in 13 markets in *Asia* and *EMEA*, as well as the exit of the Mexico consumer, small business and middle-market banking operations, and Citi's implementation of its new operating segment and reporting unit structure in the first quarter of 2022. If management's future estimate of key economic and market assumptions were to differ from its current assumptions, Citi could potentially experience material goodwill impairment charges in the future. Citi expects that the implementation of its new operating segments and reporting units in the first quarter of 2022, as well as the timing and sequencing of the sales of its *Asia* consumer banking businesses, may result in goodwill impairment.

For additional information regarding Citi's goodwill impairment testing process, see the following Notes to the Consolidated Financial Statements: Note 1 for Citi's accounting policy for goodwill, and Note 3 for a description of Citi's operating segments.

Intangible Assets

The components of intangible assets were as follows:

In millions of dollars	December 31, 2021 Gross carrying amount	Accumulated amortization	Net carrying amount	December 31, 2020 Gross carrying amount	Accumulated amortization	Net carrying amount
Purchased credit card relationships	**$ 5,579**	**$4,348**	**$1,231**	$ 5,648	$4,229	$1,419
Credit card contract-related intangibles[1]	**3,912**	**1,372**	**2,540**	3,929	1,276	2,653
Core deposit intangibles	**39**	**39**	**—**	45	44	1
Other customer relationships	**429**	**305**	**124**	455	314	141
Present value of future profits	**31**	**29**	**2**	32	30	2
Indefinite-lived intangible assets	**183**	**—**	**183**	190	—	190
Other	**37**	**26**	**11**	72	67	5
Intangible assets (excluding MSRs)	**$10,210**	**$6,119**	**$4,091**	$10,371	$5,960	$4,411
Mortgage servicing rights (MSRs)[2]	**404**	**—**	**404**	336	—	336
Total intangible assets	**$10,614**	**$6,119**	**$4,495**	$10,707	$5,960	$4,747

(1) Primarily reflects contract-related intangibles associated with the American Airlines, The Home Depot, Costco and AT&T credit card program agreements, which represented 97% of the aggregate net carrying amount as of December 31, 2021.
(2) For additional information on Citi's MSRs, see Note 21 to the Consolidated Financial Statements.

Intangible assets amortization expense was $360 million, $419 million and $564 million for 2021, 2020 and 2019, respectively. Intangible assets amortization expense is estimated to be $345 million in 2022, $347 million in 2023, $367 million in 2024, $371 million in 2025 and $342 million in 2026.

The changes in intangible assets were as follows:

In millions of dollars	Net carrying amount at December 31, 2020	Acquisitions/ renewals/ divestitures	Amortization	Impairments	FX translation and other	Net carrying amount at December 31, 2021
Purchased credit card relationships[1]	$1,419	**$(15)**	**$(171)**	**$ —**	**$ (2)**	**$1,231**
Credit card contract-related intangibles[2]	2,653	**29**	**(140)**	**(1)**	**(1)**	**2,540**
Core deposit intangibles	1	**—**	**(1)**	**—**	**—**	**—**
Other customer relationships	141	**20**	**(24)**	**—**	**(13)**	**124**
Present value of future profits	2	**—**	**—**	**—**	**—**	**2**
Indefinite-lived intangible assets	190	**—**	**—**	**—**	**(7)**	**183**
Other	5	**29**	**(24)**	**—**	**1**	**11**
Intangible assets (excluding MSRs)	$4,411	**$ 63**	**$(360)**	**$ (1)**	**$(22)**	**$4,091**
Mortgage servicing rights (MSRs)[3]	336					**404**
Total intangible assets	$4,747					**$4,495**

(1) Reflects intangibles for the value of cardholder relationships, which are discrete from partner contract-related intangibles, and includes credit card accounts primarily in the Costco, Macy's and Sears portfolios.
(2) Primarily reflects contract-related intangibles associated with the American Airlines, The Home Depot, Costco and AT&T credit card program agreements, which represent 97% and 96% of the aggregate net carrying amount at December 31, 2021 and 2020, respectively.
(3) For additional information on Citi's MSRs, including the rollforward from 2020 to 2021, see Note 21 to the Consolidated Financial Statements.

17. DEBT

Short-Term Borrowings

	December 31,			
	2021		2020	
In millions of dollars	**Balance**	**Weighted average coupon**	Balance	Weighted average coupon
Commercial paper				
Bank[1]	**$ 9,026**		$10,022	
Broker-dealer and other[2]	**6,992**		7,988	
Total commercial paper	**$16,018**	**0.22%**	$18,010	0.24%
Other borrowings[3]	**11,955**	**0.91**	11,504	0.48
Total	**$27,973**		$29,514	

(1) Represents Citibank entities as well as other bank entities.
(2) Represents broker-dealer and other non-bank subsidiaries that are consolidated into Citigroup Inc., the parent holding company.
(3) Includes borrowings from Federal Home Loan Banks and other market participants. At December 31, 2021 and 2020, collateralized short-term advances from Federal Home Loan Banks were $0.0 billion and $4.0 billion, respectively.

Borrowings under bank lines of credit may be at interest rates based on LIBOR, CD rates, the prime rate or bids submitted by the banks. Citigroup pays commitment fees for its lines of credit.

Some of Citigroup's non-bank subsidiaries have credit facilities with Citigroup's subsidiary depository institutions, including Citibank. Borrowings under these facilities are secured in accordance with Section 23A of the Federal Reserve Act.

Citigroup Global Markets Holdings Inc. (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

			Balances at December 31,	
In millions of dollars	**Weighted average coupon[1]**	**Maturities**	**2021**	2020
Citigroup Inc.[2]				
Senior debt	2.88%	2022–2098	**$137,651**	$142,197
Subordinated debt[3]	4.65	2022–2046	**25,560**	26,636
Trust preferred securities	6.30	2036–2067	**1,734**	1,730
Bank[4]				
Senior debt	1.54	2022–2039	**23,567**	44,742
Broker-dealer[5]				
Senior debt	0.84	2022–2070	**65,652**	55,896
Subordinated debt[3]	—	2022–2046	**210**	485
Total	2.94%		**$254,374**	$271,686
Senior debt			**$226,870**	$242,835
Subordinated debt[3]			**25,770**	27,121
Trust preferred securities			**1,734**	1,730
Total			**$254,374**	$271,686

(1) The weighted average coupon excludes structured notes accounted for at fair value.
(2) Represents the parent holding company.
(3) Includes notes that are subordinated within certain countries, regions or subsidiaries.
(4) Represents Citibank entities as well as other bank entities. At December 31, 2021 and 2020, collateralized long-term advances from Federal Home Loan Banks were $5.3 billion and $10.9 billion, respectively.
(5) Represents broker-dealer and other non-bank subsidiaries that are consolidated into Citigroup Inc., the parent holding company. Certain Citigroup consolidated hedging activities are also included in this line.

The Company issues both fixed- and variable-rate debt in a range of currencies. It uses derivative contracts, primarily interest rate swaps, to effectively convert a portion of its fixed-rate debt to variable-rate debt. The maturity structure of the derivatives generally corresponds to the maturity structure of the debt being hedged. In addition, the Company uses other derivative contracts to manage the foreign exchange impact of certain debt issuances. At December 31, 2021, the Company's overall weighted average interest rate for long-term debt, excluding structured notes accounted for at fair value, was 2.94% on a contractual basis and 3.12% including the effects of derivative contracts.

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

In millions of dollars	2022	2023	2024	2025	2026	Thereafter	Total
Citigroup Inc.	$ 9,955	$14,440	$12,475	$16,798	$21,483	$ 89,794	$164,945
Bank	9,839	4,227	5,028	473	68	3,932	23,567
Broker-dealer	13,199	11,813	8,066	3,995	5,499	23,290	65,862
Total	$32,993	$30,480	$25,569	$21,266	$27,050	$117,016	$254,374

The following table summarizes Citi's outstanding trust preferred securities at December 31, 2021:

						Junior subordinated debentures owned by trust		
Trust	**Issuance date**	**Securities issued**	**Liquidation value[1]**	**Coupon rate[2]**	**Common shares issued to parent**	**Amount**	**Maturity**	**Redeemable by issuer beginning**
In millions of dollars, except securities and share amounts								
Citigroup Capital III	Dec. 1996	194,053	$ 194	7.625%	6,003	$ 200	Dec. 1, 2036	Not redeemable
Citigroup Capital XIII	Sept. 2010	89,840,000	2,246	3 mo LIBOR + 637 bps	1,000	2,246	Oct. 30, 2040	Oct. 30, 2015
Citigroup Capital XVIII	June 2007	99,901	135	3 mo sterling LIBOR + 88.75 bps	50	135	June 28, 2067	June 28, 2017
Total obligated			**$2,575**			**$2,581**		

Note: Distributions on the trust preferred securities and interest on the subordinated debentures are payable semiannually for Citigroup Capital III and Citigroup Capital XVIII and quarterly for Citigroup Capital XIII.
(1) Represents the notional value received by outside investors from the trusts at the time of issuance. This differs from Citi's balance sheet carrying value due primarily to unamortized discount and issuance costs.
(2) In each case, the coupon rate on the subordinated debentures is the same as that on the trust preferred securities.

18. REGULATORY CAPITAL

Citigroup is subject to risk-based capital and leverage standards issued by the Federal Reserve Board, which constitute the U.S. Basel III rules. Citi's U.S.-insured depository institution subsidiaries, including Citibank, are subject to similar standards issued by their respective primary bank regulatory agencies. These standards are used to evaluate capital adequacy and include the required minimums shown in the following table. The regulatory agencies are required by law to take specific, prompt corrective actions with respect to institutions that do not meet minimum capital standards.

The following table sets forth for Citigroup and Citibank the regulatory capital tiers, total risk-weighted assets, quarterly adjusted average total assets, Total Leverage Exposure, risk-based capital ratios and leverage ratios:

		Citigroup[4]			Citibank[4]		
In millions of dollars, except ratios	**Stated minimum**	**Well-capitalized minimum**	**December 31, 2021**	December 31, 2020	**Well-capitalized minimum**	**December 31, 2021**	December 31, 2020
Common Equity Tier 1 Capital			**$ 149,305**	$ 147,274		**$ 148,548**	$ 142,854
Tier 1 Capital			**169,568**	167,053		**150,679**	144,962
Total Capital (Tier 1 Capital + Tier 2 Capital)—Standardized Approach			**203,838**	205,002		**175,427**	169,449
Total Capital (Tier 1 Capital + Tier 2 Capital)—Advanced Approaches			**194,006**	196,051		**166,921**	161,447
Total risk-weighted assets—Standardized Approach			**1,219,175**	1,242,381		**1,066,015**	1,054,056
Total risk-weighted assets—Advanced Approaches			**1,209,374**	1,278,977		**1,017,774**	1,047,088
Quarterly adjusted average total assets[1]			**2,351,434**	2,265,615		**1,716,596**	1,667,105
Total Leverage Exposure[2]			**2,957,764**	2,391,033		**2,236,839**	2,172,052
Common Equity Tier 1 Capital ratio[3]	**4.5%**	**N/A**	**12.25%**	11.51%	**6.5%**	**13.93%**	13.55%
Tier 1 Capital ratio[3]	**6.0**	**6.0%**	**13.91**	13.06	**8.0**	**14.13**	13.75
Total Capital ratio[3]	**8.0**	**10.0**	**16.04**	15.33	**10.0**	**16.40**	15.42
Tier 1 Leverage ratio	**4.0**	**N/A**	**7.21**	7.37	**5.0**	**8.78**	8.70
Supplementary Leverage ratio	**3.0**	**N/A**	**5.73**	6.99	**6.0**	**6.74**	6.67

(1) Tier 1 Leverage ratio denominator.
(2) Supplementary Leverage ratio denominator.
(3) Citigroup's reportable Common Equity Tier 1 Capital and Tier 1 Capital ratios were the lower derived under the Basel III Standardized Approach and the reportable Total Capital ratio was the lower derived under the Basel III Advanced Approaches framework as of December 31, 2021, whereas Citigroup's reportable Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios as of December 31, 2020 were the lower derived under the Basel III Advanced Approaches framework. As of December 31, 2021 and 2020, Citibank's reportable Common Equity Tier 1 Capital and Tier 1 Capital ratios were the lower derived under the Basel III Standardized Approach, whereas the Total Capital ratios were the lower derived under the Basel III Advanced Approaches framework.
(4) Certain of the above prior-period amounts have been revised to conform with enhancements made in the current period.
N/A Not applicable

As indicated in the table above, Citigroup and Citibank were "well capitalized" under the current federal bank regulatory agency definitions as of December 31, 2021 and 2020.

Banking Subsidiaries—Constraints on Dividends

There are various legal limitations on the ability of Citigroup's subsidiary depository institutions to extend credit, pay dividends or otherwise supply funds to Citigroup and its non-bank subsidiaries. The approval of the Office of the Comptroller of the Currency is required if total dividends declared in any calendar year were to exceed amounts specified by the agency's regulations.

In determining the dividends, each subsidiary depository institution must also consider its effect on applicable risk-based capital and leverage ratio requirements, as well as policy statements of the federal bank regulatory agencies that indicate that banking organizations should generally pay dividends out of current operating earnings. Citigroup received $6.2 billion and $2.3 billion in dividends from Citibank during 2021 and 2020, respectively.

19. CHANGES IN ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS) (AOCI)

Changes in each component of Citigroup's *Accumulated other comprehensive income (loss)* were as follows:

In millions of dollars	Net unrealized gains (losses) on debt securities	Debt valuation adjustment (DVA)[1]	Cash flow hedges[2]	Benefit plans[3]	Foreign currency translation adjustment (CTA), net of hedges[4][5]	Excluded component of fair value hedges	Accumulated other comprehensive income (loss)
Balance, December 31, 2018	$(2,250)	$ 192	$ (728)	$(6,257)	$(28,070)	$(57)	$(37,170)
Other comprehensive income before reclassifications	3,065	(1,151)	549	(758)	(321)	25	1,409
Increase (decrease) due to amounts reclassified from *AOCI*	(1,080)	15	302	206	—	—	(557)
Change, net of taxes	$ 1,985	$(1,136)	$ 851	$ (552)	$ (321)	$ 25	$ 852
Balance, December 31, 2019	$ (265)	$ (944)	$ 123	$(6,809)	$(28,391)	$(32)	$(36,318)
Other comprehensive income before reclassifications	4,837	(490)	2,027	(287)	(250)	(15)	5,822
Increase (decrease) due to amounts reclassified from *AOCI*	(1,252)	15	(557)	232	—	—	(1,562)
Change, net of taxes	$ 3,585	$ (475)	$ 1,470	$ (55)	$ (250)	$(15)	$ 4,260
Balance, December 31, 2020	$ 3,320	$(1,419)	$ 1,593	$(6,864)	$(28,641)	$(47)	$(32,058)
Other comprehensive income before reclassifications	**(3,556)**	**121**	**(679)**	**797**	**(2,537)**	**(11)**	**(5,865)**
Increase (decrease) due to amounts reclassified from *AOCI*	**(378)**	**111**	**(813)**	**215**	**12**	**11**	**(842)**
Change, net of taxes	**$(3,934)**	**$ 232**	**$(1,492)**	**$ 1,012**	**$ (2,525)**	**$ —**	**$ (6,707)**
Balance, December 31, 2021	**$ (614)**	**$(1,187)**	**$ 101**	**$(5,852)**	**$(31,166)**	**$(47)**	**$(38,765)**

(1) Reflects the after-tax valuation of Citi's fair value option liabilities. See "Market Valuation Adjustments" in Note 24 to the Consolidated Financial Statements.
(2) Primarily driven by Citi's pay fixed/receive floating interest rate swap programs that hedge the floating rates on liabilities.
(3) Primarily reflects adjustments based on the quarterly actuarial valuations of the Company's significant pension and postretirement plans, annual actuarial valuations of all other plans and amortization of amounts previously recognized in other comprehensive income.
(4) Primarily reflects the movements in (by order of impact) the Mexican peso, Euro, South Korean won, Chilean peso and Japanese yen against the U.S. dollar and changes in related tax effects and hedges for the year ended December 31, 2021. Primarily reflects the movements in (by order of impact) the Mexican peso, Brazilian real, South Korean won and Euro against the U.S. dollar and changes in related tax effects and hedges for the year ended December 31, 2020. Primarily reflects the movements in (by order of impact) the Indian rupee, Brazilian real, Chilean peso and Euro against the U.S. dollar and changes in related tax effects and hedges for the year ended December 31, 2019. Amounts recorded in the CTA component of *AOCI* remain in *AOCI* until the sale or substantial liquidation of the foreign entity, at which point such amounts related to the foreign entity are reclassified into earnings.
(5) December 31, 2021 includes an approximate $475 million (after-tax) ($625 million pretax) currency translation adjustment (CTA) loss (net of hedges) associated with Citi's agreement to sell its consumer banking business in Australia (see Note 2 to the Consolidated Financial Statements). The loss on sale primarily reflects the impact of the CTA loss (net of hedges) already reflected in *AOCI*. Upon closing, the CTA-related balance will be removed from *AOCI*, resulting in a neutral impact from CTA to Citi's Common Equity Tier 1 Capital.

The pretax and after-tax changes in each component of *Accumulated other comprehensive income (loss)* were as follows:

In millions of dollars	Pretax	Tax effect	After-tax
Balance, December 31, 2018	$(44,082)	$ 6,912	$(37,170)
Change in net unrealized gains (losses) on debt securities	2,633	(648)	1,985
Debt valuation adjustment (DVA)	(1,473)	337	(1,136)
Cash flow hedges	1,120	(269)	851
Benefit plans	(671)	119	(552)
Foreign currency translation adjustment	(332)	11	(321)
Excluded component of fair value hedges	33	(8)	25
Change	$ 1,310	$ (458)	$ 852
Balance, December 31, 2019	$(42,772)	$ 6,454	$(36,318)
Change in net unrealized gains (losses) on debt securities	4,799	(1,214)	3,585
Debt valuation adjustment (DVA)	(616)	141	(475)
Cash flow hedges	1,925	(455)	1,470
Benefit plans	(78)	23	(55)
Foreign currency translation adjustment	(227)	(23)	(250)
Excluded component of fair value hedges	(23)	8	(15)
Change	$ 5,780	$(1,520)	$ 4,260
Balance, December 31, 2020	$(36,992)	$ 4,934	$(32,058)
Change in net unrealized gains (losses) on debt securities	**(5,301)**	**1,367**	**(3,934)**
Debt valuation adjustment (DVA)	**296**	**(64)**	**232**
Cash flow hedges	**(1,969)**	**477**	**(1,492)**
Benefit plans	**1,252**	**(240)**	**1,012**
Foreign currency translation adjustment	**(2,671)**	**146**	**(2,525)**
Excluded component of fair value hedges	**2**	**(2)**	**—**
Change	**$ (8,391)**	**$ 1,684**	**$ (6,707)**
Balance, December 31, 2021	**$(45,383)**	**$ 6,618**	**$(38,765)**

The Company recognized pretax (gains) losses related to amounts in *AOCI* reclassified to the Consolidated Statement of Income as follows:

	Increase (decrease) in AOCI due to amounts reclassified to Consolidated Statement of Income		
	Year ended December 31,		
In millions of dollars	**2021**	2020	2019
Realized (gains) losses on sales of investments	**$ (665)**	$(1,756)	$(1,474)
Gross impairment losses	**181**	109	23
Subtotal, pretax	**$ (484)**	$(1,647)	$(1,451)
Tax effect	**106**	395	371
Net realized (gains) losses on investments, after-tax[1]	**$ (378)**	$(1,252)	$(1,080)
Realized DVA (gains) losses on fair value option liabilities, pretax	**$ 144**	$ 20	$ 20
Tax effect	**(33)**	(5)	(5)
Net realized DVA, after-tax	**$ 111**	$ 15	$ 15
Interest rate contracts	**$(1,075)**	$ (734)	$ 384
Foreign exchange contracts	**4**	4	7
Subtotal, pretax	**$(1,071)**	$ (730)	$ 391
Tax effect	**258**	173	(89)
Amortization of cash flow hedges, after-tax[2]	**$ (813)**	$ (557)	$ 302
Amortization of unrecognized:			
Prior service cost (benefit)	**$ (23)**	$ (5)	$ (12)
Net actuarial loss	**302**	322	286
Curtailment/settlement impact[3]	**11**	(8)	1
Subtotal, pretax	**$ 290**	$ 309	$ 275
Tax effect	**(75)**	(77)	(69)
Amortization of benefit plans, after-tax[3]	**$ 215**	$ 232	$ 206
Excluded component of fair value hedges, pretax	**$ 15**	$ —	$ —
Tax effect	**(4)**	—	—
Excluded component of fair value hedges, after-tax	**$ 11**	$ —	$ —
Foreign currency translation adjustment, pretax	**$ 19**	$ —	$ —
Tax effect	**(7)**	—	—
Foreign currency translation adjustment, after-tax	**$ 12**	$ —	$ —
Total amounts reclassified out of *AOCI*, pretax	**$(1,087)**	$(2,048)	$ (765)
Total tax effect	**245**	486	208
Total amounts reclassified out of *AOCI*, after-tax	**$ (842)**	$(1,562)	$ (557)

(1) The pretax amount is reclassified to *Realized gains (losses) on sales of investments, net* and *Gross impairment losses* in the Consolidated Statement of Income. See Note 13 to the Consolidated Financial Statements for additional details.
(2) See Note 22 to the Consolidated Financial Statements for additional details.
(3) See Note 8 to the Consolidated Financial Statements for additional details.

20. PREFERRED STOCK

The following table summarizes the Company's preferred stock outstanding:

	Issuance date	Redeemable by issuer beginning	Dividend rate	Redemption price per depositary share/preference share	Number of depositary shares	Carrying value *in millions of dollars* December 31, 2021	Carrying value *in millions of dollars* December 31, 2020
Series A[1]	October 29, 2012	January 30, 2023	5.950%	$1,000	1,500,000	**$ 1,500**	$ 1,500
Series B[2]	December 13, 2012	February 15, 2023	5.900	1,000	750,000	**750**	750
Series D[3]	April 30, 2013	May 15, 2023	5.350	1,000	1,250,000	**1,250**	1,250
Series J[4]	September 19, 2013	September 30, 2023	7.125	25	38,000,000	**950**	950
Series K[5]	October 31, 2013	November 15, 2023	6.875	25	59,800,000	**1,495**	1,495
Series M[6]	April 30, 2014	May 15, 2024	6.300	1,000	1,750,000	**1,750**	1,750
Series P[7]	April 24, 2015	May 15, 2025	5.950	1,000	2,000,000	**2,000**	2,000
Series Q[8]	August 12, 2015	August 15, 2020	4.316	1,000	1,250,000	**—**	1,250
Series R[9]	November 13, 2015	November 15, 2020	4.699	1,000	1,500,000	**—**	1,500
Series S[10]	February 2, 2016	February 12, 2021	6.300	25	41,400,000	**—**	1,035
Series T[11]	April 25, 2016	August 15, 2026	6.250	1,000	1,500,000	**1,500**	1,500
Series U[12]	September 12, 2019	September 12, 2024	5.000	1,000	1,500,000	**1,500**	1,500
Series V[13]	January 23, 2020	January 30, 2025	4.700	1,000	1,500,000	**1,500**	1,500
Series W[14]	December 10, 2020	December 10, 2025	4.000	1,000	1,500,000	**1,500**	1,500
Series X[15]	February 18, 2021	February 18, 2026	3.875	1,000	2,300,000	**2,300**	—
Series Y[16]	October 20, 2021	October 20, 2026	4.150	1,000	1,000,000	**1,000**	—
						$18,995	$19,480

(1) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semiannually on January 30 and July 30 at a fixed rate until, but excluding, January 30, 2023, thereafter payable quarterly on January 30, April 30, July 30 and October 30 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(2) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semiannually on February 15 and August 15 at a fixed rate until, but excluding, February 15, 2023, thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(3) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semiannually on May 15 and November 15 at a fixed rate until, but excluding, May 15, 2023, thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(4) Issued as depositary shares, each representing a 1/1,000th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable quarterly on March 30, June 30, September 30 and December 30 at a fixed rate until, but excluding, September 30, 2023, thereafter payable quarterly on the same dates at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(5) Issued as depositary shares, each representing a 1/1,000th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable quarterly on February 15, May 15, August 15 and November 15 at a fixed rate until, but excluding, November 15, 2023, thereafter payable quarterly on the same dates at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(6) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semiannually on May 15 and November 15 at a fixed rate until, but excluding, May 15, 2024, thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(7) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semiannually on May 15 and November 15 at a fixed rate until, but excluding, May 15, 2025, and thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(8) The Series Q preferred stock was redeemed in full on May 17, 2021.

(9) The Series R preferred stock was redeemed in full on May 17, 2021.

(10) The Series S preferred stock was redeemed in full on February 12, 2021.

(11) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semiannually on February 15 and August 15 at a fixed rate until, but excluding, August 15, 2026, thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(12) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semiannually on March 12 and September 12 at a fixed rate until, but excluding, September 12, 2024, thereafter payable quarterly on March 12, June 12, September 12 and December 12 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(13) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semiannually on January 30 and July 30 at a fixed rate until, but excluding, January 30, 2025, thereafter payable quarterly on January 30, April 30, July 30 and October 30 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(14) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable quarterly on March 10, June 10, September 10 and December 10 at a fixed rate until, but excluding, December 10, 2025, thereafter payable quarterly on the same dates at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(15) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable quarterly on February 18, May 18, August 18 and November 18 at a fixed rate until, but excluding, February 18, 2026, thereafter payable quarterly on the same dates at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

(16) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable quarterly on February 15, May 15, August 15 and November 15 at a fixed rate until, but excluding, November 15, 2026, thereafter payable quarterly on the same dates at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

21. 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 Citi are to assist clients in securitizing their financial assets and to create investment products for clients and to obtain liquidity and optimize capital efficiency by securitizing certain of Citi's financial assets. 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. Citigroup may be the provider of certain credit enhancements as well as the counterparty to any related derivative contracts.

Most of Citigroup's SPEs are variable interest entities (VIEs).

Variable Interest Entities

VIEs are described in Note 1 to the Consolidated Financial Statements. 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 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 (e.g., 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.

Citigroup's involvement with consolidated and unconsolidated VIEs with which the Company holds significant variable interests or has continuing involvement through servicing a majority of the assets in a VIE is presented below:

	As of December 31, 2021							
				Maximum exposure to loss in significant unconsolidated VIEs[1]				
				Funded exposures[2]		Unfunded exposures		
In millions of dollars	Total involvement with SPE assets	Consolidated VIE/SPE assets	Significant unconsolidated VIE assets[3]	Debt investments	Equity investments	Funding commitments	Guarantees and derivatives	Total
Credit card securitizations	$ 31,518	$31,518	$ —	$ —	$ —	$ —	$ —	$ —
Mortgage securitizations[4]								
U.S. agency-sponsored	113,641	—	113,641	1,582	—	—	43	1,625
Non-agency-sponsored	60,851	632	60,219	2,479	—	5	—	2,484
Citi-administered asset-backed commercial paper conduits	14,018	14,018	—	—	—	—	—	—
Collateralized loan obligations (CLOs)	8,302	—	8,302	2,636	—	—	—	2,636
Asset-based financing[5]	246,632	11,085	235,547	32,242	1,139	12,189	—	45,570
Municipal securities tender option bond trusts (TOBs)	3,251	905	2,346	2	—	1,498	—	1,500
Municipal investments	20,597	3	20,594	2,512	3,617	3,562	—	9,691
Client intermediation	904	297	607	75	—	—	224	299
Investment funds	498	179	319	—	—	12	1	13
Other	—	—	—	—	—	—	—	—
Total	**$500,212**	**$58,637**	**$441,575**	**$41,528**	**$4,756**	**$17,266**	**$268**	**$63,818**

	As of December 31, 2020							
				Maximum exposure to loss in significant unconsolidated VIEs[1]				
				Funded exposures[2]		Unfunded exposures		
In millions of dollars	Total involvement with SPE assets	Consolidated VIE/SPE assets	Significant unconsolidated VIE assets[3]	Debt investments	Equity investments	Funding commitments	Guarantees and derivatives	Total
Credit card securitizations	$ 32,423	$32,423	$ —	$ —	$ —	$ —	$ —	$ —
Mortgage securitizations[4]								
U.S. agency-sponsored	123,999	—	123,999	1,948	—	—	61	2,009
Non-agency-sponsored	46,132	939	45,193	2,550	—	2	1	2,553
Citi-administered asset-backed commercial paper conduits	16,730	16,730	—	—	—	—	—	—
Collateralized loan obligations (CLOs)	18,332	—	18,332	4,273	—	—	—	4,273
Asset-based financing[5]	222,274	8,069	214,205	25,153	1,587	9,114	—	35,854
Municipal securities tender option bond trusts (TOBs)	3,349	835	2,514	0	—	1,611	—	1,611
Municipal investments	20,335	—	20,335	2,569	4,056	3,041	—	9,666
Client intermediation	1,352	910	442	88	—	—	56	144
Investment funds	488	153	335	—	—	15	—	15
Other	0	0	0	0	—	—	—	0
Total	$ 485,414	$60,059	$425,355	$36,581	$5,643	$13,783	$118	$56,125

(1) The definition of maximum exposure to loss is included in the text that follows this table.
(2) Included on Citigroup's December 31, 2021 and 2020 Consolidated Balance Sheet.
(3) 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.
(4) Citigroup mortgage securitizations also include agency and non-agency (private label) re-securitization activities. These re-securitization SPEs are not consolidated. See "Re-securitizations" below for further discussion.
(5) Included within this line are loans to third-party sponsored private equity funds, which represent $100 billion and $78 billion in unconsolidated VIE assets and $497 million and $425 million in maximum exposure to loss as of December 31, 2021 and 2020, respectively.

The previous tables do not include:

- certain venture capital investments made by some of the Company's private equity subsidiaries, as the Company accounts for these investments in accordance with the Investment Company Audit Guide (codified in ASC 946);
- certain investment funds for which the Company provides investment management services and personal estate trusts for which the Company provides administrative, trustee and/or investment management services;
- certain third-party sponsored private equity funds to which the Company provides secured credit facilities. The Company has no decision-making power and does not consolidate these funds, some of which may meet the definition of a VIE. The Company's maximum exposure to loss is generally limited to a loan or lending-related commitment. As of December 31, 2021 and 2020, the Company's maximum exposure to loss related to these deals was $55.6 billion and $57.0 billion, respectively (for more information on these positions, see Notes 14 and 26 to the Consolidated Financial Statements);
- 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* or *Investments*, in which the Company has no other involvement with the related securitization entity deemed to be significant (for more information on these positions, see Notes 13 and 24 to the Consolidated Financial Statements);
- certain representations and warranties exposures in Citigroup residential mortgage securitizations, in which the original mortgage loan balances are no longer outstanding; and
- VIEs such as trust preferred securities trusts used in connection with the Company's funding activities. The Company does not have a variable interest in these trusts.

The asset balances for consolidated VIEs represent the carrying amounts of the assets consolidated by the Company. The carrying amount may represent the amortized cost or the current fair value of the assets depending on the classification of the asset (e.g., loan or security) and the associated accounting model ascribed to that classification.

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 funded 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 remaining undrawn committed amount, including liquidity and credit facilities provided by the Company or 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.

Funding Commitments for Significant Unconsolidated VIEs—Liquidity Facilities and Loan Commitments

The following table presents the notional amount of liquidity facilities and loan commitments that are classified as funding commitments in the VIE tables above:

	December 31, 2021		December 31, 2020	
In millions of dollars	**Liquidity facilities**	**Loan/equity commitments**	Liquidity facilities	Loan/equity commitments
Non-agency-sponsored mortgage securitizations	**$ —**	**$ 5**	$ —	$ 2
Asset-based financing	**—**	**12,189**	—	9,114
Municipal securities tender option bond trusts (TOBs)	**1,498**	**—**	1,611	—
Municipal investments	**—**	**3,562**	—	3,041
Investment funds	**—**	**12**	—	15
Other	**—**	**—**	—	—
Total funding commitments	**$1,498**	**$15,768**	$1,611	$12,172

Consolidated VIEs

The Company engages in on-balance sheet securitizations, which are securitizations that do not qualify for sales treatment; thus, the assets remain on Citi's Consolidated Balance Sheet, and any proceeds received are recognized as secured liabilities. In general, the third-party investors in the obligations of consolidated VIEs have legal recourse only to the assets of the respective VIEs and do not have such recourse to the Company, except where Citi has provided a guarantee to the investors or is the counterparty to certain derivative transactions involving the VIE. Thus, Citigroup's maximum legal exposure to loss related to consolidated VIEs is significantly less than the carrying value of the consolidated VIE assets due to outstanding third-party financing. Intercompany assets and liabilities are excluded from Citi's Consolidated Balance Sheet. All VIE assets are restricted from being sold or pledged as collateral. The cash flows from these assets are the only source used to pay down the associated liabilities, which are non-recourse to Citi's general assets. See the Consolidated Balance Sheet for more information about these Consolidated VIE assets and liabilities.

Significant Interests in Unconsolidated VIEs—Balance Sheet Classification

The following table presents the carrying amounts and classification of significant variable interests in unconsolidated VIEs:

In billions of dollars	**December 31, 2021**	December 31, 2020
Cash	**$ —**	$ —
Trading account assets	**1.4**	2.0
Investments	**8.8**	10.6
Total loans, net of allowance	**35.4**	29.3
Other	**0.8**	0.3
Total assets	**$46.4**	$42.2

Credit Card Securitizations

The Company securitizes credit card receivables through trusts established to purchase the receivables. Citigroup transfers receivables into the trusts on a non-recourse basis. Credit card securitizations are revolving securitizations: as customers pay their credit card balances, the cash proceeds are used to purchase new receivables and replenish the receivables in the trust.

Substantially all of the Company's credit card securitization activity is through two trusts—Citibank Credit Card Master Trust (Master Trust) and Citibank Omni Trust (Omni Trust), with the substantial majority through the Master Trust. These trusts are consolidated entities because, as servicer, Citigroup has the power to direct the activities that most significantly impact the economic performance of the trusts. Citigroup holds a seller's interest and certain securities issued by the trusts, which could result in exposure to potentially significant losses or benefits from the trusts. Accordingly, the transferred credit card receivables remain on Citi's Consolidated Balance Sheet with no gain or loss recognized. The debt issued by the trusts to third parties is included on Citi's Consolidated Balance Sheet.

Citi utilizes securitizations as one of the sources of funding for its business in *North America*. The following table reflects amounts related to the Company's securitized credit card receivables:

In billions of dollars	**December 31, 2021**	December 31, 2020
Ownership interests in principal amount of trust credit card receivables		
Sold to investors via trust-issued securities	**$ 9.7**	$15.7
Retained by Citigroup as trust-issued securities	**7.2**	7.9
Retained by Citigroup via non-certificated interests	**16.1**	11.1
Total	**$33.0**	$34.7

The following table summarizes selected cash flow information related to Citigroup's credit card securitizations:

In billions of dollars	**2021**	2020	2019
Proceeds from new securitizations	**$ —**	$ 0.3	$ —
Pay down of maturing notes	**(6.0)**	(4.3)	(7.6)

Managed Loans

After securitization of credit card receivables, the Company continues to maintain credit card customer account relationships and provides servicing for receivables transferred to the trusts. As a result, the Company considers the securitized credit card receivables to be part of the business it manages. As Citigroup consolidates the credit card trusts, all managed securitized card receivables are on-balance sheet.

Funding, Liquidity Facilities and Subordinated Interests

As noted above, Citigroup securitizes credit card receivables through two securitization trusts—Master Trust and Omni Trust. The liabilities of the trusts are included on the Consolidated Balance Sheet, excluding those retained by Citigroup.

Master Trust Liabilities (at Par Value)

The Master Trust issues fixed- and floating-rate term notes. Some of the term notes may be issued to multi-seller commercial paper conduits. The weighted average maturity of the third-party term notes issued by the Master Trust was 3.6 years as of December 31, 2021 and 2.9 years as of December 31, 2020.

In billions of dollars	**Dec. 31, 2021**	Dec. 31, 2020
Term notes issued to third parties	**$ 8.4**	$13.9
Term notes retained by Citigroup affiliates	**2.2**	2.7
Total Master Trust liabilities	**$10.6**	$16.6

Omni Trust Liabilities (at Par Value)

The Omni Trust issues fixed- and floating-rate term notes, some of which are purchased by multi-seller commercial paper conduits. The weighted average maturity of the third-party term notes issued by the Omni Trust was 1.6 years as of December 31, 2021 and 1.1 years as of December 31, 2020.

In billions of dollars	**Dec. 31, 2021**	Dec. 31, 2020
Term notes issued to third parties	**$1.3**	$1.8
Term notes retained by Citigroup affiliates	**5.0**	5.2
Total Omni Trust liabilities	**$6.3**	$7.0

Mortgage Securitizations

Citigroup provides a wide range of mortgage loan products to a diverse customer base. Once originated, the Company often securitizes these loans through the use of VIEs. These VIEs are funded through the issuance of trust certificates backed solely by the transferred assets. These certificates have the same life as the transferred assets. In addition to providing a source of liquidity and less expensive funding, securitizing these assets also reduces Citi's credit exposure to the borrowers. These mortgage loan securitizations are primarily non-recourse, thereby effectively transferring the risk of future credit losses to the purchasers of the securities issued by the trust.

Citi's U.S. consumer mortgage business generally retains the servicing rights and in certain instances retains investment securities, interest-only strips and residual interests in future cash flows from the trusts and also provides servicing for a limited number of *ICG* securitizations. Citi's *ICG* business may hold investment securities pursuant to credit risk retention rules or in connection with secondary market-making activities.

The Company securitizes mortgage loans generally through either a U.S. government-sponsored agency, such as Ginnie Mae, Fannie Mae or Freddie Mac (U.S. agency-sponsored mortgages), or private label (non-agency-sponsored mortgages) securitization. Citi is not the primary beneficiary of its U.S. agency-sponsored mortgage securitization entities because Citigroup does not have the power to direct the activities of the VIEs that most significantly impact the entities' economic performance. Therefore, Citi does not consolidate these U.S. agency-sponsored mortgage securitization entities. Substantially all of the consumer loans sold or securitized through non-consolidated trusts by Citigroup are U.S. prime residential mortgage loans. Retained interests in non-consolidated agency-sponsored mortgage securitization trusts are classified as *Trading account assets*, except for MSRs, which are included in *Other assets* on Citigroup's Consolidated Balance Sheet.

Citigroup does not consolidate certain non-agency-sponsored mortgage securitization entities because Citi is either not the servicer with the power to direct the significant activities of the entity or Citi is the servicer, but the servicing relationship is deemed to be a fiduciary relationship; therefore, Citi is not deemed to be the primary beneficiary of the entity.

In certain instances, the Company has (i) the power to direct the activities that most significantly impact the entities' economic performance and (ii) the obligation to either absorb losses or the right to receive benefits that could be potentially significant to its non-agency-sponsored mortgage securitization entities and, therefore, is the primary beneficiary and, thus, consolidates the VIE.

The following tables summarize selected cash flow information and retained interests related to Citigroup mortgage securitizations:

	2021		2020		2019	
In billions of dollars	**U.S. agency-sponsored mortgages**	**Non-agency-sponsored mortgages**	U.S. agency-sponsored mortgages	Non-agency-sponsored mortgages	U.S. agency-sponsored mortgages	Non-agency-sponsored mortgages
Principal securitized	**$6.1**	**$25.2**	$ 9.4	$11.3	$5.3	$15.6
Proceeds from new securitizations[1]	**6.4**	**25.4**	10.0	11.4	5.5	15.5
Contractual servicing fees received	**0.1**	**—**	0.1	—	0.1	—
Cash flows received on retained interests and other net cash flows	**—**	**0.1**	—	—	—	—
Purchases of previously transferred financial assets	**0.2**	**—**	0.4	—	0.2	—

Note: Excludes re-securitization transactions.
(1) The proceeds from new securitizations in 2019 include $0.2 billion related to personal loan securitizations.

For non-consolidated mortgage securitization entities where the transfer of loans to the VIE meets the conditions for sale accounting, Citi recognizes a gain or loss based on the difference between the carrying value of the transferred assets and the proceeds received (generally cash but may be beneficial interests or servicing rights).

Agency and non-agency securitization gains for the year ended December 31, 2021 were $3.9 million and $493.4 million, respectively.

Agency and non-agency securitization gains for the year ended December 31, 2020 were $88.4 million and $139.4 million, respectively, and $16 million and $73.4 million, respectively, for the year ended December 31, 2019.

	2021			2020		
		Non-agency-sponsored mortgages[1]			Non-agency-sponsored mortgages[1]	
In millions of dollars	**U.S. agency-sponsored mortgages**	**Senior interests[2]**	**Subordinated interests**	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Carrying value of retained interests[3]	**$374**	**$1,452**	**$955**	$315	$1,210	$145

(1) Disclosure of non-agency-sponsored mortgages as senior and subordinated interests is indicative of the interests' position in the capital structure of the securitization.
(2) Senior interests in non-agency-sponsored mortgages include $73 million related to personal loan securitizations at December 31, 2021.
(3) Retained interests consist of Level 2 and Level 3 assets depending on the observability of significant inputs. See Note 24 to the Consolidated Financial Statements for more information about fair value measurements.

Key assumptions used in measuring the fair value of retained interests at the date of sale or securitization of mortgage receivables were as follows:

	December 31, 2021		
		Non-agency-sponsored mortgages[1]	
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Weighted average discount rate	**8.7%**	**2.2%**	**2.8%**
Weighted average constant prepayment rate	**5.5%**	**6.3%**	**11.0%**
Weighted average anticipated net credit losses[2]	**NM**	**1.8%**	**1.0%**
Weighted average life	**7.4 years**	**3.9 years**	**5.4 years**

	December 31, 2020		
		Non-agency-sponsored mortgages[1]	
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Weighted average discount rate	5.4%	1.7%	3.0%
Weighted average constant prepayment rate	25.8%	3.4%	25.0%
Weighted average anticipated net credit losses[2]	NM	1.7%	0.5%
Weighted average life	4.8 years	3.8 years	2.3 years

(1) Disclosure of non-agency-sponsored mortgages as senior and subordinated interests is indicative of the interests' position in the capital structure of the securitization.
(2) Anticipated net credit losses represent estimated loss severity associated with defaulted mortgage loans underlying the mortgage securitizations disclosed above. Anticipated net credit losses, in this instance, do not represent total credit losses incurred to date, nor do they represent credit losses expected on retained interests in mortgage securitizations.
NM Anticipated net credit losses are not meaningful due to U.S. agency guarantees.

The interests retained by the Company range from highly rated and/or senior in the capital structure to unrated and/or residual interests. Key assumptions used in measuring the fair value of retained interests in securitizations of mortgage receivables at period end were as follows:

	December 31, 2021		
		Non-agency-sponsored mortgages[1]	
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Weighted average discount rate	**3.7%**	**16.2%**	**4.0%**
Weighted average constant prepayment rate	**14.5%**	**6.8%**	**9.0%**
Weighted average anticipated net credit losses[2]	**NM**	**1.0%**	**2.0%**
Weighted average life	**5.1 years**	**8.8 years**	**18.0 years**

	December 31, 2020		
		Non-agency-sponsored mortgages[1]	
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Weighted average discount rate	5.9%	7.2%	4.3%
Weighted average constant prepayment rate	22.7%	5.3%	4.7%
Weighted average anticipated net credit losses[2]	NM	1.2%	1.4%
Weighted average life	4.5 years	5.3 years	4.7 years

(1) Disclosure of non-agency-sponsored mortgages as senior and subordinated interests is indicative of the interests' position in the capital structure of the securitization.
(2) Anticipated net credit losses represent estimated loss severity associated with defaulted mortgage loans underlying the mortgage securitizations disclosed above. Anticipated net credit losses, in this instance, do not represent total credit losses incurred to date, nor do they represent credit losses expected on retained interests in mortgage securitizations.
NM Anticipated net credit losses are not meaningful due to U.S. agency guarantees.

The sensitivity of the fair value to adverse changes of 10% and 20% in each of the key assumptions is presented in the tables below. The negative effect of each change is calculated independently, holding all other assumptions constant. Because the key assumptions may not be independent, the net effect of simultaneous adverse changes in the key assumptions may be less than the sum of the individual effects shown below.

	December 31, 2021		
		Non-agency-sponsored mortgages	
In millions of dollars	**U.S. agency-sponsored mortgages**	**Senior interests**	**Subordinated interests**
Discount rate			
Adverse change of 10%	**$ (6)**	**$ (1)**	**$—**
Adverse change of 20%	**(11)**	**(1)**	**—**
Constant prepayment rate			
Adverse change of 10%	**(19)**	**—**	**—**
Adverse change of 20%	**(37)**	**—**	**—**
Anticipated net credit losses			
Adverse change of 10%	**NM**	**—**	**—**
Adverse change of 20%	**NM**	**—**	**—**

	December 31, 2020		
		Non-agency-sponsored mortgages	
In millions of dollars	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Discount rate			
Adverse change of 10%	$ (8)	$—	$ (1)
Adverse change of 20%	(15)	(1)	(1)
Constant prepayment rate			
Adverse change of 10%	(21)	—	—
Adverse change of 20%	(40)	—	—
Anticipated net credit losses			
Adverse change of 10%	NM	—	—
Adverse change of 20%	NM	—	—

NM Anticipated net credit losses are not meaningful due to U.S. agency guarantees.

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 billions of dollars, except liquidation losses in millions	**2021**	2020	**2021**	2020	**2021**	2020
Securitized assets						
Residential mortgages[1]	**$29.2**	$16.9	**$0.4**	$0.5	**$10.6**	$26.2
Commercial and other	**26.2**	23.9	**—**	—	**—**	—
Total	**$55.4**	$40.8	**$0.4**	$0.5	**$10.6**	$26.2

(1) Securitized assets include $0.2 billion of personal loan securitizations as of December 31, 2021.

Mortgage Servicing Rights (MSRs)

In connection with the securitization of mortgage loans, Citi's U.S. consumer mortgage business generally retains the servicing rights, which entitle the Company to a future stream of cash flows based on the outstanding principal balances of the loans and the contractual servicing fee. Failure to service the loans in accordance with contractual requirements may lead to a termination of the servicing rights and the loss of future servicing fees.

These transactions create intangible assets referred to as MSRs, which are recorded at fair value on Citi's Consolidated Balance Sheet. The fair value of Citi's capitalized MSRs was $404 million and $336 million at December 31, 2021 and 2020, respectively. The MSRs correspond to principal loan balances of $47 billion and $53 billion as of December 31, 2021 and 2020, respectively.

The following table summarizes the changes in capitalized MSRs:

In millions of dollars	**2021**	2020
Balance, beginning of year	**$ 336**	$ 495
Originations	**92**	123
Changes in fair value of MSRs due to changes in inputs and assumptions	**43**	(204)
Other changes[1]	**(67)**	(78)
Sales of MSRs	**—**	—
Balance, as of December 31	**$ 404**	$ 336

(1) Represents changes due to customer payments and passage of time.

The fair value of the MSRs is primarily affected by changes in prepayments of mortgages that result from shifts in mortgage interest rates. Specifically, higher interest rates tend to lead to declining prepayments, which causes the fair value of the MSRs to increase. In managing this risk, Citigroup economically hedges a significant portion of the value of its MSRs through the use of interest rate derivative contracts, forward purchase and sale commitments of mortgage-backed securities and purchased securities, all classified as *Trading account assets*.

The Company receives fees during the course of servicing previously securitized mortgages. The amounts of these fees were as follows:

In millions of dollars	**2021**	2020	2019
Servicing fees	**$131**	$142	$148
Late fees	**3**	5	8
Ancillary fees	**—**	—	1
Total MSR fees	**$134**	$147	$157

In the Consolidated Statement of Income these fees are primarily classified as *Commissions and fees*, and changes in MSR fair values are classified as *Other revenue*.

Re-securitizations

The Company engages in re-securitization transactions in which debt securities are transferred to a VIE in exchange for new beneficial interests. Citi did not transfer non-agency (private label) securities to re-securitization entities during the years ended December 31, 2021 and 2020. These securities are backed by either residential or commercial mortgages and are often structured on behalf of clients.

As of December 31, 2021 and December 31, 2020, Citi held no retained interests in private label re-securitization transactions structured by Citi.

The Company also re-securitizes U.S. government-agency-guaranteed mortgage-backed (agency) securities. During the years ended December 31, 2021 and 2020, Citi transferred agency securities with a fair value of approximately $46.6 billion and $42.8 billion, respectively, to re-securitization entities.

As of December 31, 2021, the fair value of Citi-retained interests in agency re-securitization transactions structured by Citi totaled approximately $1.2 billion (including $641 million related to re-securitization transactions executed in 2021) compared to $1.6 billion as of December 31, 2020 (including $916 million related to re-securitization transactions executed in 2020), which is recorded in *Trading account assets*. The original fair values of agency re-securitization transactions in which Citi holds a retained interest as of December 31, 2021 and 2020 were approximately $78.4 billion and $83.6 billion, respectively.

As of December 31, 2021 and 2020, the Company did not consolidate any private label or agency re-securitization entities.

Citi-Administered Asset-Backed Commercial Paper Conduits

The Company is active in the asset-backed commercial paper conduit business as administrator of several multi-seller commercial paper conduits and also as a service provider to single-seller and other commercial paper conduits sponsored by third parties.

Citi's multi-seller commercial paper conduits are designed to provide the Company's clients access to low-cost funding in the commercial paper markets. The conduits purchase assets from or provide financing facilities to clients and are funded by issuing commercial paper to third-party investors. The conduits generally do not purchase assets originated by Citi. The funding of the conduits is facilitated by the liquidity support and credit enhancements provided by the Company.

As administrator to Citi's conduits, the Company is generally responsible for selecting and structuring assets purchased or financed by the conduits, making decisions regarding the funding of the conduits, including determining the tenor and other features of the commercial paper issued, monitoring the quality and performance of the conduits' assets and facilitating the operations and cash flows of the conduits. In return, the Company earns structuring fees from customers for individual transactions and earns an administration fee from the conduit, which is equal to the income from the client program and liquidity fees of the conduit after payment of conduit expenses. This administration fee is fairly stable, since most risks and rewards of the underlying assets are passed back to the clients. Once the asset pricing is negotiated, most ongoing income, costs and fees are relatively stable as a percentage of the conduit's size.

The conduits administered by Citi do not generally invest in liquid securities that are formally rated by third parties. The assets are privately negotiated and structured transactions that are generally designed to be held by the conduit, rather than actively traded and sold. The yield earned by the conduit on each asset is generally tied to the rate on the commercial paper issued by the conduit, thus passing interest rate risk to the client. Each asset purchased by the conduit is structured with transaction-specific

credit enhancement features provided by the third-party client seller, including over-collateralization, cash and excess spread collateral accounts, direct recourse or third-party guarantees. These credit enhancements are sized with the objective of approximating a credit rating of A or above, based on Citi's internal risk ratings. At December 31, 2021 and 2020, the commercial paper conduits administered by Citi had approximately $14.0 billion and $16.7 billion of purchased assets outstanding, respectively, and had incremental funding commitments with clients of approximately $18.3 billion and $17.1 billion, respectively.

Substantially all of the funding of the conduits is in the form of short-term commercial paper. At December 31, 2021 and 2020, the weighted average remaining lives of the commercial paper issued by the conduits were approximately 70 and 54 days, respectively.

The primary credit enhancement provided to the conduit investors is in the form of transaction-specific credit enhancements described above. Each asset purchased by the conduit is structured with transaction-specific credit enhancement features provided by the third-party client seller, including over-collateralization, cash and excess spread collateral accounts, direct recourse or third-party guarantees. These credit enhancements are sized with the objective of approximating a credit rating of A or above, based on Citi's internal risk ratings. In addition to the transaction specific credit enhancements, the conduits, other than the government- guaranteed loan conduit, have obtained letters of credit from the Company, which equal at least 8% to 10% of the conduit's assets with a minimum of $200 million. The letters of credit provided by the Company to the conduits total approximately $1.3 billion as of December 31, 2021 and $1.5 billion as of December 31, 2020. The net result across multi-seller conduits administered by the Company is that, in the event that defaulted assets exceed the transaction-specific credit enhancements described above, any losses in each conduit are allocated first to the Company and then to the commercial paper investors.

Citigroup also provides the conduits with two forms of liquidity agreements that are used to provide funding to the conduits in the event of a market disruption, among other events. Each asset of the conduits is supported by a transaction-specific liquidity facility in the form of an asset purchase agreement (APA). Under the APA, the Company has generally agreed to purchase non-defaulted eligible receivables from the conduit at par. The APA is not designed to provide credit support to the conduit, as it generally does not permit the purchase of defaulted or impaired assets. Any funding under the APA will likely subject the underlying conduit clients to increased interest costs. In addition, the Company provides the conduits with program-wide liquidity in the form of short-term lending commitments. Under these commitments, the Company has agreed to lend to the conduits in the event of a short-term disruption in the commercial paper market, subject to specified conditions. The Company receives fees for providing both types of liquidity agreements and considers these fees to be on fair market terms.

Finally, Citi is one of several named dealers in the commercial paper issued by the conduits and earns a market-based fee for providing such services. Along with third-party dealers, the Company makes a market in the commercial paper and may from time to time fund commercial paper pending sale to a third party. On specific dates with less liquidity in the market, the Company may hold in inventory commercial paper issued by conduits administered by the Company, as well as conduits administered by third parties. Separately, in the normal course of business, Citi purchases commercial paper, including commercial paper issued by Citigroup's conduits. At December 31, 2021 and 2020, the Company owned $4.9 billion and $6.6 billion, respectively, of the commercial paper issued by its administered conduits. The Company's investments were not driven by market illiquidity and the Company is not obligated under any agreement to purchase the commercial paper issued by the conduits.

The asset-backed commercial paper conduits are consolidated by Citi. The Company has determined that, through its roles as administrator and liquidity provider, it has the power to direct the activities that most significantly impact the entities' economic performance. These powers include its ability to structure and approve the assets purchased by the conduits, its ongoing surveillance and credit mitigation activities, its ability to sell or repurchase assets out of the conduits and its liability management. In addition, as a result of all the Company's involvement described above, it was concluded that Citi has an economic interest that could potentially be significant. However, the assets and liabilities of the conduits are separate and apart from those of Citigroup. No assets of any conduit are available to satisfy the creditors of Citigroup or any of its other subsidiaries.

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.

Citi 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 Citi entities may purchase some portion of a CLO's liabilities for investment purposes. In addition, Citi 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.

The following tables summarize selected cash flow information and retained interests related to Citigroup CLOs:

In billions of dollars	**2021**	2020	2019
Principal securitized	**$ —**	$0.1	$ —
Proceeds from new securitizations	**—**	0.1	—
Cash flows received on retained interests and other net cash flows	**1.1**	—	—
Purchases of previously transferred financial assets	**0.2**	—	—

In millions of dollars	**Dec. 31, 2021**	Dec. 31, 2020	Dec. 31, 2019
Carrying value of retained interests	**$921**	$1,611	$1,404

All of Citi's retained interests were held-to-maturity securities as of December 31, 2021 and 2020.

Asset-Based Financing

The Company provides loans and other forms of financing to VIEs that hold assets. Those loans are subject to the same credit approvals as all other loans originated or purchased by the Company. Financings in the form of debt securities or derivatives are, in most circumstances, reported in *Trading account assets* and accounted for at fair value through earnings. The Company generally does not have the power to direct the activities that most significantly impact these VIEs' economic performance; thus, it does not consolidate them.

The primary types of Citi's asset-based financings, total assets of the unconsolidated VIEs with significant involvement and Citi's maximum exposure to loss are shown below. For Citi to realize the maximum loss, the VIE (borrower) would have to default with no recovery from the assets held by the VIE.

	December 31, 2021	
In millions of dollars	**Total unconsolidated VIE assets**	**Maximum exposure to unconsolidated VIEs**
Type		
Commercial and other real estate	**$ 32,932**	**$ 7,461**
Corporate loans	**18,257**	**12,581**
Other (including investment funds, airlines and shipping)	**184,358**	**25,528**
Total	**$235,547**	**$45,570**

	December 31, 2020	
In millions of dollars	Total unconsolidated VIE assets	Maximum exposure to unconsolidated VIEs
Type		
Commercial and other real estate	$ 34,570	$ 7,758
Corporate loans	12,022	7,654
Other (including investment funds, airlines and shipping)	167,613	20,442
Total	$214,205	$35,854

Municipal Securities Tender Option Bond (TOB) Trusts

Municipal TOB trusts may hold fixed- or floating-rate, taxable or tax-exempt securities issued by state and local governments and municipalities. TOB trusts are typically structured as single-issuer entities whose assets are purchased from either the Company or from other investors in the municipal securities market. TOB trusts finance the purchase of their municipal assets by issuing two classes of certificates: long-dated, floating rate certificates ("Floaters") that are putable pursuant to a liquidity facility and residual interest certificates ("Residuals"). The Floaters are purchased by third-party investors, typically tax-exempt money market funds. The Residuals are purchased by the original owner of the municipal securities that are being financed.

From Citigroup's perspective, there are two types of TOB trusts: customer and non-customer. Customer TOB trusts are those trusts utilized by customers of the Company to finance their securities, generally municipal securities. The Residuals issued by these trusts are purchased by the customer being financed. Non-customer TOB trusts are generally used by the Company to finance its own municipal securities investments; the Residuals issued by non-customer TOB trusts are purchased by the Company.

With respect to both customer and non-customer TOB trusts, Citi may provide remarketing agent services. If Floaters are optionally tendered and the Company, in its role as remarketing agent, is unable to find a new investor to purchase the optionally tendered Floaters within a specified period of time, Citigroup may, but is not obligated to, purchase the tendered Floaters into its own inventory. The level of the Company's inventory of such Floaters fluctuates.

For certain customer TOB trusts, Citi may also serve as a voluntary advance provider. In this capacity, the Company may, but is not obligated to, make loan advances to customer TOB trusts to purchase optionally tendered Floaters that have not otherwise been successfully remarketed to new investors. Such loans are secured by pledged Floaters. As of December 31, 2021, Citi had no outstanding voluntary advances to customer TOB trusts.

For certain non-customer trusts, the Company also provides credit enhancement. At December 31, 2021 and 2020, none of the municipal bonds owned by non-customer TOB trusts were subject to a credit guarantee provided by the Company.

Citigroup also provides liquidity services to many customer and non-customer trusts. If a trust is unwound early due to an event other than a credit event on the underlying municipal bonds, the underlying municipal bonds are sold out of the trust and bond sale proceeds are used to redeem the outstanding trust certificates. If this results in a shortfall between the bond sale proceeds and the redemption price of the tendered Floaters, the Company, pursuant to the liquidity agreement, would be obligated to make a payment to the trust to satisfy that shortfall. For certain customer TOB trusts, Citigroup has also executed a reimbursement agreement with the holder of the Residual, pursuant to which the Residual holder is obligated to reimburse the Company for any payment the Company makes under the liquidity arrangement. These reimbursement agreements may be subject to daily margining based on changes in the market value of the underlying municipal bonds. In cases where a third party provides liquidity to a non-customer TOB trust, a similar reimbursement arrangement may be executed, whereby the Company (or a consolidated subsidiary of the Company), as Residual holder, would absorb any losses incurred by the liquidity provider.

For certain other non-customer TOB trusts, Citi serves as tender option provider. The tender option provider arrangement allows Floater holders to put their interests directly to the Company at any time, subject to the requisite notice period requirements, at a price of par.

At December 31, 2021 and 2020, liquidity agreements provided with respect to customer TOB trusts totaled $1.5 billion and $1.6 billion, respectively, of which $0.6 billion and $0.8 billion, respectively, were offset by reimbursement agreements. For the remaining exposure related to TOB transactions, where the residual owned by the customer was at least 25% of the bond value at the inception of the transaction, no reimbursement agreement was executed.

Citi considers both customer and non-customer TOB trusts to be VIEs. Customer TOB trusts are not consolidated by the Company, as the power to direct the activities that most significantly impact the trust's economic performance rests with the customer Residual holder, which may unilaterally cause the sale of the trust's bonds.

Non-customer TOB trusts generally are consolidated because the Company holds the Residual interest and thus has the unilateral power to cause the sale of the trust's bonds.

The Company also provides other liquidity agreements or letters of credit to customer-sponsored municipal investment funds, which are not variable interest entities, and municipality-related issuers that totaled $2 billion as of December 31, 2021 and $3.6 billion as of December 31, 2020. These liquidity agreements and letters of credit are offset by reimbursement agreements with various term-out provisions.

Municipal Investments

Municipal investment transactions include debt and equity interests in partnerships that finance the construction and rehabilitation of low-income housing, facilitate lending in new or underserved markets or finance the construction or operation of renewable municipal energy facilities. Citi generally invests in these partnerships as a limited partner and earns a return primarily through the receipt of tax credits and grants earned from the investments made by the partnership. The Company may also provide construction loans or permanent loans for the development or operation of real estate properties held by partnerships. These entities are generally considered VIEs. The power to direct the activities of these entities is typically held by the general partner. Accordingly, these entities are not consolidated by Citigroup.

Client Intermediation

Client intermediation transactions represent a range of transactions designed to provide investors with specified returns based on the returns of an underlying security, referenced asset or index. These transactions include credit-linked notes and equity-linked notes. In these transactions, the VIE typically obtains exposure to the underlying security, referenced asset or index through a derivative instrument, such as a total-return swap or a credit-default swap. In turn, the VIE issues notes to investors that pay a return based on the specified underlying security, referenced asset or index. The VIE invests the proceeds in a financial asset or a guaranteed insurance contract that serves as collateral for the derivative contract over the term of the transaction. The Company's involvement in these transactions includes being the counterparty to the VIE's derivative instruments and investing in a portion of the notes issued by the VIE. In certain transactions, the investor's maximum risk of loss is limited and the Company absorbs risk of loss above a specified level. Citi does not have the power to direct the activities of the VIEs that most significantly impact their economic performance and thus it does not consolidate them.

Citi's maximum risk of loss in these transactions is defined as the amount invested in notes issued by the VIE and the notional amount of any risk of loss absorbed by Citi through a separate instrument issued by the VIE. The derivative instrument held by the Company may generate a receivable from the VIE (e.g., where the Company purchases credit protection from the VIE in connection with the VIE's issuance of a credit-linked note), which is collateralized by the assets owned by the VIE. These derivative instruments are not considered variable interests and any associated receivables are not included in the calculation of maximum exposure to the VIE.

Investment Funds

The Company is the investment manager for certain investment funds and retirement funds that invest in various asset classes including private equity, hedge funds, real estate, fixed income and infrastructure. Citigroup earns a management fee, which is a percentage of capital under management, and may earn performance fees. In addition, for some of these funds the Company has an ownership interest in the investment funds. Citi has also established a number of investment funds as opportunities for qualified colleagues to invest in private equity investments. The Company acts as investment manager for these funds and may provide colleagues with financing on both recourse and non-recourse bases for a portion of the colleagues' investment commitments.

22. DERIVATIVES

In the ordinary course of business, Citigroup 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. Citigroup enters into derivative contracts relating to interest rate, foreign currency, commodity and other market/credit risks for the following reasons:

- *Trading Purposes*: Citigroup trades derivatives as an active market maker. Citigroup 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. Citigroup also manages its derivative risk positions through offsetting trade activities, controls focused on price verification and daily reporting of positions to senior managers.
- *Hedging*: Citigroup uses derivatives in connection with its own risk management activities to hedge certain risks or reposition the risk profile of the Company. Hedging may be accomplished by applying hedge accounting in accordance with ASC 815, *Derivatives and Hedging*, or by an economic hedge. For example, Citigroup 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 AFS securities, commodities and borrowings, as well as other interest-sensitive assets and liabilities. In addition, foreign exchange contracts are used to hedge non-U.S.-dollar-denominated debt, foreign currency-denominated AFS securities and net investment exposures.

Derivatives may expose Citigroup to market, credit or liquidity risks in excess of the amounts recorded on the Consolidated Balance Sheet. 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 Citi is not adequate to cover such losses. The recognition in earnings of unrealized gains on derivative transactions is subject to management's assessment of the probability of counterparty default. Liquidity risk is the potential exposure that arises when the size of a derivative position may affect the ability to monetize the position in a reasonable period of time and at a reasonable cost in periods of high volatility and financial stress.

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

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

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

Exposure to credit risk on derivatives is affected by market volatility, which may impair the ability of counterparties to satisfy their obligations to the Company. Credit limits are established and closely monitored for customers engaged in derivatives transactions. Citi 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, Citi generally transacts much lower volumes of derivatives under master netting agreements where Citi 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 Citigroup's derivatives activities, based on notional amounts, is presented in the table below. Derivative notional amounts are reference amounts from which contractual payments are derived and do not represent a complete measure of Citi's exposure to derivative transactions. Citi'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 Citi 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 Citi's market share, levels of client activity and other factors. All derivatives are recorded in *Trading account assets/Trading account liabilities* on the Consolidated Balance Sheet.

Derivative Notionals

	Hedging instruments under ASC 815		Trading derivative instruments	
In millions of dollars	**December 31, 2021**	December 31, 2020	**December 31, 2021**	December 31, 2020
Interest rate contracts				
Swaps	**$267,035**	$334,351	**$21,873,538**	$17,724,147
Futures and forwards	**—**	—	**2,383,702**	4,142,514
Written options	**—**	—	**1,584,451**	1,573,483
Purchased options	**—**	—	**1,428,376**	1,418,255
Total interest rate contracts	**$267,035**	$334,351	**$27,270,067**	$24,858,399
Foreign exchange contracts				
Swaps	**$ 47,298**	$ 65,709	**$ 6,288,193**	$ 6,567,304
Futures, forwards and spot	**50,926**	37,080	**4,316,242**	3,945,391
Written options	**—**	47	**664,942**	907,338
Purchased options	**—**	53	**651,958**	900,626
Total foreign exchange contracts	**$ 98,224**	$102,889	**$11,921,335**	$12,320,659
Equity contracts				
Swaps	**$ —**	$ —	**$ 269,062**	$ 274,098
Futures and forwards	**—**	—	**71,363**	67,025
Written options	**—**	—	**492,433**	441,003
Purchased options	**—**	—	**398,129**	328,202
Total equity contracts	**$ —**	$ —	**$ 1,230,987**	$ 1,110,328
Commodity and other contracts				
Swaps	**$ —**	$ —	**$ 91,962**	$ 80,127
Futures and forwards	**2,096**	924	**157,195**	143,175
Written options	**—**	—	**51,224**	71,376
Purchased options	**—**	—	**47,868**	67,849
Total commodity and other contracts	**$ 2,096**	$ 924	**$ 348,249**	$ 362,527
Credit derivatives[1]				
Protection sold	**$ —**	$ —	**$ 572,486**	$ 543,607
Protection purchased	**—**	—	**645,996**	612,770
Total credit derivatives	**$ —**	$ —	**$ 1,218,482**	$ 1,156,377
Total derivative notionals	**$367,355**	$438,164	**$41,989,120**	$39,808,290

(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 tables present the gross and net fair values of the Company's derivative transactions and the related offsetting amounts as of December 31, 2021 and 2020. 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 tables reflect rules 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 tables reflect a reduction of approximately $340 billion and $280 billion as of December 31, 2021 and 2020, 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 tables also present 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

In millions of dollars at December 31, 2021	Derivatives classified in Trading account assets/liabilities[1][2]	
Derivatives instruments designated as ASC 815 hedges	**Assets**	**Liabilities**
Over-the-counter	$ 1,167	$ 6
Cleared	122	89
Interest rate contracts	$ 1,289	$ 95
Over-the-counter	$ 1,338	$ 1,472
Cleared	6	—
Foreign exchange contracts	$ 1,344	$ 1,472
Total derivatives instruments designated as ASC 815 hedges	$ 2,633	$ 1,567
Derivatives instruments not designated as ASC 815 hedges		
Over-the-counter	$ 152,524	$ 138,114
Cleared	11,579	11,821
Exchange traded	96	44
Interest rate contracts	$ 164,199	$ 149,979
Over-the-counter	$ 133,357	$ 133,548
Cleared	848	278
Foreign exchange contracts	$ 134,205	$ 133,826
Over-the-counter	$ 23,452	$ 28,352
Cleared	19	—
Exchange traded	21,781	21,332
Equity contracts	$ 45,252	$ 49,684
Over-the-counter	$ 29,279	$ 29,833
Exchange traded	1,065	1,546
Commodity and other contracts	$ 30,344	$ 31,379
Over-the-counter	$ 6,896	$ 6,959
Cleared	3,322	4,056
Credit derivatives	$ 10,218	$ 11,015
Total derivatives instruments not designated as ASC 815 hedges	$ 384,218	$ 375,883
Total derivatives	$ 386,851	$ 377,450
Less: Netting agreements[3]	$(292,628)	$(292,628)
Less: Netting cash collateral received/paid[4]	(24,447)	(29,306)
Net receivables/payables included on the Consolidated Balance Sheet[5]	$ 69,776	$ 55,516
Additional amounts subject to an enforceable master netting agreement, but not offset on the Consolidated Balance Sheet		
Less: Cash collateral received/paid	$ (907)	$ (538)
Less: Non-cash collateral received/paid	(5,777)	(13,607)
Total net receivables/payables[5]	$ 63,092	$ 41,371

(1) The derivatives fair values are also presented in Note 24 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) Represents the netting of balances with the same counterparty under enforceable netting agreements. Approximately $259 billion, $14 billion and $20 billion of the netting against trading account asset/liability balances is attributable to each of the OTC, cleared and exchange-traded derivatives, respectively.
(4) Represents the netting of cash collateral paid and received by counterparties under enforceable credit support agreements. Substantially all netting of cash collateral received and paid is against OTC derivative assets and liabilities, respectively.
(5) The net receivables/payables include approximately $10 billion of derivative asset and $11 billion of derivative liability fair values not subject to enforceable master netting agreements, respectively.

In millions of dollars at December 31, 2020	Derivatives classified in Trading account assets/liabilities[1][2]	
Derivatives instruments designated as ASC 815 hedges	Assets	Liabilities
Over-the-counter	$ 1,781	$ 161
Cleared	74	319
Interest rate contracts	$ 1,855	$ 480
Over-the-counter	$ 2,037	$ 2,042
Foreign exchange contracts	$ 2,037	$ 2,042
Total derivatives instruments designated as ASC 815 hedges	$ 3,892	$ 2,522
Derivatives instruments not designated as ASC 815 hedges		
Over-the-counter	$ 228,519	$ 209,330
Cleared	11,041	12,563
Exchange traded	46	38
Interest rate contracts	$ 239,606	$ 221,931
Over-the-counter	$ 153,791	$ 152,784
Cleared	842	1,239
Exchange traded	—	1
Foreign exchange contracts	$ 154,633	$ 154,024
Over-the-counter	$ 29,244	$ 41,036
Cleared	1	18
Exchange traded	21,274	22,515
Equity contracts	$ 50,519	$ 63,569
Over-the-counter	$ 13,659	$ 17,076
Exchange traded	879	1,017
Commodity and other contracts	$ 14,538	$ 18,093
Over-the-counter	$ 7,826	$ 7,951
Cleared	1,963	2,178
Credit derivatives	$ 9,789	$ 10,129
Total derivatives instruments not designated as ASC 815 hedges	$ 469,085	$ 467,746
Total derivatives	$ 472,977	$ 470,268
Less: Netting agreements[3]	$ (364,879)	$ (364,879)
Less: Netting cash collateral received/paid[4]	(31,137)	(37,432)
Net receivables/payables included on the Consolidated Balance Sheet[5]	$ 76,961	$ 67,957
Additional amounts subject to an enforceable master netting agreement, but not offset on the Consolidated Balance Sheet		
Less: Cash collateral received/paid	$ (1,567)	$ (473)
Less: Non-cash collateral received/paid	(7,408)	(13,087)
Total net receivables/payables[5]	$ 67,986	$ 54,397

(1) The derivatives fair values are also presented in Note 24 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) Represents the netting of balances with the same counterparty under enforceable netting agreements. Approximately $336 billion, $9 billion and $20 billion of the netting against trading account asset/liability balances is attributable to each of the OTC, cleared and exchange-traded derivatives, respectively.

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

(5) The net receivables/payables include approximately $6 billion of derivative asset and $8 billion of derivative liability fair values not subject to enforceable master netting agreements, respectively.

For the years ended December 31, 2021, 2020 and 2019, amounts recognized in *Principal transactions* in the Consolidated Statement of Income include certain derivatives not designated in a qualifying hedging relationship. Citigroup 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 6 to the Consolidated Financial Statements for further information.

The amounts recognized in *Other revenue* in the Consolidated Statement of Income related to derivatives not designated in a qualifying hedging relationship are shown below. The table below does not include any offsetting gains (losses) on the economically hedged items to the extent that such amounts are also recorded in *Other revenue*.

	Gains (losses) included in Other revenue		
	Year ended December 31,		
In millions of dollars	**2021**	2020	2019
Interest rate contracts	**$ (70)**	$ 63	$ 57
Foreign exchange	**(102)**	(57)	(29)
Total	**$(172)**	$ 6	$ 28

Accounting for Derivative Hedging

Citigroup 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 foreign exchange risk, that causes changes in the fair value of an asset or liability or variability in the expected future cash flows of an existing asset, liability or a forecasted transaction that may affect earnings.

Derivative contracts hedging the risks associated with changes in fair value are referred to as fair value hedges, while contracts hedging the variability of expected future cash flows are cash flow hedges. Hedges that utilize derivatives or debt instruments to manage the foreign exchange risk associated with equity investments in non-U.S.-dollar-functional-currency foreign subsidiaries (net investment in a foreign operation) are net investment hedges.

To qualify as an accounting hedge under the hedge accounting rules (versus an economic hedge where hedge accounting is not applied), 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. The assessment of effectiveness may exclude changes in the value of the hedged item that are unrelated to the risks being hedged and the changes in fair value of the derivative associated with time value. Citi excludes changes in the cross-currency basis associated with cross-currency swaps from the assessment of hedge effectiveness and records it in *Other comprehensive income*.

Discontinued Hedge Accounting

A hedging instrument must be highly effective in accomplishing the hedge objective of offsetting either changes in the fair value or cash flows of the hedged item for the risk being hedged. Management may voluntarily de-designate an accounting hedge at any time, but if a hedging relationship is not highly effective, it no longer qualifies for hedge accounting and must be de-designated. Subsequent changes in the fair value of the derivative are recognized in *Other revenue* or *Principal transactions*, similar to trading derivatives, with no offset recorded related to the hedged item.

For fair value hedges, any changes in the fair value of the hedged item remain as part of the basis of the asset or liability and are ultimately realized as an element of the yield on the item. For cash flow hedges, changes in fair value of the end-user derivative remain in *Accumulated other comprehensive income (loss) (AOCI)* and are included in the earnings of future periods when the forecasted hedged cash flows impact earnings. However, if it becomes probable that some or all of the hedged forecasted transactions will not occur, any amounts that remain in *AOCI* related to these transactions must be immediately reflected in *Other revenue*.

The foregoing criteria are applied on a decentralized basis, consistent with the level at which market risk is managed, but are subject to various limits and controls. The underlying asset, liability or forecasted transaction may be an individual item or a portfolio of similar items.

Fair Value Hedges

Hedging of Benchmark Interest Rate Risk

Citigroup's fair value hedges are primarily hedges of fixed-rate long-term debt or assets, such as available-for-sale debt securities or loans.

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 hedged item attributable to the hedged risk are presented within *Interest revenue* or *Interest expense* based on whether the hedged item is an asset or a liability.

Citigroup has executed a last-of-layer hedge, which permits an entity to hedge the interest rate risk of a stated portion of a closed portfolio of prepayable financial assets that are expected to remain outstanding for the designated tenor of the hedge. In accordance with ASC 815, an entity may exclude prepayment risk when measuring the change in fair value of the hedged item attributable to interest rate risk under the last-of-layer approach. Similar to other fair value hedges, where the hedged item is an asset, the fair value of the hedged item attributable to interest rate risk will be presented in *Interest revenue* along with the change in the fair value of the hedging instrument.

Hedging of Foreign Exchange Risk

Citigroup hedges the change in fair value attributable to foreign exchange rate movements in available-for-sale debt securities and long-term debt that are denominated in currencies other than the functional currency of the entity holding the securities or issuing the debt. The hedging instrument is generally a forward foreign exchange contract or a cross-currency swap contract. Citigroup considers the premium associated with forward contracts (i.e., the differential between the spot and contractual forward rates) as the cost of hedging; this amount is excluded from the assessment of hedge effectiveness and is generally reflected directly in earnings over the life of the hedge. Citi also excludes changes in cross-currency basis associated with cross-currency swaps from the assessment of hedge effectiveness and records it in *Other comprehensive income.*

Hedging of Commodity Price Risk

Citigroup 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, Citigroup 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. Citi also excludes changes in forward rates from the assessment of hedge effectiveness and records it in *Other comprehensive income.*

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

	Gains (losses) on fair value hedges[1]					
	Year ended December 31,					
	2021		2020		2019	
In millions of dollars	**Other revenue**	**Net interest income**	Other revenue	Net interest income	Other revenue	Net interest income
Gain (loss) on the hedging derivatives included in assessment of the effectiveness of fair value hedges						
Interest rate hedges	**$ —**	**$(5,425)**	$ —	$ 4,189	$ —	$ 2,273
Foreign exchange hedges	**(627)**	**—**	1,442	—	337	—
Commodity hedges	**(3,983)**	**—**	(164)	—	(33)	—
Total gain (loss) on the hedging derivatives included in assessment of the effectiveness of fair value hedges	**$(4,610)**	**$(5,425)**	$ 1,278	$ 4,189	$ 304	$ 2,273
Gain (loss) on the hedged item in designated and qualifying fair value hedges						
Interest rate hedges	**$ —**	**$ 5,043**	$ —	$(4,537)	$ —	$(2,085)
Foreign exchange hedges	**628**	**—**	(1,442)	—	(337)	—
Commodity hedges	**3,973**	**—**	164	—	33	—
Total gain (loss) on the hedged item in designated and qualifying fair value hedges	**$ 4,601**	**$ 5,043**	$(1,278)	$(4,537)	$ (304)	$(2,085)
Net gain (loss) on the hedging derivatives excluded from assessment of the effectiveness of fair value hedges						
Interest rate hedges	**$ —**	**$ (9)**	$ —	$ (23)	$ —	$ 3
Foreign exchange hedges[2]	**79**	**—**	(73)	—	(109)	—
Commodity hedges	**5**	**—**	131	—	41	—
Total net gain (loss) on the hedging derivatives excluded from assessment of the effectiveness of fair value hedges	**$ 84**	**$ (9)**	$ 58	$ (23)	$ (68)	$ 3

(1) Gain (loss) amounts for interest rate risk hedges are included in *Interest revenue/Interest expense*. The accrued interest income on fair value hedges is recorded in *Net interest income* and is excluded from this table.
(2) Amounts relate to the premium associated with forward contracts (differential between spot and contractual forward rates) that are excluded from the assessment of hedge effectiveness and are generally reflected directly in earnings. Amounts related to cross-currency basis, which are recognized in *AOCI*, are not reflected in the table above. The amount of cross-currency basis included in *AOCI* was $2 million and $(23) million for the years ended December 31, 2021 and 2020, respectively.

Cumulative Basis Adjustment

Upon electing to apply ASC 815 fair value hedge accounting, the carrying value of the hedged item is adjusted to reflect the cumulative changes in the hedged risk. This cumulative 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 Citi's hedged assets and liabilities under qualifying fair value hedges at December 31, 2021 and 2020, 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, 2021			
Debt securities AFS[1][3]	**$ 62,733**	**$ 149**	**$ 212**
Long-term debt	**149,305**	**623**	**3,936**
As of December 31, 2020			
Debt securities AFS[2][3]	$ 81,082	$ 28	$ 342
Long-term debt	169,026	5,554	4,989

(1) These amounts include a cumulative basis adjustment of $24 million for active hedges and $(92) million for de-designated hedges as of December 31, 2021, related to certain prepayable financial assets previously designated as the hedged item in a fair value hedge using the last-of-layer approach. The Company designated approximately $6 billion as the hedged amount (from a closed portfolio of prepayable financial assets with a carrying value of $25 billion as of December 31, 2021) in a last-of-layer hedging relationship.

(2) These amounts include a cumulative basis adjustment of $(18) million for active hedges and $62 million for de-designated hedges as of December 31, 2020, related to certain prepayable financial assets previously designated as the hedged item in a fair value hedge using the last-of-layer approach. The Company designated approximately $3 billion as the hedged amount (from a closed portfolio of prepayable financial assets with a carrying value of $19 billion as of December 31, 2020) in a last-of-layer hedging relationship.

(3) Carrying amount represents the amortized cost.

Cash Flow Hedges

Citigroup hedges the variability of forecasted cash flows due to changes in contractually specified interest rates associated with floating-rate assets/liabilities and other forecasted transactions. Variable cash flows from those liabilities are synthetically converted to fixed-rate cash flows by entering into receive variable, pay-fixed interest rate swaps and receive-variable, pay-fixed forward-starting interest rate swaps. Variable cash flows associated with certain assets are synthetically converted to fixed-rate cash flows by entering into receive-fixed, pay-variable interest rate swaps. These cash flow hedging relationships use either regression analysis or dollar-offset ratio analysis to assess whether the hedging relationships are highly effective at inception and on an ongoing basis.

Citigroup hedges the variability from changes in a contractually specified rate and recognizes the entire change in fair value of the cash flow hedging instruments in *AOCI*. The full change in the value of the hedging instrument is required to be recognized in *AOCI*, and then recognized in earnings in the same period that the cash flows impact earnings. The pretax change in *AOCI* from cash flow hedges is presented below:

In millions of dollars	**2021**		2020		2019	
Amount of gain (loss) recognized in *AOCI* on derivatives						
Interest rate contracts		**$ (847)**		$2,670		$ 746
Foreign exchange contracts		**(51)**		(15)		(17)
Total gain (loss) recognized in *AOCI*		**$ (898)**		$2,655		$ 729
	Other revenue	**Net interest income**	Other revenue	Net interest income	Other revenue	Net interest income
Amount of gain (loss) reclassified from *AOCI* to earnings[1]						
Interest rate contracts	**$ —**	**$ 1,075**	$ —	$ 734	$ —	$ (384)
Foreign exchange contracts	**(4)**	**—**	(4)	—	(7)	—
Total gain (loss) reclassified from *AOCI* into earnings	**$ (4)**	**$ 1,075**	$ (4)	$ 734	$ (7)	$ (384)
Net pretax change in cash flow hedges included within *AOCI*		**$(1,969)**		$1,925		$1,120

(1) All amounts reclassified into earnings for interest rate contracts are included in *Interest revenue/Interest expense (Net interest income)*. For all other hedges, the amounts reclassified to earnings are included primarily in *Other revenue* and *Net interest income* in the Consolidated Statement of Income.

For cash flow hedges, the entire change in the fair value of the hedging derivative is recognized in *AOCI* and then reclassified to earnings in the same period that the forecasted hedged cash flows impact earnings. The net gain (loss) associated with cash flow hedges expected to be reclassified from *AOCI* within 12 months of December 31, 2021 is approximately $614 million. The maximum length of time over which forecasted cash flows are hedged is 10 years.

The after-tax impact of cash flow hedges on *AOCI* is shown in Note 19 to the Consolidated Financial Statements.

Net Investment Hedges

Consistent with ASC 830-20, *Foreign Currency Matters—Foreign Currency Transactions*, ASC 815 allows the hedging of the foreign currency risk of a net investment in a foreign operation. Citigroup uses foreign currency forwards, cross-currency swaps, options and foreign currency-denominated debt instruments to manage the foreign exchange risk associated with Citigroup's equity investments in several non-U.S.-dollar-functional-currency foreign subsidiaries. Citigroup records the change in the carrying amount of these investments in *Foreign currency translation adjustment* within *AOCI*. Simultaneously, the effective portion of the hedge of this exposure is also recorded in *Foreign currency translation adjustment* and any ineffective portion is immediately recorded in earnings.

For derivatives designated as net investment hedges, Citigroup follows the forward-rate method outlined in ASC 815-35-35. According to that method, all changes in fair value, including changes related to the forward-rate component of the foreign currency forward contracts and the time value of foreign currency options, are recorded in *Foreign currency translation adjustment* within *AOCI*.

For foreign currency-denominated debt instruments that are designated as hedges of net investments, the translation gain or loss that is recorded in *Foreign currency translation adjustment* is based on the spot exchange rate between the functional currency of the respective subsidiary and the U.S. dollar, which is the functional currency of Citigroup. To the extent that the notional amount of the hedging instrument exactly matches the hedged net investment, and the underlying exchange rate of the derivative hedging instrument relates to the exchange rate between the functional currency of the net investment and Citigroup's functional currency (or, in the case of a non-derivative debt instrument, such instrument is denominated in the functional currency of the net investment), no ineffectiveness is recorded in earnings.

The pretax gain (loss) recorded in *Foreign currency translation adjustment* within *AOCI*, related to net investment hedges, was $855 million, $(600) million and $(569) million for the years ended December 31, 2021, 2020 and 2019, respectively.

Economic Hedges

Citigroup often uses economic hedges when hedge accounting would be too complex or operationally burdensome. End-user derivatives that are economic hedges are carried at fair value, with changes in value included in either *Principal transactions* or *Other revenue*.

For asset/liability management hedging, fixed-rate long-term debt is recorded at amortized cost under GAAP.

For other hedges that either do not meet the ASC 815 hedging criteria or for which management decides not to apply ASC 815 hedge accounting, the derivative is recorded at fair value on the balance sheet with the associated changes in fair value recorded in earnings, while the debt continues to be carried at amortized cost. Therefore, current earnings are affected by the interest rate shifts and other factors that cause a change in the swap's value, but for which no offsetting change in value is recorded on the debt.

Citigroup may alternatively elect to account for the debt at fair value under the fair value option. Once the irrevocable election is made upon issuance of the debt, the full change in fair value of the debt is reported in earnings. The changes in fair value of the related interest rate swap are also reflected in earnings, which provides a natural offset to the debt's fair value change. To the extent that the two amounts differ because the full change in the fair value of the debt includes risks not offset by the interest rate swap, the difference is automatically captured in current earnings.

Additional economic hedges include hedges of the credit risk component of commercial loans and loan commitments. Citigroup periodically evaluates its hedging strategies in other areas and may designate either an accounting hedge or an economic hedge after considering the relative costs and benefits. Economic hedges are also employed when the hedged item itself is marked to market through current earnings, such as hedges of commitments to originate one- to four-family mortgage loans to be HFS and MSRs.

Credit Derivatives

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

Citi monitors its counterparty credit risk in credit derivative contracts. As of December 31, 2021 and 2020, approximately 99% and 97%, respectively, of the gross receivables are from counterparties with which Citi maintains master netting agreements, collateral agreements or settles daily. A majority of Citi's top 15 counterparties (by receivable balance owed to Citi) 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 Citi 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 entity and are generally limited to the market standard of failure to pay on indebtedness and bankruptcy of the reference entity 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 entity. 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 Citi's credit derivatives portfolio by counterparty and derivative form:

In millions of dollars at December 31, 2021	Fair values		Notionals	
	Receivable[1]	Payable[2]	Protection purchased	Protection sold
By industry of counterparty				
Banks	$ 2,375	$ 3,031	$108,415	$103,756
Broker-dealers	1,962	1,139	44,364	40,068
Non-financial	113	306	2,785	2,728
Insurance and other financial institutions	5,768	6,539	490,432	425,934
Total by industry of counterparty	$10,218	$11,015	$645,996	$572,486
By instrument				
Credit default swaps and options	$ 9,923	$10,234	$628,136	$565,131
Total return swaps and other	295	781	17,860	7,355
Total by instrument	$10,218	$11,015	$645,996	$572,486
By rating of reference entity				
Investment grade	$ 4,149	$ 4,258	$511,652	$448,944
Non-investment grade	6,069	6,757	134,344	123,542
Total by rating of reference entity	$10,218	$11,015	$645,996	$572,486
By maturity				
Within 1 year	$ 878	$ 1,462	$133,866	$115,603
From 1 to 5 years	6,674	6,638	454,617	413,174
After 5 years	2,666	2,915	57,513	43,709
Total by maturity	$10,218	$11,015	$645,996	$572,486

(1) The fair value amount receivable is composed of $3,705 million under protection purchased and $6,513 million under protection sold.
(2) The fair value amount payable is composed of $7,354 million under protection purchased and $3,661 million under protection sold.

In millions of dollars at December 31, 2020	Fair values		Notionals	
	Receivable[1]	Payable[2]	Protection purchased	Protection sold
By industry of counterparty				
Banks	$ 2,902	$ 3,187	$117,685	$120,739
Broker-dealers	1,770	1,215	46,928	44,692
Non-financial	109	90	5,740	2,217
Insurance and other financial institutions	5,008	5,637	442,417	375,959
Total by industry of counterparty	$ 9,789	$10,129	$612,770	$543,607
By instrument				
Credit default swaps and options	$ 9,254	$ 9,254	$599,633	$538,426
Total return swaps and other	535	875	13,137	5,181
Total by instrument	$ 9,789	$10,129	$612,770	$543,607
By rating of reference entity				
Investment grade	$ 4,136	$ 4,037	$478,643	$418,147
Non-investment grade	5,653	6,092	134,127	125,460
Total by rating of reference entity	$ 9,789	$10,129	$612,770	$543,607
By maturity				
Within 1 year	$ 914	$ 1,355	$134,080	$125,464
From 1 to 5 years	6,022	5,991	421,682	374,376
After 5 years	2,853	2,783	57,008	43,767
Total by maturity	$ 9,789	$10,129	$612,770	$543,607

(1) The fair value amount receivable is composed of $3,514 million under protection purchased and $6,275 million under protection sold.
(2) The fair value amount payable is composed of $7,037 million under protection purchased and $3,092 million under protection sold.

Fair values included in the above tables are prior to application of any netting agreements and cash collateral. For notional amounts, Citi 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. Citi's internal ratings are in line with the related external rating system.

Citigroup 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 entity 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 December 31, 2021 and 2020 was $19 billion and $25 billion, respectively. The Company posted $16 billion and $22 billion as collateral for this exposure in the normal course of business as of December 31, 2021 and 2020, respectively.

A downgrade could trigger additional collateral or cash settlement requirements for the Company and certain affiliates. In the event that Citigroup and Citibank were downgraded a single notch by all three major rating agencies as of December 31, 2021, the Company could be required to post an additional $1.3 billion 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 $0.1 billion upon the single notch downgrade, resulting in aggregate cash obligations and collateral requirements of approximately $1.4 billion.

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 $2.9 billion and $2.0 billion as of December 31, 2021 and 2020, respectively.

At December 31, 2021, the fair value of these previously derecognized assets was $2.9 billion. The fair value of the total return swaps as of December 31, 2021 was $13 million recorded as gross derivative assets and $58 million recorded as gross derivative liabilities. At December 31, 2020, the fair value of these previously derecognized assets was $2.2 billion, and the fair value of the total return swaps was $135 million recorded as gross derivative assets and $7 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.

23. 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 Citigroup's total credit exposure. Although Citigroup's portfolio of financial instruments is broadly diversified along industry, 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, 2021, Citigroup'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 and investments issued by the U.S. government and its agencies, amounted to $414.5 billion and $370.1 billion at December 31, 2021 and 2020, respectively. The German, United Kingdom and Japanese governments and their agencies, which are rated investment grade by both Moody's and S&P, were the next largest exposures. The Company's exposure to Germany amounted to $48.9 billion and $51.8 billion at December 31, 2021 and 2020, respectively. The Company's exposure to the United Kingdom amounted to $31.1 billion and $26.0 billion at December 31, 2021 and 2020, respectively. The Company's exposure to Japan amounted to $30.1 billion and $35.5 billion at December 31, 2021 and 2020, respectively. The foreign government exposures are composed of investment securities, loans and trading assets.

The Company's exposure to states and municipalities amounted to $22.0 billion and $26.1 billion at December 31, 2021 and 2020, respectively, and was composed of trading assets, investment securities, derivatives and lending activities.

24. 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 counterparty default is factored into the valuation of derivative and other positions, and the impact of Citigroup's own credit risk is also factored into the valuation of derivatives and other liabilities that are 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 the market.
- Level 3: Valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are *unobservable*.

As required under the fair value hierarchy, the Company considers relevant and observable market inputs in its valuations where possible.

The fair value hierarchy classification approach typically utilizes rules-based and data driven selection criteria to determine whether an instrument is classified as Level 1, Level 2, or Level 3:

- The determination of whether an instrument is quoted in an active market and therefore considered a Level 1 instrument is based upon the frequency of observed transactions and the quality of independent market data available on the measurement date.
- A Level 2 classification is assigned where there is observability of prices / market inputs to models, or where any unobservable inputs are not significant to the valuation. The determination of whether an input is considered observable is based on the availability of independent market data and its corroboration, for example through observed transactions in the market.
- Otherwise, an instrument is classified as Level 3.

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, a non-recurring lower-of-cost-or-market (LOCOM) adjustment, or because 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 apply practical expedients (such as matrix pricing) to calculate fair value, in which case the items may be classified as Level 2.

The Company may also apply a price-based methodology that 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. If relevant and observable prices are available, those valuations may be classified as Level 2. However, when there are one or more significant unobservable "price" inputs, those valuations will be classified as Level 3. Furthermore, when a quoted price is considered stale, a significant adjustment to the price of a similar security may be necessary to reflect differences in the terms of the actual security or loan being valued, or alternatively, when prices from independent sources may be insufficient to corroborate a 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. 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. Citi 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 Citi 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 Citi'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. Citi'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. Citi's CVA and FVA methodologies consist 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 and term funding risk, 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. Citi'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 spreads is applied to the expected funding exposures (e.g., the market liquidity spread used to represent the term funding premium associated with certain OTC derivatives).

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, 2021 and 2020.

	Credit and funding valuation adjustments contra-liability (contra-asset)	
In millions of dollars	**December 31, 2021**	December 31, 2020
Counterparty CVA	**$(705)**	$(800)
Asset FVA	**(433)**	(525)
Citigroup (own credit) CVA	**379**	403
Liability FVA	**110**	67
Total CVA and FVA —derivative instruments	**$(649)**	$(855)

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 Citi's own fair value option (FVO) liabilities for the years indicated:

	Credit/funding/debt valuation adjustments gain (loss)		
In millions of dollars	**2021**	2020	2019
Counterparty CVA	**$ 79**	$ (101)	$ 149
Asset FVA	**96**	(95)	13
Own credit CVA	**(33)**	133	(131)
Liability FVA	**(22)**	(6)	(63)
Total CVA and FVA —derivative instruments	**$ 120**	$ (69)	$ (32)
DVA related to own FVO liabilities[1]	**$ 296**	$ (616)	$(1,473)
Total CVA, FVA and FVO DVA	**$ 416**	$ (685)	$(1,505)

(1) See Notes 1, 17 and 19 to the Consolidated Financial Statements.

Securities Purchased Under Agreements to Resell and Securities Sold Under Agreements to Repurchase

No quoted prices exist for these instruments, since 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 various 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. 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 the primary inputs to the valuation are unobservable, or prices from independent sources are insufficient to corroborate valuation, a loan or security is generally classified as Level 3. Fair value estimates from these internal valuation techniques are verified, where possible, to prices obtained from independent sources, including third-party vendors.

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. 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 is 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.

Investments

The investments category includes available-for-sale debt and marketable equity securities whose fair values are generally determined by utilizing similar procedures described for trading securities above or, in some cases, using vendor pricing as the primary source.

Also included in investments are nonpublic investments in private equity and real estate entities. Determining the fair value of nonpublic securities involves a significant degree of management's judgment, as no quoted prices exist and such securities are not generally traded. 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.

In addition, the Company holds investments in certain alternative investment funds that calculate NAV per share, including hedge funds, private equity funds and real estate funds. Investments in funds are generally classified as non-marketable equity securities carried at fair value. The fair values of these investments are estimated using the NAV per share of the Company's ownership interest in the funds where it is not probable that the investment will be realized at a price other than the NAV. Consistent with the provisions of ASU 2015-07, these investments are categorized within the fair value hierarchy and are not included in the tables below. See Note 13 to the Consolidated Financial Statements for additional information.

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 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, 2021 and 2020. The Company may hedge positions that have been classified in the Level 3 category with other financial instruments (hedging instruments) that may be classified as Level 3, but also with financial instruments classified as Level 1 or Level 2. The effects of these hedges are presented gross in the following tables:

Fair Value Levels

In millions of dollars at December 31, 2021	Level 1	Level 2	Level 3	Gross inventory	Netting[1]	Net balance
Assets						
Securities borrowed and purchased under agreements to resell	$ —	$342,030	$ 231	$342,261	$(125,795)	$216,466
Trading non-derivative assets						
Trading mortgage-backed securities						
U.S. government-sponsored agency guaranteed	—	34,534	496	35,030	—	35,030
Residential	1	643	104	748	—	748
Commercial	—	778	81	859	—	859
Total trading mortgage-backed securities	$ 1	$ 35,955	$ 681	$ 36,637	$ —	$ 36,637
U.S. Treasury and federal agency securities	$ 44,900	$ 3,230	$ 4	$ 48,134	$ —	$ 48,134
State and municipal	—	1,995	37	2,032	—	2,032
Foreign government	39,176	31,485	23	70,684	—	70,684
Corporate	1,544	16,156	412	18,112	—	18,112
Equity securities	53,833	10,047	174	64,054	—	64,054
Asset-backed securities	—	981	613	1,594	—	1,594
Other trading assets[2]	—	20,346	576	20,922	—	20,922
Total trading non-derivative assets	$139,454	$120,195	$ 2,520	$262,169	$ —	$262,169
Trading derivatives						
Interest rate contracts	$ 90	$161,500	$ 3,898	$165,488		
Foreign exchange contracts	—	134,912	637	135,549		
Equity contracts	41	43,904	1,307	45,252		
Commodity contracts	—	28,547	1,797	30,344		
Credit derivatives	—	9,299	919	10,218		
Total trading derivatives—before netting and collateral	$ 131	$378,162	$ 8,558	$386,851		
Netting agreements					$(292,628)	
Netting of cash collateral received[3]					(24,447)	
Total trading derivatives—after netting and collateral	$ 131	$378,162	$ 8,558	$386,851	$(317,075)	$ 69,776
Investments						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	$ —	$ 33,165	$ 51	$ 33,216	$ —	$ 33,216
Residential	—	286	94	380	—	380
Commercial	—	25	—	25	—	25
Total investment mortgage-backed securities	$ —	$ 33,476	$ 145	$ 33,621	$ —	$ 33,621
U.S. Treasury and federal agency securities	$122,271	$ 168	$ 1	$122,440	$ —	$122,440
State and municipal	—	1,849	772	2,621	—	2,621
Foreign government	56,842	61,112	786	118,740	—	118,740
Corporate	2,861	2,871	188	5,920	—	5,920
Marketable equity securities	350	177	16	543	—	543
Asset-backed securities	—	300	3	303	—	303
Other debt securities	—	4,877	—	4,877	—	4,877
Non-marketable equity securities[4]	—	28	316	344	—	344
Total investments	$182,324	$104,858	$ 2,227	$289,409	$ —	$289,409

Table continues on the next page.

In millions of dollars at December 31, 2021	Level 1	Level 2	Level 3	Gross inventory	Netting[1]	Net balance
Loans	$ —	$ 5,371	$ 711	$ 6,082	$ —	$ 6,082
Mortgage servicing rights	—	—	404	404	—	404
Non-trading derivatives and other financial assets measured on a recurring basis	$ 4,075	$ 8,194	$ 73	$ 12,342	$ —	$ 12,342
Total assets	$325,984	$ 958,810	$14,724	$1,299,518	$(442,870)	$856,648
Total as a percentage of gross assets[5]	25.1%	73.8%	1.1%			
Liabilities						
Interest-bearing deposits	$ —	$ 1,483	$ 183	$ 1,666	$ —	$ 1,666
Securities loaned and sold under agreements to repurchase	—	174,318	643	174,961	(118,267)	56,694
Trading account liabilities						
Securities sold, not yet purchased	82,675	23,268	65	106,008	—	106,008
Other trading liabilities	—	5	—	5	—	5
Total trading liabilities	$ 82,675	$ 23,273	$ 65	$ 106,013	$ —	$106,013
Trading derivatives						
Interest rate contracts	$ 56	$ 147,846	$ 2,172	$ 150,074		
Foreign exchange contracts	—	134,572	726	135,298		
Equity contracts	60	46,177	3,447	49,684		
Commodity contracts	—	30,004	1,375	31,379		
Credit derivatives	—	10,065	950	11,015		
Total trading derivatives—before netting and collateral	$ 116	$ 368,664	$ 8,670	$ 377,450		
Netting agreements					$(292,628)	
Netting of cash collateral paid[3]					(29,306)	
Total trading derivatives—after netting and collateral	$ 116	$ 368,664	$ 8,670	$ 377,450	$(321,934)	$ 55,516
Short-term borrowings	$ —	$ 7,253	$ 105	$ 7,358	$ —	$ 7,358
Long-term debt	—	57,100	25,509	82,609	—	82,609
Total non-trading derivatives and other financial liabilities measured on a recurring basis	$ 3,574	$ —	$ 1	$ 3,575	$ —	$ 3,575
Total liabilities	$ 86,365	$ 632,091	$35,176	$ 753,632	$(440,201)	$313,431
Total as a percentage of gross liabilities[5]	11.5%	83.9%	4.7%			

(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) Includes positions related to investments in unallocated precious metals, as discussed in Note 25 to the Consolidated Financial Statements. Also includes physical commodities accounted for at the lower of cost or fair value and unfunded credit products.

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

(4) Amounts exclude $0.1 billion of investments measured at net asset value (NAV) in accordance with ASU No. 2015-07, *Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent).*

(5) Because the amount of the cash collateral paid/received has not been allocated to the Level 1, 2 and 3 subtotals, these percentages are calculated based on total assets and liabilities measured at fair value on a recurring basis, excluding the cash collateral paid/received on derivatives.

Fair Value Levels

In millions of dollars at December 31, 2020	Level 1	Level 2	Level 3	Gross inventory	Netting[1]	Net balance
Assets						
Securities borrowed and purchased under agreements to resell	$ —	$ 335,073	$ 320	$ 335,393	$(150,189)	$185,204
Trading non-derivative assets						
Trading mortgage-backed securities						
U.S. government-sponsored agency guaranteed	—	42,903	27	42,930	—	42,930
Residential	—	391	340	731	—	731
Commercial	—	893	136	1,029	—	1,029
Total trading mortgage-backed securities	$ —	$ 44,187	$ 503	$ 44,690	$ —	$ 44,690
U.S. Treasury and federal agency securities	$ 64,529	$ 2,269	$ —	$ 66,798	$ —	$ 66,798
State and municipal	—	1,224	94	1,318	—	1,318
Foreign government	68,195	15,143	51	83,389	—	83,389
Corporate	1,607	18,840	375	20,822	—	20,822
Equity securities	54,117	12,289	73	66,479	—	66,479
Asset-backed securities	—	776	1,606	2,382	—	2,382
Other trading assets[2]	—	11,295	945	12,240	—	12,240
Total trading non-derivative assets	$188,448	$ 106,023	$ 3,647	$ 298,118	$ —	$298,118
Trading derivatives						
Interest rate contracts	$ 42	$ 238,026	$ 3,393	$ 241,461		
Foreign exchange contracts	2	155,994	674	156,670		
Equity contracts	66	48,362	2,091	50,519		
Commodity contracts	—	13,546	992	14,538		
Credit derivatives	—	8,634	1,155	9,789		
Total trading derivatives—before netting and collateral	$ 110	$ 464,562	$ 8,305	$ 472,977		
Netting agreements					$(364,879)	
Netting of cash collateral received[3]					(31,137)	
Total trading derivatives—after netting and collateral	$ 110	$ 464,562	$ 8,305	$ 472,977	$(396,016)	$ 76,961
Investments						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	$ —	$ 43,888	$ 30	$ 43,918	$ —	$ 43,918
Residential	—	571	—	571	—	571
Commercial	—	50	—	50	—	50
Total investment mortgage-backed securities	$ —	$ 44,509	$ 30	$ 44,539	$ —	$ 44,539
U.S. Treasury and federal agency securities	$146,032	$ 172	$ —	$ 146,204	$ —	$146,204
State and municipal	—	2,885	834	3,719	—	3,719
Foreign government	77,056	47,644	268	124,968	—	124,968
Corporate	6,326	4,114	60	10,500	—	10,500
Marketable equity securities	287	228	—	515	—	515
Asset-backed securities	—	277	1	278	—	278
Other debt securities	—	4,876	—	4,876	—	4,876
Non-marketable equity securities[4]	—	50	349	399	—	399
Total investments	$229,701	$ 104,755	$ 1,542	$ 335,998	$ —	$335,998

Table continues on the next page.

In millions of dollars at December 31, 2020	Level 1	Level 2	Level 3	Gross inventory	Netting[1]	Net balance
Loans	$ —	$ 4,869	$ 1,985	$ 6,854	$ —	$ 6,854
Mortgage servicing rights	—	—	336	336	—	336
Non-trading derivatives and other financial assets measured on a recurring basis	$ 6,230	$ 8,383	$ —	$ 14,613	$ —	$ 14,613
Total assets	$424,489	$1,023,665	$16,135	$1,464,289	$(546,205)	$918,084
Total as a percentage of gross assets[5]	29.0%	69.9%	1.1%			
Liabilities						
Interest-bearing deposits	$ —	$ 1,752	$ 206	$ 1,958	$ —	$ 1,958
Securities loaned and sold under agreements to repurchase	—	156,644	631	157,275	(97,069)	60,206
Trading account liabilities						
Securities sold, not yet purchased	85,353	14,477	214	100,044	—	100,044
Other trading liabilities	—	—	26	26	—	26
Total trading account liabilities	$ 85,353	$ 14,477	$ 240	$ 100,070	$ —	$100,070
Trading derivatives						
Interest rate contracts	$ 25	$ 220,607	$ 1,779	$ 222,411		
Foreign exchange contracts	3	155,441	622	156,066		
Equity contracts	53	58,212	5,304	63,569		
Commodity contracts	—	17,393	700	18,093		
Credit derivatives	—	9,022	1,107	10,129		
Total trading derivatives—before netting and collateral	$ 81	$ 460,675	$ 9,512	$ 470,268		
Netting agreements					$(364,879)	
Netting of cash collateral paid[3]					(37,432)	
Total trading derivatives—after netting and collateral	$ 81	$ 460,675	$ 9,512	$ 470,268	$(402,311)	$ 67,957
Short-term borrowings	$ —	$ 4,464	$ 219	$ 4,683	$ —	$ 4,683
Long-term debt	—	41,853	25,210	67,063	—	67,063
Non-trading derivatives and other financial liabilities measured on a recurring basis	$ 6,762	$ 72	$ 1	$ 6,835	$ —	$ 6,835
Total liabilities	$ 92,196	$ 679,937	$36,019	$ 808,152	$(499,380)	$308,772
Total as a percentage of gross liabilities[5]	11.4%	84.1%	4.5%			

(1) Represents netting of (i) the amounts due under securities purchased under agreements to resell and the amounts owed under securities sold under agreements to repurchase and (ii) derivative exposures covered by a qualifying master netting agreement and cash collateral offsetting.

(2) Includes positions related to investments in unallocated precious metals, as discussed in Note 25 to the Consolidated Financial Statements. Also includes physical commodities accounted for at the lower of cost or fair value and unfunded credit products.

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

(4) Amounts exclude $0.2 billion of investments measured at NAV in accordance with ASU 2015-07, *Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent).*

(5) Because the amount of the cash collateral paid/received has not been allocated to the Level 1, 2 and 3 subtotals, these percentages are calculated based on total assets and liabilities measured at fair value on a recurring basis, excluding the cash collateral paid/received on derivatives.

Changes in Level 3 Fair Value Category

The following tables present the changes in the Level 3 fair value category for the years ended December 31, 2021 and 2020. 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, 2020	Net realized/unrealized gains (losses) included in[1]		Transfers		Purchases	Issuances	Sales	Settlements	Dec. 31, 2021	Unrealized gains (losses) still held[3]
		Principal transactions	Other[1][2]	into Level 3	out of Level 3						
Assets											
Securities borrowed and purchased under agreements to resell	$ 320	$ (36)	$ —	$ 45	$ (49)	$ 362	$ —	$ —	$ (411)	$ 231	$ —
Trading non-derivative assets											
Trading mortgage-backed securities											
U.S. government-sponsored agency guaranteed	27	8	—	355	(131)	447	—	(210)	—	496	11
Residential	340	25	—	89	(96)	282	—	(536)	—	104	13
Commercial	136	23	—	96	(58)	62	—	(178)	—	81	—
Total trading mortgage-backed securities	$ 503	$ 56	$ —	$ 540	$ (285)	$ 791	$ —	$ (924)	$ —	$ 681	$ 24
U.S. Treasury and federal agency securities	$ —	$ —	$ —	$ 4	$ —	$ —	$ —	$ —	$ —	$ 4	$ —
State and municipal	94	(4)	—	20	(29)	17	—	(61)	—	37	(6)
Foreign government	51	29	—	143	(129)	83	—	(154)	—	23	(2)
Corporate	375	74	—	461	(384)	867	—	(981)	—	412	(38)
Equity securities	73	67	—	156	(52)	118	—	(188)	—	174	23
Asset-backed securities	1,606	371	—	173	(297)	1,313	—	(2,553)	—	613	(43)
Other trading assets	945	97	—	158	(457)	980	4	(1,147)	(4)	576	(37)
Total trading non-derivative assets	$ 3,647	$ 690	$ —	$ 1,655	$(1,633)	$4,169	$ 4	$(6,008)	$ (4)	$ 2,520	$ (79)
Trading derivatives, net[4]											
Interest rate contracts	$ 1,614	$ (376)	$ —	$ 102	$ 562	$ 27	$ (84)	$ —	$ (119)	$ 1,726	$ 4
Foreign exchange contracts	52	(8)	—	(57)	104	220	—	(326)	(74)	(89)	7
Equity contracts	(3,213)	964	—	(1,101)	1,923	364	—	(364)	(713)	(2,140)	(729)
Commodity contracts	292	474	—	174	(454)	162	—	(238)	12	422	261
Credit derivatives	48	(136)	—	(96)	40	—	—	—	113	(31)	(130)
Total trading derivatives, net[4]	$(1,207)	$ 918	$ —	$ (978)	$ 2,175	$ 773	$ (84)	$ (928)	$ (781)	$ (112)	$ (587)

Table continues on the next page.

In millions of dollars	Dec. 31, 2020	Net realized/unrealized gains (losses) included in[1] Principal transactions	Other[1][2]	Transfers into Level 3	Transfers out of Level 3	Purchases	Issuances	Sales	Settlements	Dec. 31, 2021	Unrealized gains (losses) still held[3]
Investments											
Mortgage-backed securities											
U.S. government-sponsored agency guaranteed	$ 30	$ —	$ 2	$ 42	$ (10)	$ 3	$ —	$ (16)	$ —	$ 51	$ 2
Residential	—	—	—	54	(12)	52	—	—	—	94	(1)
Commercial	—	—	—	—	—	—	—	—	—	—	—
Total investment mortgage-backed securities	$ 30	$ —	$ 2	$ 96	$ (22)	$ 55	$ —	$ (16)	$ —	$ 145	$ 1
U.S. Treasury and federal agency securities	$ —	$ —	$ —	$ 1	$ —	$ —	$ —	$ —	$ —	$ 1	$ —
State and municipal	834	—	(21)	58	(108)	49	—	(40)	—	772	(12)
Foreign government	268	—	(49)	512	(565)	871	—	(251)	—	786	(2)
Corporate	60	—	(14)	183	(44)	37	—	(34)	—	188	2
Marketable equity securities	—	—	—	16	—	—	—	—	—	16	—
Asset-backed securities	1	—	(21)	36	—	—	—	(13)	—	3	(2)
Other debt securities	—	—	—	—	—	—	—	—	—	—	—
Non-marketable equity securities	349	—	(27)	2	—	—	—	(8)	—	316	(6)
Total investments	$ 1,542	$ —	$(130)	$ 904	$ (739)	$1,012	$ —	$ (362)	$ —	$ 2,227	$ (19)
Loans	$ 1,985	$ —	$ 90	$ 311	$(2,071)	$ —	$ 529	$ —	$ (133)	$ 711	$ (77)
Mortgage servicing rights	336	—	43	—	—	—	92	—	(67)	404	52
Other financial assets measured on a recurring basis	—	—	6	65	(27)	58	—	(26)	(3)	73	—
Liabilities											
Interest-bearing deposits	$ 206	$ —	$ (18)	$ —	$ (44)	$ —	$ 38	$ —	$ (35)	$ 183	$ (19)
Securities loaned and sold under agreements to repurchase	631	(9)	—	183	(483)	488	—	—	(185)	643	32
Trading account liabilities											
Securities sold, not yet purchased	214	48	—	87	(34)	59	—	—	(213)	65	(4)
Other trading liabilities	26	26	—	—	—	—	—	—	—	—	—
Short-term borrowings	219	43	—	137	(57)	—	49	—	(200)	105	(2)
Long-term debt	25,210	2,774	—	8,611	(9,771)	—	10,262	—	(6,029)	25,509	1,756
Other financial liabilities measured on a recurring basis	1	—	(3)	—	(4)	—	14	—	(13)	1	—

(1) Net realized/unrealized gains (losses) are presented as increase (decrease) to Level 3 assets, and as (increase) decrease to Level 3 liabilities. Changes in fair value of available-for-sale debt securities are recorded in *AOCI*, unless related to credit impairment, while gains and losses from sales are recorded in *Realized gains (losses) from sales of investments* in the Consolidated Statement of Income.

(2) Unrealized gains (losses) on MSRs are recorded in *Other revenue* in the Consolidated Statement of Income.

(3) Represents the amount of total gains or losses for the period, included in earnings (and *AOCI* for changes in fair value of available-for-sale debt securities and DVA on fair value option liabilities), attributable to the change in fair value relating to assets and liabilities classified as Level 3 that are still held at December 31, 2021.

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

In millions of dollars	Dec. 31, 2019	Net realized/unrealized gains (losses) included in[1] Principal transactions	Other[1][2]	Transfers into Level 3	Transfers out of Level 3	Purchases	Issuances	Sales	Settlements	Dec. 31, 2020	Unrealized gains (losses) still held[3]
Assets											
Securities borrowed and purchased under agreements to resell	$ 303	$ 23	$ —	$ —	$ —	$ 194	$ —	$ —	$ (200)	$ 320	$ 43
Trading non-derivative assets											
Trading mortgage-backed securities											
U.S. government-sponsored agency guaranteed	10	(79)	—	21	(11)	392	—	(306)	—	27	(1)
Residential	123	79	—	234	(68)	486	—	(514)	—	340	(20)
Commercial	61	—	—	162	(35)	174	—	(226)	—	136	(14)
Total trading mortgage-backed securities	$ 194	$ —	$ —	$ 417	$ (114)	$1,052	$ —	$(1,046)	$ —	$ 503	$ (35)
U.S. Treasury and federal agency securities	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
State and municipal	64	2	—	33	(3)	62	—	(64)	—	94	4
Foreign government	52	(35)	—	9	(1)	169	—	(143)	—	51	(7)
Corporate	313	246	—	211	(136)	770	—	(1,023)	(6)	375	(37)
Marketable equity securities	100	(16)	—	43	(2)	240	—	(292)	—	73	(11)
Asset-backed securities	1,177	(105)	—	677	(131)	1,406	—	(1,418)	—	1,606	(248)
Other trading assets	555	315	—	471	(343)	387	19	(440)	(19)	945	(56)
Total trading non-derivative assets	$ 2,455	$ 407	$ —	$1,861	$ (730)	$4,086	$ 19	$(4,426)	$ (25)	$ 3,647	$ (390)
Trading derivatives, net[4]											
Interest rate contracts	$ 1	$ 429	$ —	$1,644	$ 16	$ 41	$ 134	$ (34)	$ (617)	$ 1,614	$ 161
Foreign exchange contracts	(5)	105	—	(61)	48	74	—	(55)	(54)	52	130
Equity contracts	(1,596)	(536)	—	(519)	378	35	—	(886)	(89)	(3,213)	(3,868)
Commodity contracts	(59)	(1)	—	99	(108)	101	—	(61)	321	292	407
Credit derivatives	(56)	123	—	173	(334)	—	—	—	142	48	(136)
Total trading derivatives, net[4]	$ (1,715)	$ 120	$ —	$1,336	$ —	$ 251	$ 134	$(1,036)	$ (297)	$ (1,207)	$(3,306)
Investments											
Mortgage-backed securities											
U.S. government-sponsored agency guaranteed	$ 32	$ —	$ (5)	$ 2	$ —	$ 1	$ —	$ —	$ —	$ 30	$ (104)
Residential	—	—	76	—	—	—	—	(76)	—	—	5
Commercial	—	—	—	—	—	—	—	—	—	—	—
Total investment mortgage-backed securities	$ 32	$ —	$ 71	$ 2	$ —	$ 1	$ —	$ (76)	$ —	$ 30	$ (99)
U.S. Treasury and federal agency securities	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
State and municipal	623	—	(3)	322	(131)	121	—	(98)	—	834	(20)
Foreign government	96	—	11	27	(64)	381	—	(183)	—	268	(4)
Corporate	45	—	6	49	(152)	162	—	(50)	—	60	—
Marketable equity securities	—	—	(1)	1	—	—	—	—	—	—	—
Asset-backed securities	22	—	(1)	—	—	—	—	(20)	—	1	(4)
Other debt securities	—	—	—	—	—	—	—	—	—	—	—
Non-marketable equity securities	441	—	(35)	—	(2)	2	3	(3)	(57)	349	10
Total investments	$ 1,259	$ —	$ 48	$ 401	$ (349)	$ 667	$ 3	$ (430)	$ (57)	$ 1,542	$ (117)

Table continues on the next page.

In millions of dollars	Dec. 31, 2019	Net realized/unrealized gains (losses) included in[1] Principal transactions	Other[1][2]	Transfers into Level 3	Transfers out of Level 3	Purchases	Issuances	Sales	Settlements	Dec. 31, 2020	Unrealized gains (losses) still held[3]
Loans	$ 402	$ —	$ 1,143	$ 451	$ (6)	$ —	$ —	$ —	$ (5)	$ 1,985	$ 1,424
Mortgage servicing rights	495	—	(204)	—	—	—	123	—	(78)	336	(180)
Other financial assets measured on a recurring basis	1	—	—	—	—	—	—	(1)	—	—	—
Liabilities											
Interest-bearing deposits	$ 215	$ —	$ 11	$ 278	$ (152)	$ —	$ 34	$ —	$ (158)	$ 206	$ (142)
Securities loaned and sold under agreements to repurchase	757	5	—	—	—	—	—	—	(121)	631	(18)
Trading account liabilities											
Securities sold, not yet purchased	48	(102)	—	271	(17)	—	—	10	(200)	214	(163)
Other trading liabilities	—	9	—	35	—	—	—	—	—	26	23
Short-term borrowings	13	78	—	220	(6)	—	86	—	(16)	219	(91)
Long-term debt	17,169	(1,489)	—	6,553	(2,615)	—	10,270	—	(7,656)	25,210	(1,679)
Other financial liabilities measured on a recurring basis	—	—	—	—	—	—	3	—	(2)	1	—

(1) Net realized/unrealized gains (losses) are presented as increase (decrease) to Level 3 assets, and as (increase) decrease to Level 3 liabilities. Changes in fair value of available-for-sale debt securities are recorded in *AOCI*, unless related to credit impairment, while gains and losses from sales are recorded in *Realized gains (losses) from sales of investments* in the Consolidated Statement of Income.
(2) Unrealized gains (losses) on MSRs are recorded in *Other revenue* in the Consolidated Statement of Income.
(3) Represents the amount of total gains or losses for the period, included in earnings (and *AOCI* for changes in fair value of available-for-sale debt securities and DVA on fair value option liabilities), attributable to the change in fair value relating to assets and liabilities classified as Level 3 that are still held at December 31, 2020.
(4) Total Level 3 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, 2020 to December 31, 2021:

- During the 12 months ended December 31, 2021, transfers of *Loans* of $2.1 billion from Level 3 to Level 2 were primarily driven by equity forward and volatility inputs that have been assessed as not significant to the overall valuation of certain hybrid loan instruments, including equity options and long dated equity call spreads.
- During the 12 months ended December 31, 2021, transfers of *Equity contracts* of $1.1 billion from Level 2 to Level 3 were due to equity forward and volatility inputs becoming an unobservable and/or significant input relative to the overall valuation of equity options and equity swaps. In other instances, market changes have resulted in observable equity forward and volatility inputs becoming an insignificant input 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 $1.9 billion of certain Equity contracts being transferred from Level 3 to Level 2.
- During the 12 months ended December 31, 2021, transfers of *Long-term debt* were $8.6 billion from Level 2 to Level 3. Of the $8.6 billion transfer in, approximately $7.2 billion related to interest rate option volatility inputs becoming unobservable and/or significant relative to their overall valuation, and $1.0 billion related to equity volatility inputs (in addition to other volatility inputs, e.g., interest rate volatility inputs) becoming unobservable and/or significant to their overall valuation. In other instances, market changes have resulted in some inputs becoming more observable, and some unobservable inputs becoming less significant to the overall valuation of the instruments (e.g., when an option becomes deep-in or deep-out of the money). This has resulted in $9.8 billion of certain structured long-term debt products being transferred from Level 3 to Level 2 during the 12 months ended December 31, 2021.

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, transfers of *Interest rate contracts* of $1.6 billion from Level 2 to Level 3 were due to interest rate option volatility becoming an unobservable and/or significant input relative to the overall valuation of inflation and other interest rate derivatives.
- During the 12 months ended December 31, 2020, $6.6 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 $2.6 billion of certain structured long-term debt products being transferred from Level 3 to Level 2 during the 12 months ended December 31, 2020.

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 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, 2021	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	**$ 231**	Model-based	Credit spread	**15bps**	**15bps**	**15bps**
			Interest rate	**0.26%**	**0.72%**	**0.50%**
Mortgage-backed securities	**$ 279**	Price-based	Price	**$ 4**	**$ 118**	**$ 79**
	526	Yield analysis	Yield	**1.43%**	**23.79%**	**7.25%**
State and municipal, foreign government, corporate and other debt securities	**$ 2,264**	Price-based	Price	**$ —**	**$ 995**	**$ 193**
	415	Model-based	Equity volatility	**0.08%**	**290.64%**	**53.94%**
Marketable equity securities[5]	**$ 128**	Price-based	Price	**$ —**	**$ 73,000**	**$ 6,477**
	43	Model-based	WAL	**1.73 years**	**1.73 years**	**1.73 years**
			Recovery *(in millions)*	**$ 7,148**	**$ 7,148**	**$ 7,148**
Asset-backed securities	**$ 386**	Price-based	Price	**$ 5**	**$ 754**	**$ 87**
	208	Yield analysis	Yield	**2.43%**	**19.35%**	**8.18%**
Non-marketable equities	**$ 121**	Price-based	Illiquidity discount	**10.00%**	**36.00%**	**26.43%**
	112	Comparables analysis	PE ratio	**11.00x**	**29.00x**	**15.42x**
	83	Model-based	Price	**$ 3**	**$ 2,601**	**$ 2,029**
			Adjustment factor	**0.33x**	**0.44x**	**0.34x**
			Revenue multiple	**19.80x**	**30.00x**	**20.48x**
			Cost of capital	**17.50%**	**20.00%**	**17.57%**
Derivatives—gross[6]						
Interest rate contracts (gross)	**$ 6,054**	Model-based	IR normal volatility	**0.24%**	**0.94%**	**0.70%**
Foreign exchange contracts (gross)	**$ 1,364**	Model-based	IR Normal volatility	**0.24%**	**0.74%**	**0.58%**
			FX volatility	**2.13%**	**107.42%**	**11.21%**
			Credit spread	**140bps**	**696bps**	**639bps**
Equity contracts (gross)[7]	**$ 4,690**	Model-based	Equity volatility	**0.08%**	**290.64%**	**47.67%**
			Equity forward	**57.99%**	**165.83%**	**89.45%**
			Equity-FX correlation	**(95.00)%**	**80.00%**	**(16.00)%**
			Equity-Equity correlation	**(6.49)%**	**99.00%**	**85.61%**
Commodity and other contracts (gross)	**$ 3,172**	Model-based	Forward price	**8.00%**	**599.44%**	**123.22%**
			Commodity volatility	**10.87%**	**188.30%**	**26.85%**
			Commodity correlation	**(50.52)%**	**89.83%**	**(7.11)%**
Credit derivatives (gross)	**$ 1,480**	Model-based	Credit spread	**1.00bps**	**874.72bps**	**68.83bps**
	427	Price-based	Recovery rate	**20.00%**	**75.00%**	**44.72%**
			Upfront points	**2.74%**	**99.96%**	**59.37%**
			Price	**$ 40**	**$ 103**	**$ 80**
			Credit correlation	**30.00%**	**80.00%**	**54.57%**

Table continues on the next page.

As of December 31, 2021	Fair value[1] *(in millions)*	Methodology	Input	Low[2][3]	High[2][3]	Weighted average[4]
Non-trading derivatives and other financial assets and liabilities measured on a recurring basis (gross)	**$ 69**	Price-based	Price	**$ 94**	**$ 2,598**	**$ 591**
Loans and leases	**$ 691**	Model-based	Equity volatility	**22.48%**	**85.44%**	**50.56%**
			Forward price	**26.95%**	**333.08%**	**106.97%**
			Commodity volatility	**10.87%**	**188.30%**	**26.85%**
			Commodity correlation	**(50.52)%**	**89.83%**	**(7.11)%**
Mortgage servicing rights	**$ 331**	Cash flow	Yield	**(1.20)%**	**12.10%**	**4.51%**
	73	Model-based	WAL	**2.75 years**	**5.86 years**	**5.14 years**
Liabilities						
Interest-bearing deposits	**$ 183**	Model-based	IR Normal volatility	**0.34%**	**0.88%**	**0.68%**
			Equity volatility	**0.08%**	**290.64%**	**54.05%**
			Equity forward	**57.99%**	**165.83%**	**89.39%**
Securities loaned and sold under agreements to repurchase	**$ 643**	Model-based	Interest rate	**0.12%**	**1.95%**	**1.47%**
Trading account liabilities						
Securities sold, not yet purchased and other trading liabilities	**$ 63**	Price-based	Price	**$ —**	**$ 12,875**	**$ 1,707**
Short-term borrowings and long-term debt	**$25,514**	Model-based	IR Normal volatility	**0.07%**	**0.88%**	**0.60%**
			Equity volatility	**0.08%**	**290.64%**	**53.21%**
			Equity-IR correlation	**(3.53)%**	**60.00%**	**32.12%**
			Equity-FX correlation	**(95.00)%**	**80.00%**	**(15.98)%**
			FX volatility	**0.06%**	**41.76%**	**9.38%**

As of December 31, 2020	Fair value[1] *(in millions)*	Methodology	Input	Low[2][3]	High[2][3]	Weighted average[4]
Securities borrowed and purchased under agreements to resell	$ 320	Model-based	Credit spread	15bps	15bps	15bps
			Interest rate	0.30%	0.35%	0.32%
Mortgage-backed securities	$ 344	Price-based	Price	$ 30	$ 111	$ 80
	168	Yield analysis	Yield	2.63%	21.80%	10.13%
State and municipal, foreign government, corporate and other debt securities	$ 1,566	Price-based	Price	$ —	$ 2,265	$ 90
	852	Model-based	Credit spread	35bps	375bps	226bps
Marketable equity securities[5]	$ 36	Model-based	Price	$ —	$ 31,000	$ 5,132
	36	Price-based	WAL	1.48 years	1.48 years	1.48 years
			Recovery *(in millions)*	$ 5,733	$ 5,733	$ 5,733
Asset-backed securities	$ 863	Price-based	Price	$ 2	$ 157	$ 59
	744	Yield analysis	Yield	3.77%	21.77%	9.01%
Non-marketable equities	$ 205	Comparables analysis	Illiquidity discount	10.00%	45.00%	25.29%
			PE ratio	13.60x	28.00x	22.83x
	142	Price-based	Price	$ 136	$ 2,041	$ 1,647
			EBITDA multiples	3.30x	36.70x	15.10x
			Adjustment factor	0.20x	0.61x	0.25x
			Appraised value *(in thousands)*	$ 287	$ 39,745	$ 21,754
			Revenue multiple	2.70x	28.00x	8.92x

Table continues on the next page.

As of December 31, 2020	Fair value[1] (in millions)	Methodology	Input	Low[2][3]	High[2][3]	Weighted average[4]
Derivatives—gross[6]						
Interest rate contracts (gross)	$ 5,143	Model-based	Inflation volatility	0.27%	2.36%	0.78%
			IR normal volatility	0.11%	0.73%	0.52%
Foreign exchange contracts (gross)	$ 1,296	Model-based	FX volatility	1.70%	12.63%	5.41%
			Contingent event	100.00%	100.00%	100.00%
			Interest rate	0.84%	84.09%	17.55%
			IR normal volatility	0.11%	0.52%	0.46%
			IR-FX correlation	40.00%	60.00%	50.00%
			IR-IR correlation	(21.71)%	40.00%	38.09%
Equity contracts (gross)[7]	$ 7,330	Model-based	Equity volatility	5.00%	91.43%	42.74%
			Forward price	65.88%	105.20%	91.82%
Commodity and other contracts (gross)	$ 1,636	Model-based	Commodity correlation	(44.92)%	95.91%	70.60%
			Commodity volatility	0.16%	80.17%	23.72%
			Forward price	15.40%	262.00%	98.53%
Credit derivatives (gross)	$ 1,854	Model-based	Credit spread	3.50bps	352.35bps	99.89bps
	408	Price-based	Recovery rate	20.00%	60.00%	41.60%
			Credit correlation	25.00%	80.00%	43.36%
			Upfront points	—%	107.20%	48.10%
Loans and leases	$ 1,804	Model-based	Equity volatility	24.65%	83.09%	58.23%
Mortgage servicing rights	$ 258	Cash flow	Yield	2.86%	16.00%	6.32%
	78	Model-based	WAL	2.66 years	5.40 years	4.46 years
Liabilities						
Interest-bearing deposits	$ 206	Model-based	IR Normal volatility	0.11%	0.73%	0.54%
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 and other trading liabilities	$ 178	Model-based	IR lognormal volatility	52.06%	128.87%	89.82%
	$ 62	Price-based	Price	$ —	$ 866	$ 80
			Interest rate	10.03%	20.07%	13.70%
Short-term borrowings and long-term debt	$ 24,827	Model-based	IR normal volatility	0.11%	0.73%	0.51%
			Forward price	15.40%	262.00%	92.48%

(1) The tables above include the fair values for the items listed and may not foot to the total population for each category.
(2) Some inputs are shown as zero due to rounding.
(3) When the low and high inputs are the same, there is either a constant input applied to all positions, or the methodology involving the input applies to only one large position.
(4) Weighted averages are calculated based on the fair values of the instruments.
(5) For equity securities, the price inputs are expressed on an absolute basis, not as a percentage of the notional amount.
(6) Both trading and non-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, Credit Index Tranches 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 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 an instrument (or 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 equities) 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. 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. Prepayment is generally negatively correlated with delinquency and interest rate. A combination of low prepayments 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 (e.g., commercial mortgage backed securities), the expected recovery amount of a defaulted property is typically unknown until a liquidation of the property is imminent. The assumed recovery of a security may differ from its actual recovery that will be observable in the future. 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.

Items Measured at Fair Value on a Nonrecurring Basis

Certain assets and liabilities are measured at fair value on a nonrecurring basis and, therefore, are not included in the tables above. These include assets measured at cost that have been written down to fair value during the periods as a result of an impairment. These also include non-marketable equity securities that have been measured using the measurement alternative and are either (i) written down to fair value during the periods as a result of an impairment or (ii) adjusted upward or downward to fair value as a result of a transaction observed during the periods for the identical or similar investment of the same issuer. In addition, these assets include loans held-for-sale and other real estate owned that are measured at the lower of cost or market value.

The following tables present the carrying amounts of all assets that were still held for which a nonrecurring fair value measurement was recorded:

In millions of dollars	**Fair value**	**Level 2**	**Level 3**
December 31, 2021			
Loans HFS[1]	**$2,298**	**$ 986**	**$1,312**
Other real estate owned	**11**	**—**	**11**
Loans[2]	**144**	**—**	**144**
Non-marketable equity securities measured using the measurement alternative	**655**	**104**	**551**
Total assets at fair value on a nonrecurring basis	**$3,108**	**$1,090**	**$2,018**

In millions of dollars	Fair value	Level 2	Level 3
December 31, 2020			
Loans HFS[1]	$2,430	$ 207	$2,223
Other real estate owned	17	4	13
Loans[2]	703	—	703
Non-marketable equity securities measured using the measurement alternative	458	403	55
Total assets at fair value on a nonrecurring basis	$3,608	$ 614	$2,994

(1) Net of fair value amounts on the unfunded portion of loans HFS recognized as *Other liabilities* on the Consolidated Balance Sheet.
(2) Represents impaired loans held for investment whose carrying amount is based on the fair value of the underlying collateral less costs to sell, primarily real estate.

The fair value of loans HFS is determined where possible using quoted secondary-market prices. If no such quoted price exists, the fair value of a loan is determined using quoted prices for a similar asset or assets, adjusted for the specific attributes of that loan. Fair value for the other real estate owned is based on appraisals. For loans whose carrying amount is based on the fair value of the underlying collateral, the fair values depend on the type of collateral. Fair value of the collateral is typically estimated based on quoted market prices if available, appraisals or other internal valuation techniques.

Where the fair value of the related collateral is based on an appraised value, the loan is generally classified as Level 3. In addition, for corporate loans, appraisals of the collateral are often based on sales of similar assets; however, because the prices of similar assets require significant adjustments to reflect the unique features of the underlying collateral, these fair value measurements are generally classified as Level 3.

The fair value of non-marketable equity securities under the measurement alternative is based on observed transaction prices for the identical or similar investment of the same issuer, or an internal valuation technique in the case of an impairment. Where there are insufficient market observations to conclude the inputs are observable, where significant adjustments are made to the observed transaction prices or when an internal valuation technique is used, the security is classified as Level 3. Fair value may differ from the observed transaction price due to a number of factors, including marketability adjustments and differences in rights and obligations when the observed transaction is not for the identical investment held by Citi.

Valuation Techniques and Inputs for Level 3 Nonrecurring Fair Value Measurements

The following tables present the valuation techniques covering the majority of Level 3 nonrecurring fair value measurements and the most significant unobservable inputs used in those measurements:

As of December 31, 2021	**Fair value[1] *(in millions)***	**Methodology**	**Input**	**Low[2]**	**High**	**Weighted average[3]**
Loans HFS	**$1,312**	Price-based	Price	**$ 89**	**$ 100**	**$ 99**
Other real estate owned	**$ 4**	Price-based	Appraised value[4]	**$14,000**	**$2,392,464**	**$1,660,120**
	5	Recovery analysis				
Loans[5]	**$ 120**	Recovery analysis	Appraised value[4]	**$10,000**	**$3,900,000**	**$ 247,018**
	24	Price-based	Price	**$ 3**	**$ 75**	**$ 35**
			Recovery rate	**84.00%**	**100.00%**	**84.00%**
Non-marketable equity securities measured using the measurement alternative	**$ 551**	Price-based	Price	**$ 6**	**$ 1,339**	**$ 52**

As of December 31, 2020	Fair value[1] *(in millions)*	Methodology	Input	Low[2]	High	Weighted average[3]
Loans HFS	$2,182	Price-based	Price	$ 78	$ 100	$ 97
Other real estate owned	$ 7	Price-based	Appraised value[4]	$3,110,711	$ 4,241,357	$3,586,975
	4	Recovery analysis	Price	51	51	51
Loans[5]	$ 96	Price-based	Price	$ 2	$ 49	$ 23
	429	Recovery analysis	Appraised value[4]	$ 95	$43,646,426	$1,698,938
Non-marketable equity securities measured using the measurement alternative	$ 36	Comparable analysis	Revenue multiple	1.70x	15.10x	10.88x
	18	Net asset approach	Illiquidity discount	20.00%	20.00%	20.00%
			Price	$ —	$ 17	$ 6

(1) The table above includes the fair values for the items listed and may not foot to the total population for each category.
(2) Some inputs are shown as zero due to rounding.
(3) Weighted averages are calculated based on the fair values of the instruments.
(4) Appraised values are disclosed in whole dollars.
(5) Represents impaired loans held for investment whose carrying amount is based on the fair value of the underlying collateral less costs to sell, primarily real estate.

Nonrecurring Fair Value Changes

The following tables present total nonrecurring fair value measurements for the period, included in earnings, attributable to the change in fair value relating to assets that were still held:

In millions of dollars	**Year ended December 31, 2021**
Loans HFS	**$ (31)**
Other real estate owned	**—**
Loans[1]	**9**
Non-marketable equity securities measured using the measurement alternative	**468**
Total nonrecurring fair value gains (losses)	**$ 446**

In millions of dollars	Year ended December 31, 2020
Loans HFS	$ (93)
Other real estate owned	(1)
Loans[1]	109
Non-marketable equity securities measured using the measurement alternative	221
Total nonrecurring fair value gains (losses)	$ 236

(1) Represents impaired loans held for investment whose carrying amount is based on the fair value of the underlying collateral less costs to sell, primarily real estate.

Estimated Fair Value of Financial Instruments Not Carried at Fair Value

The following tables present the carrying value and fair value of Citigroup'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, pension and benefit obligations, certain insurance contracts 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, excess fair value associated with deposits with no fixed maturity 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 a wide range of franchise, relationship and intangible values, which are integral to a full assessment of Citigroup'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, 2021		**Estimated fair value**		
In billions of dollars	**Carrying value**	**Estimated fair value**	**Level 1**	**Level 2**	**Level 3**
Assets					
Investments, net of allowance	**$ 221.9**	**$ 221.0**	**$111.8**	**$ 106.4**	**$ 2.8**
Securities borrowed and purchased under agreements to resell	**110.8**	**110.8**	**—**	**106.4**	**4.4**
Loans[1][2]	**644.8**	**659.6**	**—**	**—**	**659.6**
Other financial assets[2][3]	**351.9**	**351.9**	**242.1**	**19.9**	**89.9**
Liabilities					
Deposits	**$1,315.6**	**$1,316.2**	**$ —**	**$1,153.9**	**$162.3**
Securities loaned and sold under agreements to repurchase	**134.6**	**134.6**	**—**	**134.5**	**0.1**
Long-term debt[4]	**171.8**	**184.6**	**—**	**171.9**	**12.7**
Other financial liabilities[5]	**111.1**	**111.1**	**—**	**17.0**	**94.1**

	December 31, 2020		Estimated fair value		
In billions of dollars	Carrying value	Estimated fair value	Level 1	Level 2	Level 3
Assets					
Investments, net of allowance	$ 110.3	$ 113.2	$ 23.3	$ 87.0	$ 2.9
Securities borrowed and purchased under agreements to resell	109.5	109.5	—	109.5	—
Loans[1][2]	643.3	663.9	—	0.6	663.3
Other financial assets[2][3]	383.2	383.2	291.5	18.1	73.6
Liabilities					
Deposits	$1,278.7	$1,278.8	$ —	$1,093.3	$185.5
Securities loaned and sold under agreements to repurchase	139.3	139.3	—	139.3	—
Long-term debt[4]	204.6	221.2	—	197.8	23.4
Other financial liabilities[5]	102.4	102.4	—	19.2	83.2

(1) The carrying value of loans is net of the *Allowance for credit losses on loans* of $16.5 billion for December 31, 2021 and $25.0 billion for December 31, 2020. In addition, the carrying values exclude $0.5 billion and $0.7 billion of lease finance receivables at December 31, 2021 and 2020, respectively.

(2) Includes items measured at fair value on a nonrecurring basis.

(3) Includes cash and due from banks, deposits with banks, brokerage receivables, reinsurance recoverables and other financial instruments included in *Other assets* on the Consolidated Balance Sheet, for all of which the carrying value is a reasonable estimate of fair value.

(4) The carrying value includes long-term debt balances under qualifying fair value hedges.

(5) Includes brokerage payables, separate and variable accounts, short-term borrowings (carried at cost) and other financial instruments included in *Other liabilities* on the Consolidated Balance Sheet, for all of which the carrying value is a reasonable estimate of fair value.

The estimated fair values of the Company's corporate unfunded lending commitments at December 31, 2021 and 2020 were off-balance liabilities of $8.1 billion and $7.3 billion, respectively, substantially all of which are classified as Level 3. The Company does not estimate the fair values of consumer unfunded lending commitments, which are generally cancellable by providing notice to the borrower.

25. FAIR VALUE ELECTIONS

The Company may elect to report most financial instruments and certain other items at fair value on an instrument-by-instrument basis with changes in fair value reported in earnings, other than DVA (see below). The election is made upon the initial recognition of an eligible financial asset, financial liability or firm commitment 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 24 to the Consolidated Financial Statements.

The Company has elected fair value accounting for its mortgage servicing rights (MSRs). See Note 21 to the Consolidated Financial Statements for additional details on Citi's MSRs.

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

	Changes in fair value—gains (losses) for the years ended December 31,	
In millions of dollars	**2021**	2020
Assets		
Securities borrowed and purchased under agreements to resell	**$ (87)**	$ —
Trading account assets	**59**	(136)
Investments	**—**	—
Loans		
Certain corporate loans	**(171)**	2,486
Certain consumer loans	**—**	1
Total loans	**$ (171)**	$ 2,487
Other assets		
MSRs	**$ 43**	$ (204)
Certain mortgage loans HFS[1]	**70**	299
Total other assets	**$ 113**	$ 95
Total assets	**$ (86)**	$ 2,446
Liabilities		
Interest-bearing deposits	**$ (118)**	$ (154)
Securities loaned and sold under agreements to repurchase	**66**	(559)
Trading account liabilities	**17**	(1)
Short-term borrowings[2]	**675**	802
Long-term debt[2]	**386**	(2,700)
Total liabilities	**$1,026**	$(2,612)

(1) Includes gains (losses) associated with interest rate lock commitments for those loans that have been originated and elected under the fair value option.
(2) Includes DVA that is included in *AOCI*. See Notes 19 and 24 to the Consolidated Financial Statements.

Own Debt Valuation Adjustments (DVA)

Own debt valuation adjustments are recognized on Citi'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 fair value option liabilities related to changes in Citigroup's own credit spreads (DVA) are reflected as a component of *AOCI*. See Note 1 to the Consolidated Financial Statements for additional information.

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 the Company's credit spreads.

The estimated changes in the fair value of these non-derivative liabilities due to such changes in the Company's own credit spread (or instrument-specific credit risk) were a gain of $296 million and a loss of $616 million for the years ended December 31, 2021 and 2020, respectively. Changes in fair value resulting from changes in instrument-specific credit risk were estimated by incorporating the Company's current credit spreads observable in the bond market into the relevant valuation technique used to value each liability as described above.

The Fair Value Option for Financial Assets and Financial Liabilities

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

The Company elected the fair value option for certain portfolios of fixed income securities purchased under agreements to resell and fixed income securities sold under agreements to repurchase, securities borrowed, securities loaned and certain uncollateralized short-term borrowings held primarily by broker-dealer entities in the United States, the United Kingdom and Japan. 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.

Certain Loans and Other Credit Products

Citigroup has also elected the fair value option for certain other originated and purchased loans, including certain unfunded loan products, such as guarantees and letters of credit, executed by Citigroup's lending and trading businesses. None of these credit products are highly leveraged financing commitments. Significant groups of transactions include loans and unfunded loan products that are expected to be either sold or securitized in the near term, or transactions where the economic risks are hedged with derivative instruments, such as purchased credit default swaps or total return swaps where the Company pays the total return on the underlying loans to a third party. Citigroup has elected the fair value option to mitigate accounting mismatches in cases where hedge accounting is complex and to achieve operational simplifications. Fair value was not elected for most lending transactions across the Company.

The following table provides information about certain credit products carried at fair value:

In millions of dollars	**December 31, 2021**		December 31, 2020	
	Trading assets	**Loans**	Trading assets	Loans
Carrying amount reported on the Consolidated Balance Sheet	**$9,530**	**$6,082**	$8,063	$6,854
Aggregate unpaid principal balance in excess of (less than) fair value	**(100)**	**226**	(915)	(14)
Balance of non-accrual loans or loans more than 90 days past due	**—**	**1**	—	4
Aggregate unpaid principal balance in excess of (less than) fair value for non-accrual loans or loans more than 90 days past due	**—**	**—**	—	—

In addition to the amounts reported above, $719 million and $1,068 million of unfunded commitments related to certain credit products selected for fair value accounting were outstanding as of December 31, 2021 and 2020, respectively.

Changes in the fair value of funded and unfunded credit products are classified in *Principal transactions* in Citi's Consolidated Statement of Income. Related interest revenue is measured based on the contractual interest rates and reported as *Interest revenue* on *Trading account assets* or loan interest depending on the balance sheet classifications of the credit products. The changes in fair value for the years ended December 31, 2021 and 2020 due to instrument-specific credit risk totaled to a loss of $21 million and a loss of $16 million, respectively.

Certain Investments in Unallocated Precious Metals

Citigroup invests in unallocated precious metals accounts (gold, silver, platinum and palladium) as part of its commodity and foreign currency trading activities or to economically hedge certain exposures from issuing structured liabilities. Under ASC 815, the investment is bifurcated into a debt host contract and a commodity forward derivative instrument. Citigroup elects the fair value option for the debt host contract, and reports the debt host contract within *Trading account assets* on the Company's Consolidated Balance Sheet. The total carrying amount of debt host contracts across unallocated precious metals accounts was approximately $0.3 billion and $0.5 billion at December 31, 2021 and 2020, respectively. The amounts are expected to fluctuate based on trading activity in future periods.

As part of its commodity and foreign currency trading activities, Citi trades unallocated precious metals investments and executes forward purchase and forward sale derivative contracts with trading counterparties. When Citi sells an unallocated precious metals investment, Citi's receivable from its depository bank is repaid and Citi derecognizes its investment in the unallocated precious metal. The forward purchase or sale contract with the trading counterparty indexed to unallocated precious metals is accounted for as a derivative, at fair value through earnings. As of December 31, 2021, there were approximately $15.2 billion and $10.5 billion of notional amounts of such forward purchase and forward sale derivative contracts outstanding, respectively.

Certain Investments in Private Equity and Real Estate Ventures

Citigroup invests in private equity and real estate ventures for the purpose of earning investment returns and for capital appreciation. The Company has elected the fair value option for certain of these ventures, because such investments are considered similar to many private equity or hedge fund activities in Citi's investment companies, which are reported at fair value. The fair value option brings consistency in the accounting and evaluation of these investments. All investments (debt and equity) in such private equity and real estate entities are accounted for at fair value. These investments are classified as *Investments* on Citigroup's Consolidated Balance Sheet.

Changes in the fair values of these investments are classified in *Other revenue* in the Company's Consolidated Statement of Income.

Certain Mortgage Loans Held-for-Sale (HFS)

Citigroup has elected the fair value option for certain purchased and originated prime fixed rate and conforming adjustable rate first mortgage loans HFS. These loans are intended for sale or securitization and are hedged with derivative instruments. The Company has elected the fair value option to mitigate accounting mismatches in cases where hedge accounting is complex and to achieve operational simplifications.

The following table provides information about certain mortgage loans HFS carried at fair value:

In millions of dollars	**December 31, 2021**	December 31, 2020
Carrying amount reported on the Consolidated Balance Sheet	**$3,035**	$1,742
Aggregate fair value in excess of (less than) unpaid principal balance	**70**	91
Balance of non-accrual loans or loans more than 90 days past due	**1**	—
Aggregate unpaid principal balance in excess of fair value for non-accrual loans or loans more than 90 days past due	—	

The changes in the fair values of these mortgage loans are reported in *Other revenue* in the Company's Consolidated Statement of Income. There was no net change in fair value during the years ended December 31, 2021 and 2020 due to instrument-specific credit risk. Related interest income continues to be measured based on the contractual interest rates and reported as *Interest revenue* in the Consolidated Statement of Income.

Certain Debt Liabilities

The Company has elected the fair value option for certain debt liabilities. The Company elected the fair value option because these exposures are considered to be trading-related positions and, therefore, they are managed on a fair value basis. These positions will continue to be classified as debt, deposits or derivatives classified as *Trading account liabilities* on the Company's Consolidated Balance Sheet according to their legal form.

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

In billions of dollars	**December 31, 2021**	December 31, 2020
Interest rate linked	**$38.9**	$34.5
Foreign exchange linked	**—**	1.2
Equity linked	**36.1**	27.3
Commodity linked	**3.9**	1.4
Credit linked	**3.7**	2.6
Total	**$82.6**	$67.0

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

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 Balance Sheet. The portion of the changes in fair value attributable to changes in Citigroup's own credit spreads (i.e., 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, 2021**	December 31, 2020
Carrying amount reported on the Consolidated Balance Sheet	**$82,609**	$67,063
Aggregate unpaid principal balance in excess of (less than) fair value	**(2,459)**	(5,130)

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

In millions of dollars	**December 31, 2021**	December 31, 2020
Carrying amount reported on the Consolidated Balance Sheet	**$7,358**	$4,683
Aggregate unpaid principal balance in excess of (less than) fair value	**(644)**	68

26. PLEDGED ASSETS, COLLATERAL, GUARANTEES AND COMMITMENTS

Pledged Assets

In connection with Citi's financing and trading activities, Citi has pledged assets to collateralize its obligations under repurchase agreements, secured financing agreements, secured liabilities of consolidated VIEs and other borrowings. The approximate carrying values of the significant components of pledged assets recognized on Citi's Consolidated Balance Sheet included the following:

In millions of dollars	**December 31, 2021**	December 31, 2020
Investment securities	**$252,192**	$231,696
Loans	**232,319**	239,699
Trading account assets	**140,980**	174,717
Total	**$625,491**	$646,112

Restricted Cash

Citigroup defines restricted cash (as cash subject to withdrawal restrictions) to include cash deposited with central banks that must be maintained to meet minimum regulatory requirements, and cash set aside for the benefit of customers or for other purposes such as compensating balance arrangements or debt retirement. Restricted cash includes minimum reserve requirements with the Federal Reserve Bank and certain other central banks and cash segregated to satisfy rules regarding the protection of customer assets as required by Citigroup broker-dealers' primary regulators, including the United States Securities and Exchange Commission (SEC), the Commodity Futures Trading Commission and the United Kingdom's Prudential Regulation Authority.

Restricted cash is included on the Consolidated Balance Sheet within the following balance sheet lines:

In millions of dollars	**December 31, 2021**	December 31, 2020
Cash and due from banks	**$ 2,786**	$ 3,774
Deposits with banks, net of allowance	**10,636**	14,203
Total	**$13,422**	$17,977

In addition, included in *Cash and due from banks* and *Deposits with banks* at December 31, 2021 and 2020 were $13.7 billion and $9.4 billion, respectively, of cash segregated under federal and other brokerage regulations or deposited with clearing organizations.

Collateral

At December 31, 2021 and 2020, the approximate fair value of collateral received by Citi that may be resold or repledged, excluding the impact of allowable netting, was $650.8 billion and $671.6 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, 2021 and 2020, a substantial portion of the collateral received by Citi 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.

In addition, at December 31, 2021 and 2020, Citi had pledged $481.0 billion and $470.7 billion, respectively, of collateral that may not be sold or repledged by the secured parties.

Leases

The Company's operating leases, where Citi is a lessee, include real estate such as office space and branches and various types of equipment. 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 six years as of December 31, 2021 and 2020. The operating lease ROU asset was $2.9 billion and $2.8 billion, as of December 31, 2021 and 2020, respectively. The operating lease ROU liability was $3.1 billion and $3.1 billion, as of December 31, 2021 and 2020, 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 (principally for offices, branches and equipment), net of $12 million and $27 million of sublease income, was $1,061 million and $1,054 million for the years ended December 31, 2021 and 2020, respectively.

The table below provides the Cash Flow Statement Supplemental Information:

In millions of dollars	**December 31, 2021**	December 31, 2020
Cash paid for amounts included in the measurement of lease liabilities	**$806**	$814
Right-of-use assets obtained in exchange for new operating lease liabilities[1][2]	**845**	447

(1) Represents non-cash activity and, accordingly, is not reflected in the Consolidated Statement of Cash Flows.
(2) Excludes the decrease in the right-of-use assets related to the purchase of a previously leased property.

Citi's future lease payments are as follows:

In millions of dollars	
2022	$ 763
2023	648
2024	542
2025	445
2026	346
Thereafter	753
Total future lease payments	$3,497
Less imputed interest (based on weighted-average discount rate of 3.0%)	$ (381)
Lease liability	$3,116

Operating lease expense was $1.1 billion for the year ended December 31, 2019.

Guarantees

Citi 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, Citi believes such amounts bear no relationship to the anticipated losses, if any, on these guarantees.

The following tables present information about Citi's guarantees:

In billions of dollars at December 31, 2021	Maximum potential amount of future payments: Expire within 1 year	Expire after 1 year	Total amount outstanding	Carrying value *(in millions of dollars)*
Financial standby letters of credit	$ 34.3	$ 58.4	$ 92.7	$ 791
Performance guarantees	6.6	6.4	13.0	47
Derivative instruments considered to be guarantees	14.6	48.9	63.5	514
Loans sold with recourse	—	1.7	1.7	15
Securities lending indemnifications[1]	121.9	—	121.9	—
Credit card merchant processing[2]	119.4	—	119.4	1
Credit card arrangements with partners	—	0.8	0.8	7
Other	2.0	12.0	14.0	34
Total	**$298.8**	**$128.2**	**$427.0**	**$1,409**

In billions of dollars at December 31, 2020	Maximum potential amount of future payments: Expire within 1 year	Expire after 1 year	Total amount outstanding	Carrying value *(in millions of dollars)*
Financial standby letters of credit	$ 25.3	$ 68.4	$ 93.7	$1,407
Performance guarantees	7.3	6.0	13.3	72
Derivative instruments considered to be guarantees	20.0	60.9	80.9	671
Loans sold with recourse	—	1.2	1.2	9
Securities lending indemnifications[1]	112.2	—	112.2	—
Credit card merchant processing[2]	101.9	—	101.9	3
Credit card arrangements with partners	0.2	0.8	1.0	7
Other	—	12.0	12.0	35
Total	$266.9	$149.3	$416.2	$2,204

(1) The carrying values of securities lending indemnifications were not material for either period presented, as the probability of potential liabilities arising from these guarantees is minimal.
(2) At December 31, 2021 and 2020, this maximum potential exposure was estimated to be $119 billion and $102 billion, respectively. However, Citi believes that the maximum exposure is not representative of the actual potential loss exposure based on its historical experience. This contingent liability is unlikely to arise, as most products and services are delivered when purchased and amounts are refunded when items are returned to merchants.

Financial Standby Letters of Credit

Citi issues standby letters of credit, which substitute its own credit for that of the borrower. If a letter of credit is drawn down, the borrower is obligated to repay Citi. Standby letters of credit protect a third party from defaults on contractual obligations. Financial standby letters of credit include (i) guarantees of payment of insurance premiums and reinsurance risks that support industrial revenue bond underwriting, (ii) settlement of payment obligations to clearing houses, including futures and over-the-counter derivatives clearing (see further discussion below), (iii) support options and purchases of securities in lieu of escrow deposit accounts and (iv) letters of credit that backstop loans, credit facilities, promissory notes and trade acceptances.

Performance Guarantees

Performance guarantees and letters of credit are issued to guarantee a customer's tender bid on a construction or systems-installation project or to guarantee completion of such projects in accordance with contract terms. They are also issued to support a customer's obligation to supply specified products, commodities or maintenance or warranty services to a third party.

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 Citi's derivatives activities, see Note 22 to the Consolidated Financial Statements.

Derivative instruments considered to be guarantees include only those instruments that require Citi 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 Citi are excluded from the tables above as they are disclosed separately in Note 22 to the Consolidated Financial Statements. In instances where Citi's maximum potential future payment is unlimited, the notional amount of the contract is disclosed.

Loans Sold with Recourse

Loans sold with recourse represent Citi's obligations to reimburse the buyers for loan losses under certain circumstances. Recourse refers to the clause in a sales agreement under which a seller/lender will fully reimburse the buyer/investor for any losses resulting from the purchased loans. This may be accomplished by the sellers taking back any loans that become delinquent.

In addition to the amounts shown in the tables above, Citi has recorded a repurchase reserve for its potential repurchases or make-whole liability regarding residential mortgage representation and warranty claims related to its whole loan sales to U.S. government-sponsored agencies and, to a lesser extent, private investors. The repurchase reserve was approximately $19 million and $31 million at December 31, 2021 and 2020, respectively, and these amounts are included in *Other liabilities* on the Consolidated Balance Sheet.

Securities Lending Indemnifications

Owners of securities frequently lend those securities for a fee to other parties who may sell them short or deliver them to another party to satisfy some other obligation. Banks may administer such securities lending programs for their clients. Securities lending indemnifications are issued by the bank to guarantee that a securities lending customer will be made whole in the event that the security borrower does not return the security subject to the lending agreement and collateral held is insufficient to cover the market value of the security.

Credit Card Merchant Processing

Credit card merchant processing guarantees represent the Company's indirect obligations in connection with (i) providing transaction processing services to various merchants with respect to its private label cards and (ii) potential liability for bank card transaction processing services. The nature of the liability in either case arises as a result of a billing dispute between a merchant and a cardholder that is ultimately resolved in the cardholder's favor. The merchant is liable to refund the amount to the cardholder. In general, if the credit card processing company is unable to collect this amount from the merchant, the credit card processing company bears the loss for the amount of the credit or refund paid to the cardholder.

With regard to (i) above, Citi has the primary contingent liability with respect to its portfolio of private label merchants. The risk of loss is mitigated as the cash flows between Citi and the merchant are settled on a net basis, and Citi has the right to offset any payments with cash flows otherwise due to the merchant. To further mitigate this risk, Citi may delay settlement, require a merchant to make an escrow deposit, include event triggers to provide Citi with more financial and operational control in the event of the financial deterioration of the merchant or require various credit enhancements (including letters of credit and bank guarantees). In the unlikely event that a private label merchant is unable to deliver products, services or a refund to its private label cardholders, Citi is contingently liable to credit or refund cardholders.

With regard to (ii) above, Citi has a potential liability for bank card transactions where Citi provides the transaction processing services as well as those where a third party provides the services and Citi acts as a secondary guarantor, should that processor fail to perform.

Citi's maximum potential contingent liability related to both bank card and private label merchant processing services is estimated to be the total volume of credit card transactions that meet the requirements to be valid charge-back transactions at any given time. At December 31, 2021 and 2020, this maximum potential exposure was estimated to be $119.4 billion and $101.9 billion, respectively.

However, Citi believes that the maximum exposure is not representative of the actual potential loss exposure based on its historical experience. This contingent liability is unlikely to arise, as most products and services are delivered when purchased and amounts are refunded when items are returned to merchants. Citi assesses the probability and amount of its contingent liability related to merchant processing based on the financial strength of the primary guarantor, the extent and nature of unresolved charge-backs and its historical loss experience. At December 31, 2021 and 2020, the losses incurred and the carrying amounts of Citi's contingent obligations related to merchant processing activities were immaterial.

Credit Card Arrangements with Partners

Citi, in one of its credit card partner arrangements, provides guarantees to the partner regarding the volume of certain customer originations during the term of the agreement. To the extent that such origination targets are not met, the guarantees serve to compensate the partner for certain payments that otherwise would have been generated in connection with such originations.

Other Guarantees and Indemnifications

Credit Card Protection Programs

Citi, through its credit card businesses, provides various cardholder protection programs on several of its card products, including programs that provide coverage for certain losses associated with purchased products, and protection for certain travel-related purchases. These guarantees are not included in the table, since the total outstanding amount of the guarantees and Citi's maximum exposure to loss cannot be quantified. The protection is limited to certain types of purchases and losses, and it is not possible to quantify the purchases that would qualify for these benefits at any given time. Citi assesses the probability and amount of its potential liability related to these programs based on the extent and nature of its historical loss experience. At December 31, 2021 and 2020, the actual and estimated losses incurred and the carrying value of Citi's obligations related to these programs were immaterial.

Other Representation and Warranty Indemnifications

In the normal course of business, Citi 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 Citi 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 Citi'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, these indemnifications are not included in the tables above.

Value-Transfer Networks (Including Exchanges and Clearing Houses) (VTNs)

Citi is a member of, or shareholder in, hundreds 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. Citi'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. The maximum exposure is difficult to estimate as this would require an assessment of claims that have not yet occurred; however, Citi believes the risk of loss is remote given historical experience with the VTNs. Accordingly, Citi's participation in VTNs is not reported in the guarantees tables above, and there are no amounts reflected on the Consolidated Balance Sheet as of December 31, 2021 or 2020 for potential obligations that could arise from Citi's involvement with VTN associations.

Long-Term Care Insurance Indemnification

In 2000, Travelers Life & Annuity (Travelers), then a subsidiary of Citi, entered into a reinsurance agreement to transfer the risks and rewards of its long-term care (LTC) business to GE Life (now Genworth Financial Inc., or Genworth), then a subsidiary of the General Electric Company (GE). As part of this transaction, the reinsurance obligations were provided by two regulated insurance subsidiaries of GE Life, which funded two collateral trusts with securities. Presently, as discussed below, the trusts are referred to as the Genworth Trusts.

As part of GE's spin-off of Genworth in 2004, GE retained the risks and rewards associated with the 2000 Travelers reinsurance agreement by providing a reinsurance contract to Genworth through GE's Union Fidelity Life Insurance Company (UFLIC) subsidiary that covers the Travelers LTC policies. In addition, GE provided a capital maintenance agreement in favor of UFLIC that is designed to assure that UFLIC will have the funds to pay its reinsurance obligations. As a result of these reinsurance agreements and the spin-off of Genworth, Genworth has reinsurance protection from UFLIC (supported by GE) and has reinsurance obligations in connection with the Travelers LTC policies. As noted below, the Genworth reinsurance obligations now benefit Brighthouse Financial, Inc. (Brighthouse). While neither Brighthouse nor Citi are direct beneficiaries of the capital maintenance agreement between GE and UFLIC, Brighthouse and Citi benefit indirectly from the existence of the capital maintenance agreement, which helps assure that UFLIC will continue to have funds necessary to pay its reinsurance obligations to Genworth.

In connection with Citi's 2005 sale of Travelers to MetLife Inc. (MetLife), Citi provided an indemnification to MetLife for losses (including policyholder claims) relating to the LTC business for the entire term of the Travelers LTC policies, which, as noted above, are reinsured by subsidiaries of Genworth. In 2017, MetLife spun off its retail insurance business to Brighthouse. As a result, the Travelers LTC policies now reside with Brighthouse. The original reinsurance agreement between Travelers (now Brighthouse) and Genworth remains in place and Brighthouse is the sole beneficiary of the Genworth Trusts. The Genworth Trusts are designed to provide collateral to Brighthouse in an amount equal to the statutory liabilities of Brighthouse in respect of the

Travelers LTC policies. The assets in the Genworth Trusts are evaluated and adjusted periodically to ensure that the fair value of the assets continues to provide collateral in an amount equal to these estimated statutory liabilities, as the liabilities change over time.

If both (i) Genworth fails to perform under the original Travelers/GE Life reinsurance agreement for any reason, including its insolvency or the failure of UFLIC to perform under its reinsurance contract or GE to perform under the capital maintenance agreement, and (ii) the assets of the two Genworth Trusts are insufficient or unavailable, then Citi, through its LTC reinsurance indemnification, must reimburse Brighthouse for any losses incurred in connection with the LTC policies. Since both events would have to occur before Citi would become responsible for any payment to Brighthouse pursuant to its indemnification obligation, and the likelihood of such events occurring is currently not probable, there is no liability reflected on the Consolidated Balance Sheet as of December 31, 2021 and 2020 related to this indemnification. However, if both events become reasonably possible (meaning more than remote but less than probable), Citi will be required to estimate and disclose a reasonably possible loss or range of loss to the extent that such an estimate could be made. In addition, if both events become probable, Citi will be required to accrue for such liability in accordance with applicable accounting principles.

Futures and Over-the-Counter Derivatives Clearing

Citi provides clearing services on central clearing parties (CCP) for clients that need to clear exchange-traded and over-the-counter (OTC) derivatives contracts with CCPs. Based on all relevant facts and circumstances, Citi has concluded that it acts as an agent for accounting purposes in its role as clearing member for these client transactions. As such, Citi does not reflect the underlying exchange-traded or OTC derivatives contracts in its Consolidated Financial Statements. See Note 22 for a discussion of Citi's derivatives activities that are reflected in its Consolidated Financial Statements.

As a clearing member, Citi collects and remits cash and securities collateral (margin) between its clients and the respective CCP. In certain circumstances, Citi 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 depository institutions such as banks or carry brokers.

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

However, for exchange-traded and OTC-cleared derivatives contracts where Citi 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 Citi's Consolidated Balance Sheet. These conditions are met when Citi has contractually agreed with the client that (i) Citi will pass through to the client all interest paid by the CCP or depository institutions on the cash initial margin, (ii) Citi will not utilize its right as a clearing member to transform cash margin into other assets, (iii) Citi 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 Citi's bankruptcy estate. The total amount of cash initial margin collected and remitted in this manner was approximately $18.7 billion and $16.6 billion as of December 31, 2021 and 2020, 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, Citi 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, Citi 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 Citi as clearing member. Citi generally holds incremental cash or securities margin posted by the client, which would typically be expected to be sufficient to mitigate Citi'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 Citi's Consolidated Balance Sheet.

Carrying Value—Guarantees and Indemnifications

At December 31, 2021 and 2020, the total carrying amounts of the liabilities related to the guarantees and indemnifications included in the tables above amounted to approximately $1.4 billion and $2.2 billion, respectively. The carrying value of financial and performance guarantees is included in *Other liabilities*. For loans sold with recourse, the carrying value of the liability is included in *Other liabilities*.

Collateral

Cash collateral available to Citi to reimburse losses realized under these guarantees and indemnifications amounted to $56.5 billion and $51.6 billion at December 31, 2021 and 2020, respectively. Securities and other marketable assets held as collateral amounted to $84.2 billion and $80.1 billion at December 31, 2021 and 2020, respectively. The majority of collateral is held to reimburse losses realized under securities lending indemnifications. In addition, letters of credit in favor of Citi held as collateral amounted to $4.1 billion and $6.6 billion at December 31, 2021 and 2020, respectively. Other property may also be available to Citi to cover losses under certain guarantees and indemnifications; however, the value of such property has not been determined.

Performance Risk

Citi evaluates the performance risk of its guarantees based on the assigned referenced counterparty internal or external ratings. Where external ratings are used, investment-grade ratings are considered to be Baa/BBB and above, while anything below is considered non-investment grade. Citi's internal ratings are in line with the related external rating system. On certain underlying referenced assets or entities, ratings are not available. Such referenced assets are included in the "not rated" category. The maximum potential amount of the future payments related to the outstanding guarantees is determined to be the notional amount of these contracts, which is the par amount of the assets guaranteed.

Presented in the tables below are the maximum potential amounts of future payments that are classified based on internal and external credit ratings. 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, Citi believes such amounts bear no relationship to the anticipated losses, if any, on these guarantees.

	Maximum potential amount of future payments			
In billions of dollars at December 31, 2021	**Investment grade**	**Non-investment grade**	**Not rated**	**Total**
Financial standby letters of credit	**$81.4**	**$11.3**	**$ —**	**$ 92.7**
Performance guarantees	**10.5**	**2.5**	**—**	**13.0**
Derivative instruments deemed to be guarantees	**—**	**—**	**63.5**	**63.5**
Loans sold with recourse	**—**	**—**	**1.7**	**1.7**
Securities lending indemnifications	**—**	**—**	**121.9**	**121.9**
Credit card merchant processing	**—**	**—**	**119.4**	**119.4**
Credit card arrangements with partners	**—**	**—**	**0.8**	**0.8**
Other	**—**	**12.0**	**2.0**	**14.0**
Total	**$91.9**	**$25.8**	**$309.3**	**$427.0**

	Maximum potential amount of future payments			
In billions of dollars at December 31, 2020	Investment grade	Non-investment grade	Not rated	Total
Financial standby letters of credit	$78.5	$14.6	$ 0.6	$ 93.7
Performance guarantees	9.8	3.0	0.5	13.3
Derivative instruments deemed to be guarantees	—	—	80.9	80.9
Loans sold with recourse	—	—	1.2	1.2
Securities lending indemnifications	—	—	112.2	112.2
Credit card merchant processing	—	—	101.9	101.9
Credit card arrangements with partners	—	—	1.0	1.0
Other	—	12.0	—	12.0
Total	$88.3	$29.6	$298.3	$416.2

Credit Commitments and Lines of Credit

The table below summarizes Citigroup's credit commitments:

In millions of dollars	U.S.	Outside of U.S.	December 31, 2021	December 31, 2020
Commercial and similar letters of credit	$ 654	$ 5,256	$ 5,910	$ 5,221
One- to four-family residential mortgages	1,752	2,599	4,351	5,002
Revolving open-end loans secured by one- to four-family residential properties	6,790	1,123	7,913	9,626
Commercial real estate, construction and land development	15,877	1,966	17,843	12,867
Credit card lines	601,018	99,541	700,559	710,399
Commercial and other consumer loan commitments	207,234	113,322	320,556	322,458
Other commitments and contingencies	5,276	373	5,649	5,715
Total	**$838,601**	**$224,180**	**$1,062,781**	$1,071,288

The majority of unused commitments are contingent upon customers maintaining specific credit standards. Commercial commitments generally have floating interest rates and fixed expiration dates and may require payment of fees. Such fees (net of certain direct costs) are deferred and, upon exercise of the commitment, amortized over the life of the loan or, if exercise is deemed remote, amortized over the commitment period.

Commercial and Similar Letters of Credit

A commercial letter of credit is an instrument by which Citigroup substitutes its credit for that of a customer to enable the customer to finance the purchase of goods or to incur other commitments. Citigroup issues a letter on behalf of its client to a supplier and agrees to pay the supplier upon presentation of documentary evidence that the supplier has performed in accordance with the terms of the letter of credit. When a letter of credit is drawn, the customer is then required to reimburse Citigroup.

One- to Four-Family Residential Mortgages

A one- to four-family residential mortgage commitment is a written confirmation from Citigroup to a seller of a property that the bank will advance the specified sums enabling the buyer to complete the purchase.

Revolving Open-End Loans Secured by One- to Four-Family Residential Properties

Revolving open-end loans secured by one- to four-family residential properties are essentially home equity lines of credit. A home equity line of credit is a loan secured by a primary residence or second home to the extent of the excess of fair market value over the debt outstanding for the first mortgage.

Commercial Real Estate, Construction and Land Development

Commercial real estate, construction and land development include unused portions of commitments to extend credit for the purpose of financing commercial and multifamily residential properties as well as land development projects.

Both secured-by-real-estate and unsecured commitments are included in this line, as well as undistributed loan proceeds, where there is an obligation to advance for construction progress payments. However, this line only includes those extensions of credit that, once funded, will be classified as *Total loans, net* on the Consolidated Balance Sheet.

Credit Card Lines

Citigroup provides credit to customers by issuing credit cards. The credit card lines are cancelable by providing notice to the cardholder or without such notice as permitted by local law.

Commercial and Other Consumer Loan Commitments

Commercial and other consumer loan commitments include overdraft and liquidity facilities as well as commercial commitments to make or purchase loans, purchase third-party receivables, provide note issuance or revolving underwriting facilities and invest in the form of equity.

Other Commitments and Contingencies

Other commitments and contingencies include all other transactions related to commitments and contingencies not reported on the lines above.

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

In addition, in the normal course of business, Citigroup 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, 2021 and 2020, Citigroup had approximately $126.6 billion and $71.8 billion of unsettled reverse repurchase and securities borrowing agreements, and approximately $41.1 billion and $62.5 billion of 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 11 to the Consolidated Financial Statements.

27. 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.

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

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, 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, fair lending, 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, certain affiliates and subsidiaries of Citigroup 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 seeks 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. As of December 31, 2021, Citigroup estimates that the reasonably possible unaccrued loss for these matters ranges up to approximately $1.5 billion in the aggregate.

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

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

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

ANZ Underwriting Matter

On February 11, 2022, the Australian Commonwealth Director of Public Prosecutions discontinued the prosecution of charges that were brought against Citigroup Global Markets Australia Pty Limited (CGMA) and two Citi employees for alleged criminal cartel offenses in relation to CGMA's role as a joint underwriter and lead manager with other banks in the 2015 institutional share placement by Australia and New Zealand Banking Group Limited (ANZ). The case, captioned R v. CITIGROUP GLOBAL MARKETS AUSTRALIA PTY LIMITED 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

On January 28, 2022, the Securities and Futures Commission of Hong Kong (SFC) entered into a resolution with Citigroup Global Markets Asia Limited (CGMAL) of the SFC's investigation into CGMAL's equity sales trading desks in connection with facilitation trades. As part of the resolution, CGMAL agreed to pay a civil penalty of $44.6 million. Citigroup is cooperating with related investigations and inquiries by other government and regulatory agencies in Asia Pacific countries and elsewhere.

Foreign Exchange Matters

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

Antitrust and Other Litigation: In 2018, a number of institutional investors who opted out of the previously disclosed August 2018 final settlement filed an action against Citigroup, Citibank, Citigroup Global Markets Inc. (CGMI) and other defendants, captioned ALLIANZ GLOBAL INVESTORS, ET AL. v. BANK OF AMERICA CORP., ET AL., in the United States District Court for the Southern District of New York. Plaintiffs allege that defendants manipulated, and colluded to manipulate, the foreign exchange markets. 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-CV-10364 (S.D.N.Y.) (Schofield, J.).

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

In 2015, a putative class of consumers and businesses in the U.S. who directly purchased supracompetitive foreign currency at benchmark exchange rates filed an action against Citigroup and other defendants, captioned NYPL v. JPMORGAN CHASE & CO., ET AL., in the United States District Court for the Northern District of California (later transferred to the United States District Court for the Southern District of New York). Subsequently, plaintiffs filed an amended class action complaint against Citigroup, Citibank and Citicorp as defendants. Plaintiffs allege that they suffered losses as a result of defendants' alleged manipulation of, and collusion with respect to, the foreign exchange market. Plaintiffs assert claims under federal and California antitrust and consumer protection laws, and seek compensatory damages, treble damages and declaratory and injunctive relief. Additional information concerning this action is publicly available in court filings under the docket numbers 15-CV-2290 (N.D. Cal.) (Chhabria, J.) and 15-CV-9300 (S.D.N.Y.) (Schofield, J.).

In 2019, two applications, captioned MICHAEL O'HIGGINS FX CLASS REPRESENTATIVE LIMITED v. BARCLAYS BANK PLC AND OTHERS and PHILLIP EVANS v. BARCLAYS BANK PLC AND OTHERS, were made to the U.K.'s Competition Appeal Tribunal requesting permission to commence collective proceedings against Citigroup, Citibank and other defendants. The applications seek compensatory damages for losses alleged to have arisen from the actions at issue in the European Commission's foreign exchange spot trading infringement decision (European Commission Decision of May 16, 2019 in Case AT.40135-FOREX (Three Way Banana Split) C(2019) 3631 final). Additional information concerning these actions is publicly available in court filings under the case numbers 1329/7/7/19 and 1336/7/7/19.

In 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. Citibank's motion to dismiss plaintiffs' petition for certification was denied on April 12, 2021. A motion for leave to appeal this decision is currently pending before the Supreme Court of Israel. Additional information concerning this action is publicly available in court filings under the docket number CA 29013-09-18.

Hong Kong Private Bank Litigation

In 2007, a claim was filed in the High Court of Hong Kong claiming damages of over $51 million against Citibank. The case, captioned PT ASURANSI TUGU PRATAMA INDONESIA TBK v. CITIBANK N.A., was dismissed in 2018 by the Hong Kong Court of First Instance on grounds that the claim was time-barred. Plaintiff has appealed the court's dismissal. Additional information concerning this action is publicly available in court filings under the docket number CACV 548/2018.

Interbank Offered Rates-Related Litigation

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 for the Southern District of New York. 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. Additional information concerning this action is publicly available in court filings under the docket numbers 19-CV-439 (S.D.N.Y.) (Daniels, J.) and 20-1492 (2d Cir.).

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

Interchange Fee Litigation

Beginning in 2005, several putative class actions were filed against Citigroup, Citibank and Citicorp, together with Visa, MasterCard and other banks and their affiliates, in various federal district courts and consolidated with other related individual cases in a multi-district litigation proceeding in the United States District Court for the Eastern District of New York. This proceeding is captioned IN RE PAYMENT CARD INTERCHANGE FEE AND MERCHANT DISCOUNT ANTITRUST LITIGATION.

The plaintiffs, merchants that accept Visa and MasterCard branded payment cards, and various membership associations that claim to represent certain groups of merchants, allege, among other things, that defendants have engaged in conspiracies to set the price of interchange and merchant discount fees on credit and debit card transactions and to restrain trade unreasonably through various Visa and MasterCard rules governing merchant conduct, all in violation of Section 1 of the Sherman Act and certain California statutes. Plaintiffs further alleged violations of Section 2 of the Sherman Act. Supplemental complaints also were filed against defendants in the putative class actions alleging that Visa's and MasterCard's respective initial public offerings were anticompetitive and violated Section 7 of the Clayton Act, and that MasterCard's initial public offering constituted a fraudulent conveyance.

In 2016, the Court of Appeals reversed the district court's approval of a class settlement and remanded for further proceedings. The district court thereafter appointed separate interim counsel for a putative class seeking damages and a putative class seeking injunctive relief. Amended or new complaints on behalf of the putative classes and various individual merchants were subsequently filed, including a further amended complaint on behalf of a putative damages class and a new complaint on behalf of a putative injunctive class, both of which named Citigroup and Related Parties. In addition, numerous merchants have filed amended or new complaints against Visa, MasterCard, and in some instances one or more issuing banks, including Citigroup and affiliates.

In 2019, the district court granted the damages class plaintiffs' motion for final approval of a new settlement with the defendants. The settlement involves the damages class only and does not settle the claims of the injunctive relief class or any actions brought on a non-class basis by individual merchants. The settlement provides for a cash payment to the damages class of $6.24 billion, later reduced by $700 million based on the transaction volume of class members that opted out from the settlement. Several merchants and merchant groups have appealed the final approval order. On September 27, 2021, the court granted the injunctive relief class plaintiffs' motion to certify a non-opt-out class. Additional information concerning these consolidated actions is publicly available in court filings under the docket number MDL 05-1720 (E.D.N.Y.) (Brodie, J.).

Interest Rate and Credit Default Swap Matters

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

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

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

Madoff-Related Litigation

In December 2008, a Securities Investor Protection Act (SIPA) trustee was appointed for the SIPA liquidation of Bernard L. Madoff Investment Securities LLC (BLMIS), in the United States Bankruptcy Court for the Southern District of New York. Beginning in 2010, he commenced actions against multiple Citi entities, including Citibank, Citicorp North America, Inc., CGML and Citibank (Switzerland) AG, seeking recovery of monies that originated at BLMIS and were allegedly received by the Citi entities as subsequent transferees. On August 30, 2021, the United States Court of Appeals for the Second Circuit reversed the bankruptcy court's denial of the SIPA trustee's motion for leave to amend his complaint and remanded the case to the bankruptcy court for further proceedings. On January 27, 2022, Citibank and Citicorp North America, Inc. filed a petition for a writ of certiorari in the United States Supreme Court seeking review of the Second Circuit's holding that good faith is an affirmative defense. The SIPA trustee filed an amended complaint against Citibank, Citicorp North America, Inc. and CGML on February 11, 2022. The action against Citibank (Switzerland) AG was dismissed on February 23, 2022. Additional information concerning these actions is publicly available in court filings under the docket numbers 10-5345, 12-1700 (Bankr. S.D.N.Y.) (Morris, J.); 12-MC-115 (S.D.N.Y.) (Rakoff, J.); and 17-2992, 17-3076, 17-3139, 19-4282, 20-1333 (2d Cir.).

Also beginning in 2010, the British Virgin Islands liquidators of Fairfield Sentry Limited, whose assets were invested with BLMIS, commenced multiple actions in the United States Bankruptcy Court for the Southern District of New York against over 400 defendants, including CGML Citibank (Switzerland) AG; Citibank, N.A., London; Citivic Nominees Limited; and Cititrust (Bahamas) Limited. The actions seek recovery of monies that were allegedly received directly or indirectly by Citi entities from Fairfield Sentry. Appeals concerning various dismissed claims and a petition for interlocutory review on the one claim remaining are pending before the United States District Court for the Southern District of New York, and the remaining claim is proceeding in the Bankruptcy Court. Citi (Switzerland) AG and Citivic Nominees Limited filed a motion to dismiss for lack of personal jurisdiction on October 29, 2021. These actions are captioned FAIRFIELD SENTRY LTD., ET AL. v. CGML, ET AL.; FAIRFIELD SENTRY LTD., ET AL. v. CITIBANK NA LONDON, ET AL.; and FAIRFIELD SENTRY LTD., ET AL. v. ZURICH CAPITAL MARKETS COMPANY, ET AL. Additional information is publicly available in court filings under the docket numbers 10-13164, 10-3496, 10-3622, 10-3634, 11-2770 (Bankr. S.D.N.Y.) (Morris, J.); and 19-3911, 19-4267, 19-4396, 19-4484, 19-5106, 19-5135, 21-2997, 21-3243, 21-3526, 21-3529, 21-3530, 21-4307, 21-4498, 21-4496 (S.D.N.Y.) (Broderick, J.).

Parmalat Litigation

In 2004, an Italian commissioner appointed to oversee the administration of various Parmalat companies filed a complaint against Citigroup, Citibank and related parties, alleging that the defendants facilitated a number of frauds by Parmalat insiders. In 2008, a jury rendered a verdict in Citigroup's favor and awarded Citi $431 million. In 2019, the Italian Supreme Court affirmed the decision in the full amount awarded. Citigroup has taken steps to enforce the judgment in Italian and Belgian courts. Additional information concerning these actions is publicly available in court filings under (in Italy) the docket numbers 4133/2019 and 224/2022 (Court of Milan Enforcement Section) and (in Belgium) 20/3617/A (Brussels Court of First Instance) and 21/AR/1658 (Brussels Court of Appeal).

In 2015, Parmalat filed a claim in an Italian civil court in Milan claiming damages of €1.8 billion against Citigroup, Citibank and related parties, which the court later dismissed on grounds it was duplicative of Parmalat's previously unsuccessful claims. In 2019, the Milan Court of Appeal rejected Parmalat's appeal of the Milan court's dismissal, which Parmalat appealed to the Italian Supreme Court. Additional information concerning this action is publicly available in court filings under the docket number 20598/2019.

In January 2020, Parmalat, its three directors, and its sole shareholder, Sofil S.a.s., as co-plaintiffs, filed a claim before the Italian civil court in Milan seeking a declaratory judgment that they do not owe compensatory damages of €990 million to Citibank, which Citibank is seeking to dismiss. Additional information concerning this action is publicly available in court filings under the docket number 8611/2020.

Payment Protection Insurance

Regulators and courts in the U.K. have scrutinized the selling of payment protection insurance (PPI) by financial institutions for several years. Citibank continues to review customer claims relating to the sale of PPI in the U.K., to grant redress in accordance with the requirements of the U.K. Financial Conduct Authority, and to defend claims filed in U.K. courts.

Record-Keeping Matters

The U.S. Securities and Exchange Commission is conducting an investigation of CGMI and other firms regarding compliance with record-keeping obligations for broker-dealers and investment advisers in connection with business-related communications sent over unapproved electronic messaging channels. CGMI is cooperating with the investigation.

Revlon-Related Wire Transfer Litigation

In August 2020, Citibank filed actions in the United States District Court for the Southern District of New York, which have been consolidated under the caption IN RE CITIBANK AUGUST 11, 2020 WIRE TRANSFERS. The actions relate to a payment erroneously made by Citibank in its capacity as administrative agent for a Revlon credit facility. The action seeks the return of the erroneously transferred funds from certain fund managers. Citibank has asserted claims for unjust enrichment, conversion, money had and received, and payment by mistake. The court issued temporary restraining orders related to the subject funds. On February 16, 2021, the court issued a judgment in favor of the defendants, which Citibank later appealed in the United States Court of Appeals for the Second Circuit. In response to the district court's denial of Citibank's motion to extend the temporary restraining orders, Citibank filed a motion for an injunction with the United States Court of Appeals. Additional information concerning this action is publicly available in court filings under docket numbers 20-CV-6539 (S.D.N.Y.) (Furman, J.) and 21-487 (2d Cir.).

Shareholder Derivative and Securities Litigation

Beginning in October 2020, four derivative actions were filed in the United States District Court for the Southern District of New York, purportedly on behalf of Citigroup (as nominal defendant) against certain of Citigroup's current and former directors. The actions were later consolidated under the case name IN RE CITIGROUP INC. SHAREHOLDER DERIVATIVE LITIGATION. The consolidated complaint asserts claims for breach of fiduciary duty, unjust enrichment, and contribution and indemnification in connection with defendants' alleged failures to implement adequate internal controls. In addition, the consolidated complaint asserts derivative claims for violations of Sections 10(b) and 14(a) of the Securities Exchange Act of 1934 in connection with statements in Citigroup's 2019 and 2020 annual meeting proxy statements. On February 8, 2021, the court stayed the action pending resolution of defendants' motion to dismiss in IN RE CITIGROUP SECURITIES LITIGATION. Additional information concerning this action is publicly available in court filings under the docket number 1:20-CV-09438 (S.D.N.Y.) (Nathan, J.).

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

Beginning in October 2020, three putative class action complaints were filed in the United States District Court for the Southern District of New York against Citigroup and certain of its current and former officers, asserting violations of Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 in connection with defendants' alleged misstatements concerning Citigroup's internal controls. The actions were later consolidated under the case name IN RE CITIGROUP SECURITIES LITIGATION. The consolidated complaint later added certain of Citigroup's current and former directors as defendants. Defendants have moved to dismiss the consolidated amended complaint. Additional information concerning this action is publicly available in court filings under the docket number 1:20-CV-9132 (S.D.N.Y.) (Nathan, J.).

Sovereign Securities Litigation

In 2015, putative class actions filed against CGMI and other defendants were consolidated under the caption IN RE TREASURY SECURITIES AUCTION ANTITRUST LITIGATION in the United States District Court for the Southern District of New York. Plaintiffs allege that defendants colluded to fix U.S. treasury auction bids by sharing competitively sensitive information ahead of the auctions, and that defendants colluded to boycott and prevent the emergence of an anonymous, all-to-all electronic trading platform in the U.S. Treasuries secondary market. Plaintiffs assert claims under antitrust laws, and seek damages, including treble damages where authorized by statute, and injunctive relief. On March 31, 2021, the court granted defendants' motion to dismiss, without prejudice. On May 14, 2021, plaintiffs filed an amended consolidated complaint. On June 14, 2021, certain defendants, including CGMI, moved to dismiss the amended 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 2017, purchasers of supranational, sub-sovereign and agency (SSA) bonds filed a proposed class action on behalf of direct and indirect purchasers of SSA 296 bonds against Citigroup, Citibank, CGMI, CGML, Citibank Canada, Citigroup Global Markets Canada, Inc. and other defendants, captioned JOSEPH MANCINELLI, ET AL. v. BANK OF AMERICA CORPORATION, ET AL., in the Federal Court in Canada. Plaintiffs have filed an amended claim that alleges defendants manipulated, and colluded to manipulate, the SSA bonds market, asserts claims for breach of the Competition Act, breach of foreign law, civil conspiracy, unjust enrichment, waiver of tort and breach of contract, and seeks compensatory and punitive damages, among other relief. Additional information concerning this action is publicly available in court filings under the docket number T-1871-17 (Fed. Ct.).

In 2018, a putative class action was filed against Citigroup, CGMI, Citigroup Financial Products Inc., Citigroup Global Markets Holdings Inc., Citibanamex, Grupo Banamex and other banks, captioned IN RE MEXICAN GOVERNMENT BONDS ANTITRUST LITIGATION, in the United States District Court for the Southern District of New York. The complaint alleges that defendants colluded in the Mexican sovereign bond market. In September 2019, the court granted defendants' motion to dismiss. In December 2019, plaintiffs filed an amended complaint against Citibanamex and other market makers in the Mexican sovereign bond market. Plaintiffs no longer assert any claims against Citigroup 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. In February 2020, certain defendants, including Citibanamex, moved to dismiss the amended complaint, which the court later granted. On June 10, 2021, plaintiffs moved for reconsideration of the decision dismissing certain defendants, including Citibanamex, which those defendants have jointly opposed. Additional information concerning this action is publicly available in court filings under the docket number 18 Civ. 2830 (S.D.N.Y.) (Oetken, J.).

On February 9, 2021, purchasers of Euro-denominated sovereign debt issued by European central governments added CGMI, CGML and others as defendants to a putative class action, captioned IN RE EUROPEAN GOVERNMENT BONDS ANTITRUST LITIGATION, in the United States District Court for the Southern District of New York. Plaintiffs allege that defendants engaged in a conspiracy to inflate prices of European government bonds in primary market auctions and to fix the prices of European government bonds in secondary markets. Plaintiffs assert a claim under the Sherman Act and seek treble damages and attorneys' fees. On June 4, 2021, certain defendants, including CGMI and CGML, filed a pre-motion letter with the court requesting leave to move to dismiss the action. Additional information concerning this action is publicly available in court filings under the docket number 19-CV-2601 (S.D.N.Y.) (Marrero, 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 approximate $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.

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 appealed to the United States Court of Appeals for the Second Circuit.

On August 20, 2021, the United States Court of Appeals for the Second Circuit issued its decision in the consolidated appeals in KIRSCHNER v. FITZSIMONS and KIRSCHNER v. CGMI. In the FITZSIMONS action, the Second Circuit affirmed the dismissal of the actual fraudulent transfer claim against the shareholder defendants, including the Citigroup affiliates. In the CGMI action, the Second Circuit affirmed the dismissal of all claims against CGMI except for the claim of constructive fraudulent conveyance. As to that claim, the Second Circuit vacated the dismissal and remanded to the district court for further proceedings on that claim and other claims that remain against certain other defendants that are not Citigroup affiliates. On November 29, 2021, on remand from the Second Circuit, the litigation trustee notified the United States District Court for the Southern District of New York that it was voluntarily dismissing all claims against CGMI pursuant to a settlement agreement. The district court approved the voluntary dismissal on December 10, 2021. Additional information concerning these actions is publicly available in court filings under the docket numbers 12 MC 2296 (S.D.N.Y.) (Cote, J.), 11 MD 2296 (S.D.N.Y.) (Cote, J.), 19-0449 (2d Cir.), and 19-3049 (2d Cir.).

Variable Rate Demand Obligation Litigation

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

On June 2, 2021, the Board of Directors of the San Diego Association of Governments, acting as the San Diego County Regional Transportation Commission, filed a parallel putative class action against the same defendants named in the already pending nationwide consolidated class action. The two actions were consolidated and on August 6, 2021, the plaintiffs in the nationwide putative class action filed a consolidated amended complaint, captioned THE CITY OF PHILADELPHIA, MAYOR AND CITY COUNCIL OF BALTIMORE, THE BOARD OF DIRECTORS OF THE SAN DIEGO ASSOCIATION OF GOVERNMENTS, ACTING AS THE SAN DIEGO COUNTY REGIONAL TRANSPORTATION COMMISSION v. BANK OF AMERICA CORP., ET AL. On September 14, 2021, defendants moved to dismiss the consolidated amended complaint in part. Additional information concerning this action is publicly available in court filings under the docket number 19-CV-1608 (S.D.N.Y.) (Furman, J.).

Wind Farm Litigations

Beginning in March 2021, six wind farms in Texas commenced actions in New York and Texas state courts for declaratory judgments and breach of contract, asserting that the February 2021 winter storm in Texas excused their performance to deliver energy to Citi Energy Inc. (CEI) under the force majeure provisions of their contracts with CEI. In addition, the wind farms sought temporary restraining orders and/or preliminary injunctions, preventing CEI from exercising remedies under the contracts.

Preliminary injunctions were denied with respect to five of the six wind farms: the New York court denied preliminary injunctions with respect to the Stephens Ranch I and Stephens Ranch II wind farms; the Texas court denied preliminary injunctions with respect to the Flat Top, Shannon and Midway wind farms. Later in 2021, Stephens Ranch I, Stephens Ranch II and Flat Top each voluntarily dismissed its action with prejudice. The Mariah del Norte wind farm voluntarily dismissed its action with prejudice on February 18, 2022. A motion to dismiss the remaining Shannon and Midway actions remains pending. Additional information concerning these actions is publicly available in court filings under docket numbers 652078/2021 (Sup. Ct. N.Y. Cnty.) (Reed, J.), 2021-01387 (1st Dep't), 652312/2021 (Sup. Ct. N.Y. Cnty.) (Reed, J.), 2021-23588 (District Court Harris County TX) (Schaffer, J.), and 2021-26150 (District Court Harris County TX) (Engelhart, J.).

Settlement Payments

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

28. CONDENSED CONSOLIDATING FINANCIAL STATEMENTS

Citigroup's Registration Statement on Form S-3 on file with the SEC includes its wholly owned subsidiary, Citigroup Global Markets Holdings Inc. (CGMHI), as a co-registrant. Any securities issued by CGMHI under the Form S-3 will be fully and unconditionally guaranteed by Citigroup.

The following are the Condensed Consolidating Statements of Income and Comprehensive Income for the years ended December 31, 2021, 2020 and 2019, Condensed Consolidating Balance Sheet as of December 31, 2021 and 2020 and Condensed Consolidating Statement of Cash Flows for the years ended December 31, 2021, 2020 and 2019 for Citigroup Inc., the parent holding company (Citigroup parent company), CGMHI, other Citigroup subsidiaries and eliminations and total consolidating adjustments. "Other Citigroup subsidiaries and eliminations" includes all other subsidiaries of Citigroup, intercompany eliminations and income (loss) from discontinued operations. "Consolidating adjustments" includes Citigroup parent company elimination of distributed and undistributed income of subsidiaries and investment in subsidiaries.

These Condensed Consolidating Financial Statements have been prepared and presented in accordance with SEC Regulation S-X Rule 3-10, "Financial Statements of Guarantors and Issuers of Guaranteed Securities Registered or Being Registered."

These Condensed Consolidating Financial Statements are presented for purposes of additional analysis, but should be considered in relation to the Consolidated Financial Statements of Citigroup taken as a whole.

Condensed Consolidating Statements of Income and Comprehensive Income

In millions of dollars	Year ended December 31, 2021 Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Revenues					
Dividends from subsidiaries	$ 6,482	$ —	$ —	$ (6,482)	$ —
Interest revenue	—	3,566	46,909	—	50,475
Interest revenue—intercompany	3,757	531	(4,288)	—	—
Interest expense	4,791	778	2,412	—	7,981
Interest expense—intercompany	294	1,320	(1,614)	—	—
Net interest income	$ (1,328)	$ 1,999	$ 41,823	$ —	$ 42,494
Commissions and fees	$ —	$ 7,770	$ 5,902	$ —	$ 13,672
Commissions and fees—intercompany	(36)	407	(371)	—	—
Principal transactions	976	10,140	(962)	—	10,154
Principal transactions—intercompany	(1,375)	(6,721)	8,096	—	—
Other revenue	(64)	576	5,052	—	5,564
Other revenue—intercompany	(133)	(60)	193	—	—
Total non-interest revenues	$ (632)	$ 12,112	$ 17,910	$ —	$ 29,390
Total revenues, net of interest expense	$ 4,522	$ 14,111	$ 59,733	$ (6,482)	$ 71,884
Provisions for credit losses and for benefits and claims	$ —	$ 6	$ (3,784)	$ —	$ (3,778)
Operating expenses					
Compensation and benefits	$ 10	$ 5,251	$ 19,873	$ —	$ 25,134
Compensation and benefits—intercompany	69	—	(69)	—	—
Other operating	83	2,868	20,108	—	23,059
Other operating—intercompany	11	2,826	(2,837)	—	—
Total operating expenses	$ 173	$ 10,945	$ 37,075	$ —	$ 48,193
Equity in undistributed income of subsidiaries	$ 16,596	$ —	$ —	$ (16,596)	$ —
Income from continuing operations before income taxes	$ 20,945	$ 3,160	$ 26,442	$ (23,078)	$ 27,469
Provision (benefit) for income taxes	(1,007)	625	5,833	—	5,451
Income from continuing operations	$ 21,952	$ 2,535	$ 20,609	$ (23,078)	$ 22,018
Income (loss) from discontinued operations, net of taxes	—	—	7	—	7
Net income before attribution of noncontrolling interests	$ 21,952	$ 2,535	$ 20,616	$ (23,078)	$ 22,025
Noncontrolling interests	—	—	73	—	73
Net income	$ 21,952	$ 2,535	$ 20,543	$ (23,078)	$ 21,952
Comprehensive income					
Add: Other comprehensive income (loss)	$ (6,707)	$ (76)	$ (450)	$ 526	$ (6,707)
Total Citigroup comprehensive income	$ 15,245	$ 2,459	$ 20,093	$ (22,552)	$ 15,245
Add: Other comprehensive income attributable to noncontrolling interests	$ —	$ —	$ (99)	$ —	$ (99)
Add: Net income attributable to noncontrolling interests	—	—	73	—	73
Total comprehensive income	$ 15,245	$ 2,459	$ 20,067	$ (22,552)	$ 15,219

Condensed Consolidating Statements of Income and Comprehensive Income

In millions of dollars	Year ended December 31, 2020 Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Revenues					
Dividends from subsidiaries	$ 2,355	$ —	$ —	$ (2,355)	$ —
Interest revenue	—	5,364	52,725	—	58,089
Interest revenue—intercompany	4,162	920	(5,082)	—	—
Interest expense	4,992	1,989	6,357	—	13,338
Interest expense—intercompany	502	2,170	(2,672)	—	—
Net interest income	$ (1,332)	$ 2,125	$43,958	$ —	$44,751
Commissions and fees	$ —	$ 6,216	$ 5,169	$ —	$11,385
Commissions and fees—intercompany	(36)	290	(254)	—	—
Principal transactions	(1,254)	(4,252)	19,391	—	13,885
Principal transactions—intercompany	693	9,064	(9,757)	—	—
Other revenue	(127)	706	4,901	—	5,480
Other revenue—intercompany	111	23	(134)	—	—
Total non-interest revenues	$ (613)	$12,047	$19,316	$ —	$30,750
Total revenues, net of interest expense	$ 410	$14,172	$63,274	$ (2,355)	$75,501
Provisions for credit losses and for benefits and claims	$ —	$ (1)	$17,496	$ —	$17,495
Operating expenses					
Compensation and benefits	$ (5)	$ 4,941	$17,278	$ —	$22,214
Compensation and benefits—intercompany	191	—	(191)	—	—
Other operating	37	2,393	19,730	—	22,160
Other operating—intercompany	15	2,317	(2,332)	—	—
Total operating expenses	$ 238	$ 9,651	$34,485	$ —	$44,374
Equity in undistributed income of subsidiaries	$ 9,894	$ —	$ —	$ (9,894)	$ —
Income from continuing operations before income taxes	$10,066	$ 4,522	$11,293	$(12,249)	$13,632
Provision (benefit) for income taxes	(981)	1,249	2,257	—	2,525
Income from continuing operations	$11,047	$ 3,273	$ 9,036	$(12,249)	$11,107
Income (loss) from discontinued operations, net of taxes	—	—	(20)	—	(20)
Net income (loss) before attribution of noncontrolling interests	$11,047	$ 3,273	$ 9,016	$(12,249)	$11,087
Noncontrolling interests	—	—	40	—	40
Net income	$11,047	$ 3,273	$ 8,976	$(12,249)	$11,047
Comprehensive income					
Add: Other comprehensive income (loss)	$ 4,260	$ (223)	$ 4,244	$ (4,021)	$ 4,260
Total Citigroup comprehensive income	$15,307	$ 3,050	$13,220	$(16,270)	$15,307
Add: Other comprehensive income attributable to noncontrolling interests	$ —	$ —	$ 26	$ —	$ 26
Add: Net income attributable to noncontrolling interests	—	—	40	—	40
Total comprehensive income	$15,307	$ 3,050	$13,286	$(16,270)	$15,373

Condensed Consolidating Statements of Income and Comprehensive Income

	Year ended December 31, 2019				
In millions of dollars	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Revenues					
Dividends from subsidiaries	$23,347	$ —	$ —	$(23,347)	$ —
Interest revenue	—	10,661	65,849	—	76,510
Interest revenue—intercompany	5,091	1,942	(7,033)	—	—
Interest expense	4,949	7,010	16,423	—	28,382
Interest expense—intercompany	1,038	4,243	(5,281)	—	—
Net interest income	$ (896)	$ 1,350	$47,674	$ —	$48,128
Commissions and fees	$ —	$ 5,265	$ 6,481	$ —	$11,746
Commissions and fees—intercompany	(21)	354	(333)	—	—
Principal transactions	(2,537)	277	11,152	—	8,892
Principal transactions—intercompany	1,252	2,464	(3,716)	—	—
Other revenue	767	832	4,702	—	6,301
Other revenue—intercompany	(55)	102	(47)	—	—
Total non-interest revenues	$ (594)	$ 9,294	$18,239	$ —	$26,939
Total revenues, net of interest expense	$21,857	$10,644	$65,913	$(23,347)	$75,067
Provisions for credit losses and for benefits and claims	$ —	$ —	$ 8,383	$ —	$ 8,383
Operating expenses					
Compensation and benefits	$ 32	$ 4,680	$16,721	$ —	$21,433
Compensation and benefits—intercompany	134	—	(134)	—	—
Other operating	(16)	2,326	19,040	—	21,350
Other operating—intercompany	20	2,410	(2,430)	—	—
Total operating expenses	$ 170	$ 9,416	$33,197	$ —	$42,783
Equity in undistributed income of subsidiaries	$ (3,620)	$ —	$ —	$ 3,620	$ —
Income from continuing operations before income taxes	$18,067	$ 1,228	$24,333	$(19,727)	$23,901
Provision (benefit) for income taxes	(1,334)	176	5,588	—	4,430
Income from continuing operations	$19,401	$ 1,052	$18,745	$(19,727)	$19,471
Income (loss) from discontinued operations, net of taxes	—	—	(4)	—	(4)
Net income before attribution of noncontrolling interests	$19,401	$ 1,052	$18,741	$(19,727)	$19,467
Noncontrolling interests	—	—	66	—	66
Net income	$19,401	$ 1,052	$18,675	$(19,727)	$19,401
Comprehensive income					
Add: Other comprehensive income (loss)	$ 852	$ (651)	$ 1,600	$ (949)	$ 852
Total Citigroup comprehensive income	$20,253	$ 401	$20,275	$(20,676)	$20,253
Add: Other comprehensive income attributable to noncontrolling interests	$ —	$ —	$ —	$ —	$ —
Add: Net income attributable to noncontrolling interests	—	—	66	—	66
Total comprehensive income	$20,253	$ 401	$20,341	$(20,676)	$20,319

Condensed Consolidating Balance Sheet

In millions of dollars	December 31, 2021 Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Assets					
Cash and due from banks	$ —	$ 834	$ 26,681	$ —	$ 27,515
Cash and due from banks—intercompany	17	6,890	(6,907)	—	—
Deposits with banks, net of allowance	—	7,936	226,582	—	234,518
Deposits with banks—intercompany	3,500	11,005	(14,505)	—	—
Securities borrowed and purchased under resale agreements	—	269,608	57,680	—	327,288
Securities borrowed and purchased under resale agreements—intercompany	—	23,362	(23,362)	—	—
Trading account assets	248	189,841	141,856	—	331,945
Trading account assets—intercompany	1,215	1,438	(2,653)	—	—
Investments, net of allowance	1	224	512,597	—	512,822
Loans, net of unearned income	—	2,293	665,474	—	667,767
Loans, net of unearned income—intercompany	—	—	—	—	—
Allowance for credit losses on loans (ACLL)	—	—	(16,455)	—	(16,455)
Total loans, net	$ —	$ 2,293	$ 649,019	$ —	$ 651,312
Advances to subsidiaries	$142,144	$ —	$ (142,144)	$ —	$ —
Investments in subsidiaries	223,303	—	—	(223,303)	—
Other assets, net of allowance[1]	10,589	69,312	126,112	—	206,013
Other assets—intercompany	2,737	60,567	(63,304)	—	—
Total assets	$383,754	$643,310	$1,487,652	$(223,303)	$2,291,413
Liabilities and equity					
Deposits	$ —	$ —	$1,317,230	$ —	$1,317,230
Deposits—intercompany	—	—	—	—	—
Securities loaned and sold under repurchase agreements	—	171,818	19,467	—	191,285
Securities loaned and sold under repurchase agreements—intercompany	—	62,197	(62,197)	—	—
Trading account liabilities	17	122,383	39,129	—	161,529
Trading account liabilities—intercompany	777	500	(1,277)	—	—
Short-term borrowings	—	13,425	14,548	—	27,973
Short-term borrowings—intercompany	—	17,230	(17,230)	—	—
Long-term debt	164,945	61,416	28,013	—	254,374
Long-term debt—intercompany	—	76,335	(76,335)	—	—
Advances from subsidiaries	13,469	—	(13,469)	—	—
Other liabilities, including allowance	2,574	68,206	65,570	—	136,350
Other liabilities—intercompany	—	11,774	(11,774)	—	—
Stockholders' equity	201,972	38,026	185,977	(223,303)	202,672
Total liabilities and equity	$383,754	$643,310	$1,487,652	$(223,303)	$2,291,413

(1) *Other assets* for Citigroup parent company at December 31, 2021 included $30.5 billion of placements to Citibank and its branches, of which $19.5 billion had a remaining term of less than 30 days.

Condensed Consolidating Balance Sheet

In millions of dollars	December 31, 2020 Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Assets					
Cash and due from banks	$ —	$ 628	$ 25,721	$ —	$ 26,349
Cash and due from banks—intercompany	16	6,081	(6,097)	—	—
Deposits with banks, net of allowance	—	5,224	278,042	—	283,266
Deposits with banks—intercompany	4,500	8,179	(12,679)	—	—
Securities borrowed and purchased under resale agreements	—	238,718	55,994	—	294,712
Securities borrowed and purchased under resale agreements—intercompany	—	24,309	(24,309)	—	—
Trading account assets	307	222,278	152,494	—	375,079
Trading account assets—intercompany[1]	723	2,340	(3,063)	—	—
Investments, net of allowance	1	374	446,984	—	447,359
Loans, net of unearned income	—	2,524	673,359	—	675,883
Loans, net of unearned income—intercompany	—	—	—	—	—
Allowance for credit losses on loans (ACLL)	—	—	(24,956)	—	(24,956)
Total loans, net	$ —	$ 2,524	$ 648,403	$ —	$ 650,927
Advances to subsidiaries	$152,383	$ —	$ (152,383)	$ —	$ —
Investments in subsidiaries	213,267	—	—	(213,267)	—
Other assets, net of allowance[2]	12,156	60,273	109,969	—	182,398
Other assets—intercompany	2,781	51,489	(54,270)	—	—
Total assets	$386,134	$622,417	$1,464,806	$(213,267)	$2,260,090
Liabilities and equity					
Deposits	$ —	$ —	$1,280,671	$ —	$1,280,671
Deposits—intercompany	—	—	—	—	—
Securities loaned and sold under repurchase agreements	—	184,786	14,739	—	199,525
Securities loaned and sold under repurchase agreements—intercompany	—	76,590	(76,590)	—	—
Trading account liabilities	—	113,100	54,927	—	168,027
Trading account liabilities—intercompany[1]	397	1,531	(1,928)	—	—
Short-term borrowings	—	12,323	17,191	—	29,514
Short-term borrowings—intercompany	—	12,757	(12,757)	—	—
Long-term debt	170,563	47,732	53,391	—	271,686
Long-term debt—intercompany	—	67,322	(67,322)	—	—
Advances from subsidiaries	12,975	—	(12,975)	—	—
Other liabilities, including allowance	2,692	55,217	52,558	—	110,467
Other liabilities—intercompany	65	15,378	(15,443)	—	—
Stockholders' equity	199,442	35,681	178,344	(213,267)	200,200
Total liabilities and equity	$386,134	$622,417	$1,464,806	$(213,267)	$2,260,090

(1) The balances of *Trading account assets*—intercompany and *Trading account liabilities*—intercompany within CGMHI and within Other Citigroup subsidiaries and eliminations have been revised to reflect the netting of $7 billion of intercompany derivative and related collateral assets and liabilities subject to enforceable netting agreements. Because the adjustment was limited to transactions between affiliated entities, it had no impact to Citigroup consolidated.

(2) *Other assets* for Citigroup parent company at December 31, 2020 included $29.5 billion of placements to Citibank and its branches, of which $24.3 billion had a remaining term of less than 30 days.

Condensed Consolidating Statement of Cash Flows

	Year ended December 31, 2021				
In millions of dollars	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Net cash provided by operating activities of continuing operations	**$ 3,947**	**$ 43,227**	**$ 14,075**	**$—**	**$ 61,249**
Cash flows from investing activities of continuing operations					
Purchases of investments	$ —	$ —	$(359,158)	$—	$ (359,158)
Proceeds from sales of investments	—	—	126,728	—	126,728
Proceeds from maturities of investments	—	—	142,100	—	142,100
Change in loans	—	—	(1,173)	—	(1,173)
Proceeds from sales and securitizations of loans	—	—	2,918	—	2,918
Change in securities borrowed and purchased under agreements to resell	—	(29,944)	(2,632)	—	(32,576)
Changes in investments and advances—intercompany	8,260	(9,040)	780	—	—
Other investing activities	—	(2)	(3,742)	—	(3,744)
Net cash provided by (used in) investing activities of continuing operations	**$ 8,260**	**$ (38,986)**	**$ (94,179)**	**$—**	**$ (124,905)**
Cash flows from financing activities of continuing operations					
Dividends paid	$ (5,198)	$ (196)	$ 196	$—	$ (5,198)
Issuance of preferred stock	3,300	—	—	—	3,300
Redemption of preferred stock	(3,785)	—	—	—	(3,785)
Treasury stock acquired	(7,601)	—	—	—	(7,601)
Proceeds (repayments) from issuance of long-term debt, net	(86)	15,071	(19,277)	—	(4,292)
Proceeds (repayments) from issuance of long-term debt—intercompany, net	—	14,410	(14,410)	—	—
Change in deposits	—	—	44,966	—	44,966
Change in securities loaned and sold under agreements to repurchase	—	(27,241)	19,001	—	(8,240)
Change in short-term borrowings	—	1,102	(2,643)	—	(1,541)
Net change in short-term borrowings and other advances—intercompany	501	(917)	416	—	—
Capital contributions from (to) parent	—	71	(71)	—	—
Other financing activities	(337)	12	(12)	—	(337)
Net cash provided by (used in) financing activities of continuing operations	**$ (13,206)**	**$ 2,312**	**$ 28,166**	**$—**	**$ 17,272**
Effect of exchange rate changes on cash and due from banks	$ —	$ —	$ (1,198)	$—	$ (1,198)
Change in cash and due from banks and deposits with banks	**$ (999)**	**$ 6,553**	**$ (53,136)**	**$—**	**$ (47,582)**
Cash and due from banks and deposits with banks at beginning of year	4,516	20,112	284,987	—	309,615
Cash and due from banks and deposits with banks at end of year	**$ 3,517**	**$ 26,665**	**$ 231,851**	**$—**	**$ 262,033**
Cash and due from banks (including segregated cash and other deposits)	$ 17	$ 7,724	$ 19,774	$—	$ 27,515
Deposits with banks, net of allowance	3,500	18,941	212,077	—	234,518
Cash and due from banks and deposits with banks at end of year	**$ 3,517**	**$ 26,665**	**$ 231,851**	**$—**	**$ 262,033**
Supplemental disclosure of cash flow information for continuing operations					
Cash paid (received) during the year for income taxes	$ (2,406)	$ 919	$ 5,515	$—	$ 4,028
Cash paid during the year for interest	3,101	2,210	1,832	—	7,143
Non-cash investing activities					
Decrease in net loans associated with significant disposals reclassified to HFS	$ —	$ —	$ 9,945	$—	$ 9,945
Transfers to loans HFS (*Other assets*) from loans	—	—	7,414	—	7,414
Non-cash financing activities					
Decrease in long-term debt associated with significant disposals reclassified to HFS	$ —	$ —	$ 479	$—	$ 479
Decrease in deposits associated with significant disposals reclassified to HFS	—	—	8,407	—	8,407

Condensed Consolidating Statement of Cash Flows

	Year ended December 31, 2020				
In millions of dollars	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Net cash provided by (used in) operating activities of continuing operations	$ 5,002	$(26,195)	$ 572	$—	$ (20,621)
Cash flows from investing activities of continuing operations					
Purchases of investments	$ —	$ —	$(334,900)	$—	$(334,900)
Proceeds from sales of investments	—	—	146,285	—	146,285
Proceeds from maturities of investments	—	—	124,229	—	124,229
Change in loans	—	—	14,249	—	14,249
Proceeds from sales and securitizations of loans	—	—	1,495	—	1,495
Change in securities borrowed and purchased under agreements to resell	—	(46,044)	2,654	—	(43,390)
Changes in investments and advances—intercompany	(5,584)	(6,917)	12,501	—	—
Other investing activities	—	(54)	(3,226)	—	(3,280)
Net cash used in investing activities of continuing operations	$ (5,584)	$(53,015)	$ (36,713)	$—	$ (95,312)
Cash flows from financing activities of continuing operations					
Dividends paid	$ (5,352)	$ (172)	$ 172	$—	$ (5,352)
Issuance of preferred stock	2,995	—	—	—	2,995
Redemption of preferred stock	(1,500)	—	—	—	(1,500)
Treasury stock acquired	(2,925)	—	—	—	(2,925)
Proceeds from issuance of long-term debt, net	16,798	6,349	(10,091)	—	13,056
Proceeds (repayments) from issuance of long-term debt—intercompany, net	—	3,960	(3,960)	—	—
Change in deposits	—	—	210,081	—	210,081
Change in securities loaned and sold under agreements to repurchase	—	79,322	(46,136)	—	33,186
Change in short-term borrowings	—	1,228	(16,763)	—	(15,535)
Net change in short-term borrowings and other advances—intercompany	(7,528)	(7,806)	15,334	—	—
Other financing activities	(411)	—	—	—	(411)
Net cash provided by financing activities of continuing operations	$ 2,077	$ 82,881	$ 148,637	$—	$ 233,595
Effect of exchange rate changes on cash and due from banks	$ —	$ —	$ (1,966)	$—	$ (1,966)
Change in cash and due from banks and deposits with banks	$ 1,495	$ 3,671	$ 110,530	$—	$ 115,696
Cash and due from banks and deposits with banks at beginning of year	3,021	16,441	174,457	—	193,919
Cash and due from banks and deposits with banks at end of year	$ 4,516	$ 20,112	$ 284,987	$—	$ 309,615
Cash and due from banks (including segregated cash and other deposits)	$ 16	$ 6,709	$ 19,624	$—	$ 26,349
Deposits with banks, net of allowance	4,500	13,403	265,363	—	283,266
Cash and due from banks and deposits with banks at end of year	$ 4,516	$ 20,112	$ 284,987	$—	$ 309,615
Supplemental disclosure of cash flow information for continuing operations					
Cash paid (received) during the year for income taxes	$ (1,883)	$ 1,138	$ 5,542	$—	$ 4,797
Cash paid during the year for interest	2,681	4,516	4,897	—	12,094
Non-cash investing activities					
Transfers to loans HFS (*Other assets*) from loans	$ —	$ —	$ 2,614	$—	$ 2,614

Condensed Consolidating Statements of Cash Flows

	Year ended December 31, 2019				
In millions of dollars	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Net cash provided by (used in) operating activities of continuing operations	$ 25,011	$(35,396)	$ (2,452)	$—	$ (12,837)
Cash flows from investing activities of continuing operations					
Purchases of investments	$ —	$ —	$(274,491)	$—	$(274,491)
Proceeds from sales of investments	5	—	137,168	—	137,173
Proceeds from maturities of investments	—	—	119,051	—	119,051
Change in loans	—	—	(22,466)	—	(22,466)
Proceeds from sales and securitizations of loans	—	—	2,878	—	2,878
Change in securities borrowed and purchased under agreements to resell	—	15,811	3,551	—	19,362
Changes in investments and advances—intercompany	(1,847)	(870)	2,717	—	—
Other investing activities	—	(64)	(4,817)	—	(4,881)
Net cash provided by (used in) investing activities of continuing operations	$ (1,842)	$ 14,877	$ (36,409)	$—	$ (23,374)
Cash flows from financing activities of continuing operations					
Dividends paid	$ (5,447)	$ —	$ —	$—	$ (5,447)
Issuance of preferred stock	1,496	—	—	—	1,496
Redemption of preferred stock	(1,980)	—	—	—	(1,980)
Treasury stock acquired	(17,571)	—	—	—	(17,571)
Proceeds (repayments) from issuance of long-term debt, net	1,666	10,389	(3,950)	—	8,105
Proceeds (repayments) from issuance of long-term debt—intercompany, net	—	(7,177)	7,177	—	—
Change in deposits	—	—	57,420	—	57,420
Change in securities loaned and sold under agreements to repurchase	—	5,115	(16,544)	—	(11,429)
Change in short-term borrowings	—	7,440	5,263	—	12,703
Net change in short-term borrowings and other advances—intercompany	(968)	5,843	(4,875)	—	—
Capital contributions from (to) parent	—	(74)	74	—	—
Other financing activities	(364)	(253)	253	—	(364)
Net cash provided by (used in) financing activities of continuing operations	$(23,168)	$ 21,283	$ 44,818	$—	$ 42,933
Effect of exchange rate changes on cash and due from banks	$ —	$ —	$ (908)	$—	$ (908)
Change in cash and due from banks and deposits with banks	$ 1	$ 764	$ 5,049	$—	$ 5,814
Cash and due from banks and deposits with banks at beginning of year	3,020	15,677	169,408	—	188,105
Cash and due from banks and deposits with banks at end of year	$ 3,021	$ 16,441	$ 174,457	$—	$ 193,919
Cash and due from banks (including segregated cash and other deposits)	$ 21	$ 5,681	$ 18,265	$—	$ 23,967
Deposits with banks, net of allowance	3,000	10,760	156,192	—	169,952
Cash and due from banks and deposits with banks at end of year	$ 3,021	$ 16,441	$ 174,457	$—	$ 193,919
Supplemental disclosure of cash flow information for continuing operations					
Cash paid (received) during the year for income taxes	$ (393)	$ 418	$ 4,863	$—	$ $4,888
Cash paid during the year for interest	3,820	12,664	11,417	—	27,901
Non-cash investing activities					
Transfers to loans HFS (*Other assets*) from loans	$ —	$ —	$ 5,500	$—	$ 5,500

29. SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

In millions of dollars, except per share amounts	2021 Fourth	2021 Third	2021 Second	2021 First	2020 Fourth	2020 Third	2020 Second	2020 First
Revenues, net of interest expense[1][2]	**$17,017**	**$17,447**	**$17,753**	**$19,667**	$16,832	$17,677	$20,036	$20,956
Operating expenses[1][3]	**13,532**	**11,777**	**11,471**	**11,413**	11,437	11,339	10,730	10,868
Provisions (release) for credit losses and for benefits and claims	**(465)**	**(192)**	**(1,066)**	**(2,055)**	(46)	2,384	8,197	6,960
Income from continuing operations before income taxes	**$ 3,950**	**$ 5,862**	**$ 7,348**	**$10,309**	$ 5,441	$ 3,954	$ 1,109	$ 3,128
Income taxes[4]	**771**	**1,193**	**1,155**	**2,332**	1,116	777	52	580
Income from continuing operations	**$ 3,179**	**$ 4,669**	**$ 6,193**	**$ 7,977**	$ 4,325	$ 3,177	$ 1,057	$ 2,548
Income (loss) from discontinued operations, net of taxes	**—**	**(1)**	**10**	**(2)**	6	(7)	(1)	(18)
Net income before attribution of noncontrolling interests	**$ 3,179**	**$ 4,668**	**$ 6,203**	**$ 7,975**	$ 4,331	$ 3,170	$ 1,056	$ 2,530
Noncontrolling interests	**6**	**24**	**10**	**33**	22	24	—	(6)
Citigroup's net income	**$ 3,173**	**$ 4,644**	**$ 6,193**	**$ 7,942**	$ 4,309	$ 3,146	$ 1,056	$ 2,536
Earnings per share[5]								
Basic								
Income from continuing operations	**$ 1.47**	**$ 2.17**	**$ 2.86**	**$ 3.64**	$ 1.93	$ 1.37	$ 0.38	$ 1.07
Net income	**1.47**	**2.17**	**2.87**	**3.64**	1.93	1.37	0.38	1.06
Diluted								
Income from continuing operations	**1.46**	**2.15**	**2.84**	**3.62**	1.92	1.36	0.38	1.06
Net income	**1.46**	**2.15**	**2.85**	**3.62**	1.92	1.36	0.38	1.06

This Note to the Consolidated Financial Statements is unaudited due to the Company's individual quarterly results not being subject to an audit.

(1) During the fourth quarter of 2021, Citi reclassified deposit insurance expenses from *Interest expense* to *Other operating expenses* for all periods presented. Amounts reclassified for each quarter were $295 million for 4Q21, $293 million for 3Q21, $279 million for 2Q21, $340 million for 1Q21, $333 million for 4Q20, $375 million for 3Q20, $270 million for 2Q20 and $225 million for 1Q20. For additional information, see Note 1 to the Consolidated Financial Statements.

(2) The third quarter of 2021 includes an approximate $700 million loss on sale (approximately $600 million after-tax) related to Citi's agreement to sell its consumer banking business in Australia.

(3) The fourth quarter of 2021 includes an approximate $1.052 billion charge (approximately $792 million after-tax) in connection with the voluntary early retirement plan (VERP) related to the announced wind-down of Citi's consumer banking business in Korea.

(4) The second quarter of 2021 includes an approximate $450 million benefit in tax rate from a reduction in Citi's valuation allowance related to its deferred tax assets (DTAs).

(5) Certain securities were excluded from the second quarter of 2020 diluted EPS calculation because they were anti-dilutive. Year-to-date EPS will not equal the sum of the individual quarters because the year-to-date EPS calculation is a separate calculation, which uses an averaging of shares across each quarter. In addition, due to averaging of shares, quarterly earnings per share may not sum to the totals reported for the full year.

End of Consolidated Financial Statements and Notes to Consolidated Financial Statements

FINANCIAL DATA SUPPLEMENT

RATIOS

	2021	2020	2019
Return on average assets	**0.94%**	0.50%	0.98%
Return on average common stockholders' equity[1]	**11.5**	5.7	10.3
Return on average total stockholders' equity[2]	**10.9**	5.7	9.9
Total average equity to average assets[3]	**8.6**	8.7	9.9
Dividend payout ratio[4]	**20**	43	24

(1) Based on Citigroup's net income less preferred stock dividends as a percentage of average common stockholders' equity.
(2) Based on Citigroup's net income as a percentage of average total Citigroup stockholders' equity.
(3) Based on average Citigroup stockholders' equity as a percentage of average assets.
(4) Dividends declared per common share as a percentage of net income per diluted share.

AVERAGE DEPOSIT LIABILITIES IN OFFICES OUTSIDE THE U.S.[1]

	2021		2020		2019	
In millions of dollars at year end, except ratios	**Average interest rate**	**Average balance**	Average interest rate	Average balance	Average interest rate	Average balance
Banks	**0.16%**	**$ 42,222**	0.10%	$130,970	0.59%	$ 52,699
Other demand deposits	**0.15**	**412,815**	0.33	311,342	1.08	293,209
Other time and savings deposits[2]	**0.55**	**200,194**	0.94	210,896	1.28	223,450
Total	**0.10%**	**$655,231**	0.48%	$653,208	1.11%	$569,358

(1) Interest rates and amounts include the effects of risk management activities and also reflect the impact of the local interest rates prevailing in certain countries.
(2) Primarily consists of certificates of deposit and other time deposits in denominations of $100,000 or more.

UNINSURED DEPOSITS

The table below shows the estimated amount of uninsured time deposits by maturity profile:

In millions of dollars at December 31, 2021	**Under 3 months or less**	**Over 3 months but within 6 months**	**Over 6 months but within 12 months**	**Over 12 months**	**Total**
In U.S. offices[1]					
Time deposits in excess of FDIC insurance limits[2]	**$ 5,779**	**$2,653**	**$1,861**	**$2,950**	**$13,243**
In offices outside the U.S.[1]					
Time deposits in excess of foreign jurisdiction insurance limits[3]	**57,248**	**6,471**	**4,080**	**1,095**	**68,894**
Total uninsured time deposits[4]	**$63,027**	**$9,124**	**$5,941**	**$4,045**	**$82,137**

(1) The classification between offices in the U.S. and outside the U.S. is based on the domicile of the booking unit, rather than the domicile of the depositor.
(2) The standard insurance amount is $250,000 and $500,000 per depositor, per insured bank, for single and joint account ownership categories, respectively.
(3) The standard insurance amount for time deposits outside the U.S. is based on the insurance limits approved by the regulator in the respective foreign jurisdiction. For certain depositors outside the U.S., Citi has not considered the account ownership category and other time deposit accounts that the depositors may own when allocating the insurance limits used to determine the uninsured time deposit balances. As a result, the uninsured time deposit balances disclosed above may differ from actual uninsured balances.
(4) The maturity term is based on the remaining term of the time deposit rather than the original maturity date.

Total uninsured deposits as of December 31, 2021 were $1.082 trillion (see notes 1, 2 and 3 to the table above).

SUPERVISION, REGULATION AND OTHER

SUPERVISION AND REGULATION

Citi is subject to regulation under U.S. federal and state laws, as well as applicable laws in the other jurisdictions in which it does business.

General

Citigroup is a registered bank holding company and financial holding company and is regulated and supervised by the Federal Reserve Board (FRB). Citigroup's nationally chartered subsidiary banks, including Citibank, are regulated and supervised by the Office of the Comptroller of the Currency (OCC). The Federal Deposit Insurance Corporation (FDIC) also has examination authority for banking subsidiaries whose deposits it insures. Overseas branches of Citibank are regulated and supervised by the FRB and OCC and overseas subsidiary banks by the FRB. These overseas branches and subsidiary banks are also regulated and supervised by regulatory authorities in the host countries. In addition, the Consumer Financial Protection Bureau regulates consumer financial products and services. Citi is also subject to laws and regulations concerning the collection, use, sharing and disposition of certain customer, employee and other personal and confidential information, including those imposed by the Gramm-Leach-Bliley Act, the Fair Credit Reporting Act and the EU General Data Protection Regulation. For more information on U.S. and foreign regulation affecting or potentially affecting Citi, see "Managing Global Risk—Capital Resources" and "—Liquidity Risk" and "Risk Factors" above.

Other Bank and Bank Holding Company Regulation

Citi, including its banking subsidiaries, is subject to regulatory limitations, including requirements as to liquidity, risk-based capital and leverage (see "Capital Resources" above and Note 18 to the Consolidated Financial Statements), restrictions on the types and amounts of loans that may be made and the interest that may be charged, and limitations on investments that can be made and services that can be offered. The FRB may also expect Citi to commit resources to its subsidiary banks in certain circumstances. Citi is also subject to anti-money laundering and financial transparency laws, including standards for verifying client identification at account opening and obligations to monitor client transactions and report suspicious activities.

Securities and Commodities Regulation

Citi conducts securities underwriting, brokerage and dealing activities in the U.S. through Citigroup Global Markets Inc. (CGMI), its primary broker-dealer, and other broker-dealer subsidiaries, which are subject to regulations of the U.S. Securities and Exchange Commission (SEC), the Financial Industry Regulatory Authority and certain exchanges. Citi conducts similar securities activities outside the U.S., subject to local requirements, through various subsidiaries and affiliates, principally Citigroup Global Markets Limited in London (CGML), which is regulated principally by the U.K. Financial Conduct Authority and Prudential Regulation Authority (PRA), and Citigroup Global Markets Japan Inc. in Tokyo, which is regulated principally by the Financial Services Agency of Japan.

Citi also has subsidiaries that are members of futures exchanges and derivatives clearinghouses. In the U.S., CGMI is a member of the principal U.S. futures exchanges and clearinghouses, and Citi has subsidiaries that are registered as futures commission merchants and commodity pool operators with the Commodity Futures Trading Commission (CFTC). Citibank, CGMI, Citigroup Energy Inc., Citigroup Global Markets Europe AG (CGME) and CGML are also registered as swap dealers with the CFTC (for additional information, see below). CGMI is also subject to SEC and CFTC rules that specify uniform minimum net capital requirements. Compliance with these rules could limit those operations of CGMI that require the intensive use of capital and also limits the ability of broker-dealers to transfer large amounts of capital to parent companies and other affiliates. See "Capital Resources" and Note 18 to the Consolidated Financial Statements for a further discussion of capital considerations of Citi's non-banking subsidiaries.

Recent Rules Regarding Swap Dealers/Security-Based Swap Dealers

On July 22, 2020, the CFTC adopted final rules establishing capital and financial reporting requirements for swap dealers that took effect in October 2021.

In addition, the SEC has adopted rules governing the registration and regulation of security-based swap dealers. The regulations include requirements related to (i) capital, margin and segregation, (ii) record-keeping, reporting and notification and (iii) risk management practices for uncleared security based swaps and the cross-border application of certain security-based swap requirements. These requirements also took effect in November 2021. Citibank, CGML and CGME registered with the SEC as securities-based swap dealers.

Transactions with Affiliates

Transactions between Citi's U.S. subsidiary depository institutions and their non-bank affiliates are regulated by the FRB, and are generally required to be on arm's-length terms. See "Managing Global Risk—Liquidity Risk" above.

COMPETITION

The financial services industry is highly competitive. Citi's competitors include a variety of financial services and advisory companies, as well as certain non-financial services firms. Citi competes for clients and capital (including deposits and funding in the short- and long-term debt markets) with some of these competitors globally and with others on a regional or product basis. Citi's competitive position depends on many factors, including, among others, the value of Citi's brand name, reputation, the types of clients and geographies served; the quality, range, performance, innovation and pricing of products and services; the effectiveness of and access to distribution channels, maintenance of partner relationships, emerging technologies and technology advances, customer service and convenience; the effectiveness of transaction execution, interest rates, lending limits and risk appetite; regulatory constraints and compliance; and changes in the macroeconomic business environment or societal norms. Citi's ability to compete effectively also depends upon its ability to attract new colleagues and retain and motivate existing colleagues, while managing compensation and other costs. For additional information on competitive factors and uncertainties impacting Citi's businesses, see "Risk Factors—Strategic Risks" above.

DISCLOSURE PURSUANT TO SECTION 219 OF THE IRAN THREAT REDUCTION AND SYRIA HUMAN RIGHTS ACT

Pursuant to Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012 (Section 219), which added Section 13(r) to the Securities Exchange Act of 1934, as amended, Citi is required to disclose in its annual or quarterly reports, as applicable, whether it or any of its affiliates knowingly engaged in certain activities, transactions or dealings relating to Iran or with certain individuals or entities that are the subject of sanctions under U.S. law. Disclosure is generally required even where the activities, transactions or dealings were conducted in compliance with applicable law. Citi, in its related quarterly reports on Form 10-Q, did not identify any reportable activities for the first and third quarters of 2021. Citi identified and reported certain activities pursuant to Section 219 for the second quarter of 2021.

During the fourth quarter of 2021, Citigroup reported one transaction pursuant to Section 219. In October 2021, Citigroup's Russian subsidiary (Citi Russia), acting as the beneficiary bank, released a payment that had been initiated by a Russian entity from its account with MB Bank, an entity designated pursuant to Executive Order 13224, for the benefit of Citi Russia's customer. The total value of the payment was RUB 16,533.12 (approximately USD 224.70), and the transaction was authorized pursuant to a specific license issued by the Office of Foreign Assets Control on October 1, 2021, which expired on December 31, 2021. Citi did not realize any fees for the processing of the payment.

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

Unregistered Sales of Equity Securities

None.

Equity Security Repurchases

As previously announced, Citigroup voluntarily suspended common share repurchases during the fourth quarter of 2021, in anticipation of the adverse regulatory capital impact resulting from adoption of the Standardized Approach for Counterparty Credit Risk (SA-CCR) on January 1, 2022. For additional information on the adoption of SA-CCR, see "Capital Resources—Adoption of the Standardized Approach for Counterparty Credit Risk" above. Accordingly, Citi did not have any share repurchases in the fourth quarter of 2021, other than repurchases relating to issuances of common stock related to employee stock ownership plans. During the quarter, pursuant to Citigroup's Board of Directors' authorization, Citi repurchased 1,855 shares (at an average price of $66.37) of common stock, added to treasury stock, related to activity on employee stock programs where shares were withheld to satisfy the employee tax requirements. Citi resumed common share repurchases in January 2022.

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

Dividends

Citi paid common dividends of $0.51 per share for the fourth quarter of 2021 and the first quarter of 2022. As previously announced, Citi intends to maintain its planned capital actions, which include a quarterly common dividend of at least $0.51 per share, subject to financial and macroeconomic conditions as well as Board of Directors' approval.

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

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.

During 2021, Citi distributed $1,040 million in dividends on its outstanding preferred stock. On January 12, 2022, Citi declared preferred dividends of approximately $277 million for the first quarter of 2022.

As of February 25, 2022, Citi estimates it will distribute preferred dividends of approximately $238 million, $277 million and $238 million in the second, third and fourth quarters of 2022, respectively, subject to such dividends being declared by the Citi Board of Directors.

For information on the ability of Citigroup's subsidiary depository institutions to pay dividends, see Note 18 to the Consolidated Financial Statements.

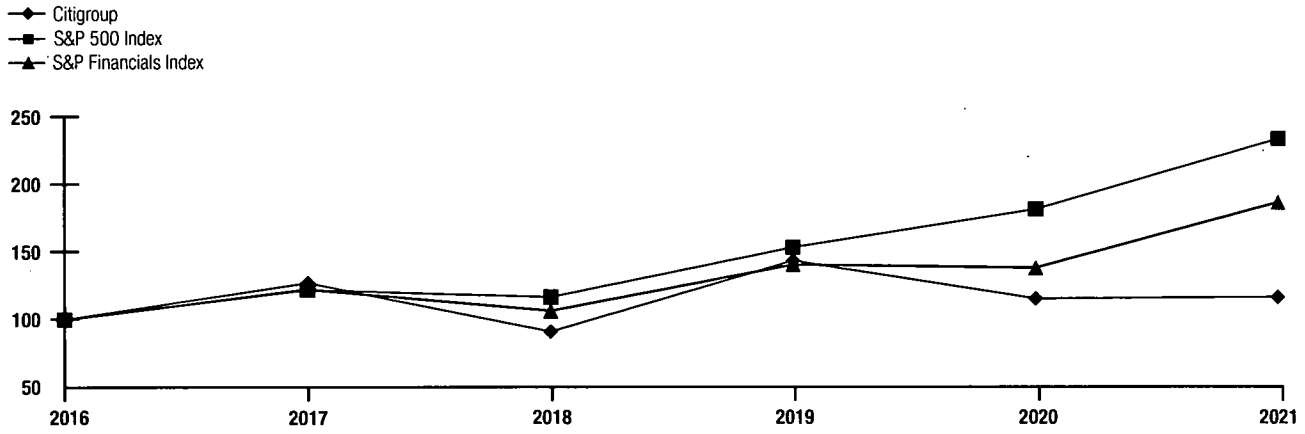
PERFORMANCE GRAPH

Comparison of Five-Year Cumulative Total Return

The following graph and table compare the cumulative total return on Citi's common stock with the cumulative total return of the S&P 500 Index and the S&P Financials Index over the five-year period through December 31, 2021. The graph and table assume that $100 was invested on December 31, 2016 in Citi's common stock, the S&P 500 Index and the S&P Financials Index, and that all dividends were reinvested.

Comparison of Five-Year Cumulative Total Return

For the years ended



DATE	Citigroup	S&P 500 Index	S&P Financials Index
31-Dec-2016	100.0	100.0	100.0
31-Dec-2017	127.0	121.8	122.2
31-Dec-2018	90.9	116.5	106.3
31-Dec-2019	143.3	153.2	140.4
31-Dec-2020	115.2	181.4	138.0
31-Dec-2021	116.3	233.4	186.4

Note: Citi's common stock is listed on the NYSE under the ticker symbol "C" and held by 61,355 common stockholders of record as of January 31, 2022.

CORPORATE INFORMATION

EXECUTIVE OFFICERS

Citigroup's executive officers as of February 25, 2022 are:

Name	Age	Position and office held
Peter Babej	58	CEO, Asia Pacific
Jane Fraser	54	Chief Executive Officer, Citigroup Inc.
Sunil Garg	56	Chief Executive Officer, Citibank, N.A.
David Livingstone	58	CEO, Europe, Middle East and Africa
Mark A. L. Mason	52	Chief Financial Officer
Brent McIntosh	48	General Counsel and Corporate Secretary
Mary McNiff	51	Chief Compliance Officer
Johnbull Okpara	50	Controller and Chief Accounting Officer
Karen Peetz	66	Chief Administrative Officer
Anand Selvakesari	54	CEO, Personal Banking and Wealth Management
Edward Skyler	48	Head of Global Public Affairs
Ernesto Torres Cantú	57	CEO, Latin America
Zdenek Turek	57	Chief Risk Officer
Sara Wechter	41	Head of Human Resources
Mike Whitaker	58	Head of Enterprise Operations and Technology
Paco Ybarra	60	CEO, Institutional Clients Group

The following executive officers have not held their current executive officer positions with Citigroup for at least five years:

- Mr. Babej joined Citi in 2010 and assumed his current position in October 2019. Previously, he served as *ICG*'s Global Head of the Financial Institutions Group (FIG) from January 2017 to October 2019 and Global Co-Head of FIG from 2010 to January 2017. Prior to joining Citi, Mr. Babej served as Co-Head, Financial Institutions—Americas at Deutsche Bank, among other roles;
- Ms. Fraser joined Citi in 2004 and assumed her current position on February 26, 2021. Previously, she served as CEO of *GCB* from October 2019 to December 2020. Before that, she served as CEO of Citi *Latin America* from June 2015 to October 2019. She held a number of other roles across the organization, including CEO of U.S. Consumer and Commercial Banking and CitiMortgage, CEO of Citi's Global Private Bank and Global Head of Strategy and M&A;
- Mr. Garg joined Citi in May 1988 and assumed his current position in February 2021. Previously, he was global CEO of the Commercial Bank beginning in 2011. Prior to that, Mr. Garg led the U.S. Commercial Banking business from 2008 until 2011. In addition, he held various other roles at Citi in Operations and Technology, Treasury and Trade Solutions, Corporate and Investment Banking and Commercial Banking.
- Mr. Livingstone joined Citi in 2016 and assumed his current position in March 2019. Previously, he served as Citi Country Officer for Australia and New Zealand since June 2016. Prior to joining Citi, he had a nine-year career at Credit Suisse, where he was Vice Chairman of the Investment Banking and Capital Markets Division for the *EMEA* region, Head of M&A and CEO of Credit Suisse Australia;
- Mr. Mason joined Citi in 2001 and assumed his current position in February 2019. Previously, he served as CFO of *ICG* since September 2014. He held a number of other senior operational, strategic and financial executive roles across the organization, including CEO of Citi Private Bank, CEO of Citi Holdings and CFO and Head of Strategy and M&A for Citi's Global Wealth Management Division;
- Mr. McIntosh joined Citi in his current position in October 2021. Previously, he served as Under Secretary for International Affairs at the U.S. Treasury from 2019 to 2021. From 2017 to 2019, Mr. McIntosh served as U.S. Treasury's General Counsel. Prior to that, he was a partner in the law firm of Sullivan & Cromwell and served in the U.S. White House from 2006 until 2009;
- Ms. McNiff joined Citi in 2012 and assumed her current position in June 2020. Previously, she served as CEO of Citibank, N.A. from April 2019 to June 2020 and Chief Auditor of Citi from February 2017 to April 2019. Prior to taking on that role, Ms. McNiff served as Chief Administrative Officer of Latin America & Mexico and interim Chief Auditor. She also led the Global Transformation initiative within Internal Audit;
- Mr. Okpara joined Citi in his current position in November 2020. Previously he served as Managing Director, Global Head of Financial Planning and Analysis and CFO, Infrastructure Groups at Morgan Stanley since 2016. Prior to that, Mr. Okpara was Managing Vice President, Finance and Deputy Controller at Capital One Financial Corporation;
- Ms. Peetz joined Citi in her current position in June 2020. Previously, she served on the Board of Directors of Wells Fargo from 2017 to 2019. Ms. Peetz spent nearly 20 years at BNY Mellon, where she managed several business units and ultimately served as President for five years until her departure in 2016. Prior to that, she worked at JPMorgan Chase, where she held a variety of management positions during her tenure;
- Mr. Selvakesari joined Citi in 1991 and assumed his current position in January 2021. Previously, he served as Head of the U.S. Consumer Bank since October 2018 and held various other roles at Citi prior to that, including Head of Consumer Banking for Asia Pacific from 2015 to 2018, as well as a number of regional and country roles, including Head of Consumer Banking for ASEAN and India, leading the consumer banking businesses in Singapore, Malaysia, Indonesia, the Philippines, Thailand and Vietnam, as well as India;
- Mr. Torres Cantú joined Citi in 1989 and assumed his current position in October 2019. Previously, he served as CEO of Citibanamex since October 2014. He served as CEO of *GCB* in Mexico from 2006 to 2011 and CEO of Crédito Familiar from 2003 to 2006. In addition, he previously held roles in Citibanamex, including Regional Director and Divisional Director;
- Mr. Turek joined Citi in 1991 and assumed his current position in December 2020. Previously, he served as CRO for *EMEA* since February 2020 and held various other roles at Citi, including CEO of Citibank Europe as well as leading significant franchises across Citi, including in Russia, South Africa and Hungary;
- Ms. Wechter joined Citi in 2004 and assumed her current position in July 2018. Previously, she served as Citi's Head of Talent and Diversity as well as Chief of Staff to Citi CEO Michael Corbat. She served as Chief of Staff to both Michael O'Neill and Richard Parsons during their terms as

Chairman of Citigroup's Board of Directors. In addition, she held roles in Citi's *ICG*, including Corporate M&A and Strategy and Investment Banking;

- Mr. Whitaker joined Citi in 2009 and assumed his current position in November 2018. Previously, he served as Head of Operations & Technology for *ICG* since September 2014 and held various other roles at Citi, including Head of Securities & Banking Operations & Technology, Head of *ICG* Technology and Regional Chief Information Officer; and
- Mr. Ybarra joined Citi in 1987 and assumed his current position in May 2019. Previously, he served as *ICG*'s Global Head of Markets and Securities Services since November 2013. In addition, he has held a number of other roles across *ICG*, including Deputy Head of *ICG*, Global Head of Markets and Co-Head of Global Fixed Income.

Code of Conduct, Code of Ethics

Citi has a Code of Conduct that maintains its commitment to the highest standards of conduct. The Code of Conduct is supplemented by a Code of Ethics for Financial Professionals (including accounting, controllers, financial reporting operations, financial planning and analysis, treasury, capital planning, tax, productivity and strategy, M&A, investor relations and regional/product finance professionals and administrative staff) that applies worldwide. The Code of Ethics for Financial Professionals applies to Citi's principal executive officer, principal financial officer and principal accounting officer. Amendments and waivers, if any, to the Code of Ethics for Financial Professionals will be disclosed on Citi's website, www.citigroup.com.

Both the Code of Conduct and the Code of Ethics for Financial Professionals can be found on the Citi website by clicking on "About Us," and then "Corporate Governance." Citi's Corporate Governance Guidelines can also be found there, as well as the charters for the Audit Committee, the Ethics, Conduct and Culture Committee, the Nomination, Governance and Public Affairs Committee, the Personnel and Compensation Committee and the Risk Management Committee of Citigroup's Board of Directors. These materials are also available by writing to Citigroup Inc., Corporate Governance, 388 Greenwich Street, 17th Floor, New York, New York 10013.

CITIGROUP BOARD OF DIRECTORS

Ellen M. Costello
Former President and CEO
BMO Financial Corporation and
Former U.S. Country Head
BMO Financial Group

Grace E. Dailey
Former Senior Deputy Comptroller
for Bank Supervision Policy and Chief
National Bank Examiner
Office of the Comptroller of the
Currency (OCC)

Barbara Desoer
Chair
Citibank, N.A.

John C. Dugan
Chair
Citigroup Inc.

Jane Fraser
Chief Executive Officer
Citigroup Inc.

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Atrevida Partners, LLC

Peter Blair Henry
Dean Emeritus and W. R.
Berkley Professor of Economics
and Finance
New York University
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Ampere Computing

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Operating Partner
General Atlantic LLC

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State of New York

James S. Turley
Former Chairman and CEO
Ernst & Young

Deborah C. Wright
Former Chairman
Carver Bancorp, Inc.

Ernesto Zedillo Ponce de Leon
Director, Center for the
Study of Globalization and
Professor in the Field
of International
Economics and Politics
Yale University

Signatures

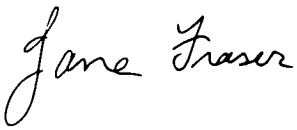
Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on the 25th day of February, 2022.

Citigroup Inc.
(Registrant)

Mark A. L. Mason
Chief Financial Officer

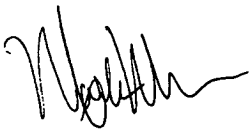
Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on the 25th day of February, 2022.

Citigroup's Principal Executive Officer and a Director:



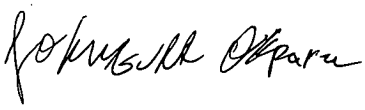
Jane Fraser

Citigroup's Principal Financial Officer:



Mark A. L. Mason

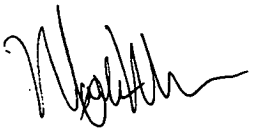
Citigroup's Principal Accounting Officer:



Johnbull E. Okpara

The Directors of Citigroup listed below executed a power of attorney appointing Mark A. L. Mason their attorney-in-fact, empowering him to sign this report on their behalf.

Ellen M. Costello
Grace E. Dailey
Barbara Desoer
John C. Dugan
Duncan P. Hennes
Peter Blair Henry
S. Leslie Ireland
Lew W. (Jay) Jacobs, IV
Renée J. James
Gary M. Reiner
Diana L. Taylor
James S. Turley
Deborah C. Wright
Ernesto Zedillo Ponce de Leon



Mark A. L. Mason

GLOSSARY OF TERMS AND ACRONYMS

The following is a list of terms and acronyms that are used in this Annual Report on Form 10-K and other Citigroup presentations.

* Denotes a Citi metric

2021 Annual Report on Form 10-K: Annual report on Form 10-K for year ended December 31, 2021, filed with the SEC.

90+ days past due delinquency rate*: Represents consumer loans that are past due by 90 or more days, divided by that period's total EOP loans.

ABS: Asset-backed securities

ACL: Allowance for credit losses

ACLL: Allowance for credit losses on loans

ACLUC: Allowance for credit losses on unfunded lending commitments

AFS: Available-for-sale

ALCO: Asset Liability Committee

Amortized cost: Amount at which a financing receivable or investment is originated or acquired, adjusted for accretion or amortization of premium, discount, and net deferred fees or costs, collection of cash, charge-offs, foreign exchange, and fair value hedge accounting adjustments. For AFS securities, amortized cost is also reduced by any impairment losses recognized in earnings. Amortized cost is not reduced by the allowance for credit losses, except where explicitly presented net.

AOCI: Accumulated other comprehensive income (loss)

ARM: Adjustable rate mortgage(s)

ASC: Accounting Standards Codification under GAAP issued by the FASB.

ASU: Accounting Standards Update under GAAP issued by the FASB.

AUC: Assets under custody

AUM: Assets under management. Represent assets managed on behalf of Citi's clients.

Available liquidity resources*: Resources available at the balance sheet date to support Citi's client and business needs, including HQLA assets; additional unencumbered securities, including excess liquidity held at bank entities that is non-transferable to other entities within Citigroup; and available assets not already accounted for within Citi's HQLA to support Federal Home Loan Bank (FHLB) and Federal Reserve Bank discount window borrowing capacity.

Basel III: Liquidity and capital rules adopted by the FRB based on an internationally agreed set of measures developed by the Basel Committee on Banking Supervision.

Beneficial interests issued by consolidated VIEs: Represents the interest of third-party holders of debt, equity securities or other obligations, issued by VIEs that Citi consolidates.

Benefit obligation: Refers to the projected benefit obligation for pension plans and the accumulated postretirement benefit obligation for OPEB plans.

BHC: Bank holding company

Book value per share*: EOP common equity divided by EOP common shares outstanding.

Bps: Basis points. One basis point equals 1/100th of one percent.

Branded cards: Citi's branded-cards business with a portfolio of proprietary cards (Double Cash, Custom Cash, ThankYou and Value cards) and co-branded cards (including, among others, American Airlines and Costco).

Build: A net increase in ACL through the provision for credit losses.

Cards: Citi's credit cards' businesses or activities.

CCAR: Comprehensive Capital Analysis and Review

CCO: Chief Compliance Officer

CDS: Credit default swaps

CECL: Current Expected Credit Losses

CEO: Chief Executive Officer

CET1 Capital: Common Equity Tier 1 Capital. See "Capital Resources—Components of Citigroup Capital" above for the components of CET1.

CET1 Capital Ratio*: Common Equity Tier 1 Capital ratio. A primary regulatory capital ratio representing end-of-period CET1 Capital divided by total risk-weighted assets.

CFO: Chief Financial Officer

CFTC: Commodity Futures Trading Commission

CGMHI: Citigroup Global Markets Holdings Inc.

Citi: Citigroup Inc.

Citibank or CBNA: Citibank, N.A. (National Association)

Client assets: Represent assets under management as well as custody, brokerage, administration and deposit accounts.

CLO: Collateralized loan obligations

Collateral-dependent: A loan is considered collateral dependent when repayment of the loan is expected to be provided substantially through the operation or sale of the collateral when the borrower is experiencing financial difficulty, including when foreclosure is deemed probable based on borrower delinquency.

Commercial Cards: Provides a wide range of payment services to corporate and public sector clients worldwide through commercial card products. Services include procurement, corporate travel and entertainment, expense management services, and business-to-business payment solutions.

Consent orders: In October 2020, Citigroup and Citibank entered into consent orders with the Federal Reserve and OCC that require Citigroup and Citibank to make improvements in various aspects of enterprise-wide risk management, compliance, data quality management and governance and internal controls.

CRE: Commercial real estate

Credit card spend volume*: Dollar amount of card customers' purchases, net of returns. Also known as purchase sales.

Credit cycle: A period of time over which credit quality improves, deteriorates and then improves again (or vice versa). The duration of a credit cycle can vary from a couple of years to several years.

Credit derivatives: Financial instruments whose value is derived from the credit risk associated with the debt of a third-party issuer (the reference entity), which allow one party (the protection purchaser) to transfer that risk to another party (the protection seller). Upon the occurrence of a credit event by the reference entity, which may include, among other events, the bankruptcy or failure to pay its obligations, or certain restructurings of the debt of the reference entity, neither party has recourse to the reference entity. The protection purchaser has recourse to the protection seller for the difference between the face value of the CDS contract and the fair value at the time of settling the credit derivative contract. The determination as to whether a credit event has occurred is generally made by the relevant International Swaps and Derivatives Association (ISDA) Determinations Committee.

Critical Audit Matters: Audit matters communicated by KPMG to Citi's Audit Committee of the Board of Directors, relating to accounts or disclosures that are material to the consolidated financial statements and involved especially challenging, subjective or complex judgments. See "Report of Independent Registered Public Accounting Firm" above.

Criticized: Criticized loans, lending-related commitments and derivative receivables that are classified as special mention, substandard and doubtful categories for regulatory purposes.

CRO: Chief Risk Officer

CVA: Credit valuation adjustment

Dividend payout ratio*: Represents dividends declared per common share as a percentage of net income per diluted share.

Dodd-Frank Act: Wall Street Reform and Consumer Protection Act

DPD: Days past due

DVA: Debit valuation adjustment

EC: European Commission

Efficiency ratio*: A ratio signifying how much of a dollar in expenses (as a percentage) it takes to generate one dollar in revenue. Represents total operating expenses divided by total revenues, net.

EMEA: Europe, Middle East and Africa

EOP: End-of-period

EPS*: Earnings per share

ERISA: Employee Retirement Income Security Act of 1974

ETR: Effective tax rate

EU: European Union

Fannie Mae: Federal National Mortgage Association

FASB: Financial Accounting Standards Board

FDIC: Federal Deposit Insurance Corporation

Federal Reserve: The Board of the Governors of the Federal Reserve System

FFIEC: Federal Financial Institutions Examination Council

FHA: Federal Housing Administration

FHLB: Federal Home Loan Bank

FICO: Fair Issac Corporation

FICO score: A measure of consumer credit risk provided by credit bureaus, typically produced from statistical models by Fair Isaac Corporation utilizing data collected by the credit bureaus.

FINRA: Financial Industry Regulatory Authority

Firm: Citigroup Inc.

FRBNY: Federal Reserve Bank of New York

Freddie Mac: Federal Home Loan Mortgage Corporation

Free standing derivatives: A derivative contract entered into either separate and apart from any of the Company's other financial instruments or equity transactions, or in conjunction with some other transaction and legally detachable and separately exercisable.

FTCs: Foreign tax credit carry-forwards

FTE: Full time employee

FVA: Funding valuation adjustment

FX: Foreign exchange

FX translation: The impact of converting non-U.S.-dollar currencies into U.S. dollars.

G7: Group of Seven nations. Countries in the G7 are Canada, France, Germany, Italy, Japan, the U.K. and the U.S.

GAAP or U.S. GAAP: Generally accepted accounting principles in the United States of America.

GCB: Global Consumer Banking

Ginnie Mae: Government National Mortgage Association

GSIB: Global systemically important banks

HELOC: Home equity line of credit

HFI loans: Loans that are held-for-investment (i.e., excludes loans held-for-sale).

HFS: Held-for-sale

HQLA: High-quality liquid assets. Consist of cash and certain high-quality liquid securities as defined in the LCR rule.

HTM: Held-to-maturity

IBOR: Interbank Offered Rate

ICG: Institutional Clients Group

ICRM: Independent Compliance Risk Management

IPO: Initial public offering

ISDA: International Swaps and Derivatives Association

KM: Key financial and non-financial metric used by management when evaluating consolidated and/or individual business results.

KPMG LLP: Citi's Independent Registered Public Accounting Firm.

LATAM: Latin America, which for Citi, includes Mexico.

LCR: Liquidity coverage ratio. Represents HQLA divided by net outflows in the period.

LDA: Loss Distribution Approach

LGD: Loss given default

LIBOR: London Interbank Offered Rate

LLC: Limited Liability Company

LTD: Long-term debt

LTV: Loan-to-value. For residential real estate loans, the relationship, expressed as a percentage, between the principal amount of a loan and the appraised value of the collateral (i.e., residential real estate) securing the loan.

Master netting agreement: A single agreement with a counterparty that permits multiple transactions governed by that agreement to be terminated or accelerated and settled through a single payment in a single currency in the event of a default (e.g., bankruptcy, failure to make a required payment or securities transfer or deliver collateral or margin when due).

MBS: Mortgage-backed securities

MCA: Manager's control assessment

MD&A: Management's discussion and analysis

Measurement alternative: Measures equity securities without readily determinable fair values at cost less impairment (if any), plus or minus observable price changes from an identical or similar investment of the same issuer.

Moody's: Moody's Investor Services

MSRs: Mortgage servicing rights

N/A: Data is not applicable or available for the period presented.

NAA: Non-accrual assets. Consists of non-accrual loans and OREO.

NAL: Non-accrual loans. Loans for which interest income is not recognized on an accrual basis. Loans (other than credit card loans and certain consumer loans insured by U.S. government sponsored agencies) are placed on non-accrual status when full payment of principal and interest is not expected, regardless of delinquency status, or when principal and interest have been in default for a period of 90 days or more unless the loan is both well-secured and in the process of collection. Collateral-dependent loans are typically maintained on non-accrual status.

NAV: Net asset value

NCL(s): Net credit losses. Represents gross credit losses, less gross credit recoveries.

NCL ratio*: Represents net credit losses (recoveries) (annualized), divided by average loans for the reporting period.

Net Capital Rule: Rule 15c3-1 under the Securities Exchange Act of 1934.

Net interchange income: Includes the following components:

- Interchange revenue: Fees earned from merchants based on Citi's credit and debit card customers' sales transactions.
- Reward costs: The cost to Citi for points earned by cardholders enrolled in credit card rewards programs generally tied to sales transactions.
- Partner payments: Payments to co-brand credit card partners based on the cost of loyalty program rewards earned by cardholders on credit card transactions.

NII: Net interest income. Represents total interest revenue, less total interest expenses.

NIM*: Net interest margin expressed as a yield percentage, calculated as annualized net interest income divided by average interest-earning assets for the period.

NIR: Non-interest revenues

NM: Not meaningful

Noncontrolling interests: The portion of an investment that has been consolidated by Citi that is not 100% owned by Citi.

Non-GAAP financial measure: Management uses these financial measures because it believes they provide information to enable investors to understand the underlying operational performance and trends of Citi and its businesses.

NSFR: Net Stable Funding Ratio

O/S: Outstanding

OCC: Office of the Comptroller of the Currency

OCI: Other comprehensive income (loss)

OREO: Other real estate owned

OTTI: Other-than-temporary impairment

Over-the-counter cleared (OTC-cleared) derivatives: Derivative contracts that are negotiated and executed bilaterally, but subsequently settled via a central clearing house, such that each derivative counterparty is only exposed to the default of that clearing house.

Over-the-counter (OTC) derivatives: Derivative contracts that are negotiated, executed and settled bilaterally between two derivative counterparties, where one or both counterparties is a derivatives dealer.

Parent Company: Citigroup Inc.

Participating securities: Represents unvested share-based compensation awards containing nonforfeitable rights to dividends or dividend equivalents (collectively, "dividends"), which are included in the earnings per share calculation using the two-class method. Citi grants RSUs to certain employees under its share-based compensation programs, which entitle the recipients to receive non-forfeitable dividends during the vesting period on a basis equivalent to the dividends paid to holders of common stock. These unvested awards meet the definition of participating securities. Under the two-class method, all earnings (distributed and undistributed) are allocated to each class of common stock and participating securities, based on their respective rights to receive dividends.

PCD: Purchased credit-deteriorated assets are financial assets that as of the date of acquisition have experienced a more-than-insignificant deterioration in credit quality since origination, as determined by the Company.

PCI: Purchased credit-impaired loans represented certain loans that were acquired and deemed to be credit impaired on the acquisition date. The now superseded FASB guidance that allowed purchasers to aggregate credit-impaired loans acquired in the same fiscal quarter into one or more pools, provided that the loans had common risk characteristics (e.g., product type, LTV ratios).

PD: Probability of default

Principal transactions revenue: Primarily trading-related revenues predominantly generated by the *ICG* businesses. See Note 6 to the Consolidated Financial Statements.

Provisions: Provisions for credit losses and for benefits and claims.

PSUs: Performance share units

Real GDP: Real gross domestic product is the inflation-adjusted value of the goods and services produced by labor and property located in a country.

Regulatory VAR: Daily aggregated VAR calculated in accordance with regulatory rules.

REITs: Real estate investment trusts

Release: A net decrease in ACL through the provision for credit losses.

Reported basis: Financial statements prepared under U.S. GAAP.

Results of operations that exclude certain impacts from gains or losses on sale, or one-time charges*: Represents GAAP items, excluding the impact of gains or losses on sales, or one-time charges (e.g., the loss on sale related to the sale of Citi's consumer banking business in Australia).

Results of operations that exclude the impact of FX translation*: Represents GAAP items, excluding the impact of FX translation, whereby the prior periods' foreign currency balances are translated into U.S. dollars at the current periods' conversion rates (also known as Constant dollar).

Retail services: Citi's U.S. retail services cards business with a portfolio of co-brand and private label relationships (including, among others, The Home Depot, Sears, Best Buy and Macy's).

ROA*: Return on assets. Represents net income (annualized), divided by average assets for the period.

ROCE*: Return on Common Equity. Represents net income less preferred dividends (both annualized), divided by average common equity for the period.

ROE: Return on equity. Represents net income less preferred dividends (both annualized), divided by average Citigroup equity for the period.

RoTCE*: Return on tangible common equity. Represents net income less preferred dividends (both annualized), divided by average tangible common equity for the period.

RSU(s): Restricted stock units

RWA: Risk-weighted assets. Basel III establishes two comprehensive approaches for calculating RWA (a Standardized approach and an Advanced approach), which include capital requirements for credit risk, market risk, and in the case of Basel III Advanced, also operational risk. Key differences in the calculation of credit risk RWA between the Standardized and Advanced approaches are that for Basel III Advanced, credit risk RWA is based on risk-sensitive approaches which largely rely on the use of internal credit models and parameters, whereas for Basel III Standardized, credit risk RWA is generally based on supervisory risk-weightings, which vary primarily by counterparty type and asset class. Market risk RWA is calculated on a generally consistent basis between Basel III Standardized and Basel III Advanced Approaches.

S&P: Standard and Poor's Global Ratings

SCB: Stress Capital Buffer

SEC: The U.S. Securities and Exchange Commission

Securities financing agreements: Include resale, repurchase, securities borrowed and securities loaned agreements.

SLR: Supplementary leverage ratio. Represents Tier 1 Capital, divided by total leverage exposure.

SOFR: Secured Overnight Financing Rate

SPEs: Special purpose entities

Structured notes: Financial instruments whose cash flows are linked to the movement in one or more indexes, interest rates, foreign exchange rates, commodities prices, prepayment rates, or other market variables. The notes typically contain embedded (but not separable or detachable) derivatives. Contractual cash flows for principal, interest or both can vary in amount and timing throughout the life of the note based on non-traditional indexes or non-traditional uses of traditional interest rates or indexes.

Tangible book value per share (TBVPS)*: Represents tangible common equity divided by EOP common shares outstanding.

Tangible common equity (TCE): Represents common stockholders' equity less goodwill and identifiable intangible assets, other than MSRs.

Taxable-equivalent basis: Represents the total revenue, net of interest expense for the business, adjusted for revenue from investments that receive tax credits and the impact of tax-exempt securities. This metric presents results on a level comparable to taxable investments and securities.

Tax Reform: Tax Cuts and Jobs Act of 2017

TDR: Troubled debt restructuring. TDR is deemed to occur when the Company modifies the original terms of a loan agreement by granting a concession to a borrower that is experiencing financial difficulty. Loans with short-term and other insignificant modifications that are not considered concessions are not TDRs.

TLAC: Total loss-absorbing capacity

Total payout ratio*: Represents total common dividends declared plus common share repurchases as a percentage of net income available to common shareholders.

Transformation: Citi has embarked on a multiyear transformation, with the target outcome to change Citi's business and operating models such that they simultaneously strengthen risk and controls and improve Citi's value to customers, clients and shareholders.

U.K.: United Kingdom

Unaudited: Financial statements and information that have not been subjected to auditing procedures sufficient to permit an independent certified public accountant to express an opinion.

USD: U.S. dollar

U.S.: United States of America

U.S. government agencies: U.S. government agencies include, but are not limited to, agencies such as Ginnie Mae and FHA, and do not include Fannie Mae and Freddie Mac, which are U.S. government-sponsored enterprises (U.S. GSEs). In general, obligations of U.S. government agencies are fully and explicitly guaranteed as to the timely payment of principal and interest by the full faith and credit of the U.S. government in the event of a default.

U.S. Treasury: U.S. Department of the Treasury

VAR: Value at risk. A measure of the dollar amount of potential loss from adverse market moves in an ordinary market environment.

VIEs: Variable interest entities

Wallet: Proportion of fee revenue based on estimates of investment banking fees generated across the industry (i.e., the revenue wallet) from investment banking transactions in M&A, equity and debt underwriting, and loan syndications.

Stockholder Information

Citigroup common stock is listed on the NYSE under the ticker symbol "C." Citigroup preferred stock Series J and K are also listed on the NYSE.

Because Citigroup's common stock is listed on the NYSE, the Chief Executive Officer is required to make an annual certification to the NYSE stating that she was not aware of any violation by Citigroup of the corporate governance listing standards of the NYSE. The annual certification to that effect was made to the NYSE on May 21, 2021.

As of January 31, 2022, Citigroup had approximately 61,355 common stockholders of record. This figure does not represent the actual number of beneficial owners of common stock because shares are frequently held in "street name" by securities dealers and others for the benefit of individual owners who may vote the shares.

Transfer Agent

Stockholder address changes and inquiries regarding stock transfers, dividend replacement, 1099-DIV reporting and lost securities for common and preferred stock should be directed to:

Computershare
P.O. Box 505005
Louisville, KY 40233-5005
Telephone No. 781 575 4555
Toll-free No. 888 250 3985
E-mail address: shareholder@computershare.com
Web address: www.computershare.com/investor

Exchange Agent

Holders of Golden State Bancorp, Associates First Capital Corporation or Citicorp common stock should arrange to exchange their certificates by contacting:

Computershare
P.O. Box 505004
Louisville, KY 40233-5004
Telephone No. 781 575 4555
Toll-free No. 888 250 3985
E-mail address: shareholder@computershare.com
Web address: www.computershare.com/investor

On May 9, 2011, Citi effected a 1-for-10 reverse stock split. All Citi common stock certificates issued prior to that date must be exchanged for new certificates by contacting Computershare at the address noted above.

Citi's 2021 Form 10-K filed with the SEC, as well as other annual and quarterly reports, are available from Citi Document Services toll free at 877 936 2737 (outside the United States at 716 730 8055), by e-mailing a request to docserve@citi.com or by writing to:

Citi Document Services
540 Crosspoint Parkway
Getzville, NY 14068

Stockholder Inquiries

Information about Citi, including quarterly earnings releases and filings with the U.S. Securities and Exchange Commission, can be accessed via Citi's website at www.citigroup.com. Stockholder inquiries can also be directed by e-mail to shareholderrelations@citi.com.

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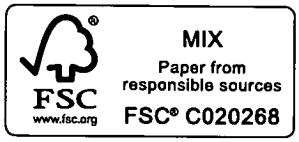

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