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

Form 10-K

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

For the fiscal year ended December 31, 2023	**Commission File Number: 001-14965**

The Goldman Sachs Group, Inc.

(Exact name of registrant as specified in its charter)

Delaware	13-4019460
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
200 West Street, New York, NY	10282
(Address of principal executive offices)	(Zip Code)

(212) 902-1000

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol	Exchange on which registered
Common stock, par value $.01 per share	GS	NYSE
Depositary Shares, Each Representing 1/1,000th Interest in a Share of Floating Rate Non-Cumulative Preferred Stock, Series A	GS PRA	NYSE
Depositary Shares, Each Representing 1/1,000th Interest in a Share of Floating Rate Non-Cumulative Preferred Stock, Series C	GS PRC	NYSE
Depositary Shares, Each Representing 1/1,000th Interest in a Share of Floating Rate Non-Cumulative Preferred Stock, Series D	GS PRD	NYSE
Depositary Shares, Each Representing 1/1,000th Interest in a Share of 6.375% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series K	GS PRK	NYSE
5.793% Fixed-to-Floating Rate Normal Automatic Preferred Enhanced Capital Securities of Goldman Sachs Capital II	GS/43PE	NYSE
Floating Rate Normal Automatic Preferred Enhanced Capital Securities of Goldman Sachs Capital III	GS/43PF	NYSE
Medium-Term Notes, Series F, Callable Fixed and Floating Rate Notes due March 2031 of GS Finance Corp.	GS/31B	NYSE
Medium-Term Notes, Series F, Callable Fixed and Floating Rate Notes due May 2031 of GS Finance Corp.	GS/31X	NYSE

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 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. ☐

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. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☒

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to § 240.10D-1(b). ☐

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

As of June 30, 2023, the aggregate market value of the common stock of the registrant held by non-affiliates of the registrant was approximately $106.2 billion.

As of February 9, 2024, there were 325,562,747 shares of the registrant's common stock outstanding.

Documents incorporated by reference: Portions of The Goldman Sachs Group, Inc.'s Proxy Statement for its 2024 Annual Meeting of Shareholders are incorporated by reference in the Annual Report on Form 10-K in response to Part III, Items 10, 11, 12, 13 and 14.

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PART I

Item 1. Business

Introduction

Goldman Sachs is a leading global financial institution that delivers a broad range of financial services to a large and diversified client base that includes corporations, financial institutions, governments and individuals. Our purpose is to advance sustainable economic growth and financial opportunity. Our goal, reflected in our One Goldman Sachs initiative, is to deliver the full range of our services and expertise to support our clients in a more accessible, comprehensive and efficient manner, across businesses and product areas.

When we use the terms “Goldman Sachs,” “we,” “us,” “our” and "the firm," we mean The Goldman Sachs Group, Inc. (Group Inc. or parent company), a Delaware corporation, and its consolidated subsidiaries. When we use the term “our subsidiaries,” we mean the consolidated subsidiaries of Group Inc. References to “this Form 10-K” are to our Annual Report on Form 10-K for the year ended December 31, 2023. All references to 2023, 2022 and 2021 refer to our years ended, or the dates, as the context requires, December 31, 2023, December 31, 2022 and December 31, 2021, respectively.

Group Inc. is a bank holding company (BHC) and a financial holding company (FHC) regulated by the Board of Governors of the Federal Reserve System (FRB). Our U.S. depository institution subsidiary, Goldman Sachs Bank USA (GS Bank USA), is a New York State-chartered bank.

Our Business Segments

We manage and report our activities in three business segments: Global Banking & Markets, Asset & Wealth Management and Platform Solutions. Global Banking & Markets generates revenues from investment banking fees, including advisory, and equity and debt underwriting fees, Fixed Income, Currency and Commodities (FICC) intermediation and financing activities and Equities intermediation and financing activities, as well as relationship lending and acquisition financing (and related hedges) and investing activities related to our Global Banking & Markets activities. Asset & Wealth Management generates revenues from management and other fees, incentive fees, private banking and lending, equity investments and debt investments. Platform Solutions generates revenues from consumer platforms, and transaction banking and other platform businesses.

The chart below presents our three business segments and their revenue sources.

Business Segments.jpg

Global Banking & Markets

Global Banking & Markets serves public and private sector clients and we seek to develop and maintain long-term relationships with a diverse global group of institutional clients, including corporations, governments, states and municipalities. Our goal is to deliver to our institutional clients all of our resources in a seamless fashion, with our advisory and underwriting activities serving as the main initial point of contact. We make markets and facilitate client transactions in fixed income, currency, commodity and equity products and offer market expertise on a global basis. In addition, we make markets in, and clear client transactions on, major stock, options and futures exchanges worldwide. Our clients include companies that raise capital and funding to grow and strengthen their businesses, and engage in mergers and acquisitions, divestitures, corporate defense, restructurings and spin-offs, as well as companies that are professional market participants, who buy and sell financial products and manage risk, and investment entities whose ultimate clients include individual investors investing for their retirement, buying insurance or saving surplus cash.

As a market maker, we provide prices to clients globally across thousands of products in all major asset classes and markets. At times, we take the other side of transactions ourselves if a buyer or seller is not readily available, and at other times we connect our clients to other parties who want to transact. Our willingness to make markets, commit capital and take risk in a broad range of products is crucial to our client relationships. Market makers provide liquidity and play a critical role in price discovery, which contributes to the overall efficiency of the capital markets. In connection with our market-making activities, we maintain (i) market-making positions, typically for a short period of time, in response to, or in anticipation of, client demand, and (ii) positions to actively manage our risk exposures that arise from these market-making activities (collectively, inventory).

We execute a high volume of transactions for our clients in large, highly liquid markets (such as markets for U.S. Treasury securities, stocks and certain agency mortgage pass-through securities). We also execute transactions for our clients in less liquid markets (such as mid-cap corporate bonds, emerging market currencies and certain non-agency mortgage-backed securities) for spreads and fees that are generally somewhat larger than those charged in more liquid markets. Additionally, we structure and execute transactions involving customized or tailor-made products that address our clients' risk exposures, investment objectives or other complex needs, as well as derivative transactions related to client advisory and underwriting activities.

Through our global sales force, we maintain relationships with our clients, receiving orders and distributing investment research, trading ideas, market information and analysis. Much of this connectivity between us and our clients is maintained on technology platforms, including *Marquee*, and operates globally where markets are open for trading. *Marquee* provides institutional investors with market intelligence, risk analytics, proprietary datasets and trade execution across multiple asset classes.

Our businesses are supported by our Global Investment Research business, which, as of December 2023, provided fundamental research on approximately 3,000 companies worldwide and on approximately 50 national economies, as well as on industries, currencies and commodities.

Our activities are organized by asset class and include both "cash" and "derivative" instruments. "Cash" refers to trading the underlying instrument (such as a stock, bond or barrel of oil). "Derivative" refers to instruments that derive their value from underlying asset prices, indices, reference rates and other inputs, or a combination of these factors (such as an option, which is the right or obligation to buy or sell a certain bond, stock or other asset on a specified date in the future at a certain price, or an interest rate swap, which is the agreement to convert a fixed rate of interest into a floating rate or vice versa).

Global Banking & Markets generates revenues from the following:

Investment banking fees. We provide advisory and underwriting services and help companies raise capital to strengthen and grow their businesses.

Investment banking fees includes the following:

- **Advisory.** We have been a leader for many years in providing advisory services, including strategic advisory assignments with respect to mergers and acquisitions, divestitures, corporate defense activities, restructurings and spin-offs. In particular, we help clients execute large, complex transactions for which we provide multiple services, including cross-border structuring expertise. We also assist our clients in managing their asset and liability exposures and their capital.
- **Underwriting.** We help companies raise capital to fund their businesses. As a financial intermediary, our job is to match the capital of our investing clients, who aim to grow the savings of millions of people, with the needs of our public and private sector clients, who need financing to generate growth, create jobs and deliver products and services. Our underwriting activities include public offerings and private placements in both local and cross-border transactions of a wide range of securities and other financial instruments, including acquisition financing. Underwriting consists of the following:

  Equity underwriting. We underwrite common stock, preferred stock, convertible securities and exchangeable securities. We regularly receive mandates for large, complex transactions and have held a leading position in worldwide public common stock offerings and worldwide initial public offerings for many years.

  Debt underwriting. We originate and underwrite various types of debt instruments, including investment-grade and high-yield debt, bank and bridge loans, including in connection with acquisition financing, and emerging- and growth-market debt, which may be issued by, among others, corporate, sovereign, municipal and agency issuers. In addition, we underwrite and originate structured securities, which include mortgage-related securities and other asset-backed securities.

FICC. FICC generates revenues from intermediation and financing activities.

- **FICC intermediation.** Includes client execution activities related to making markets in both cash and derivative instruments, as detailed below.

  Interest Rate Products. Government bonds (including inflation-linked securities) across maturities, other government-backed securities, and interest rate swaps, options and other derivatives.

  Credit Products. Investment-grade and high-yield corporate securities, credit derivatives, exchange-traded funds (ETFs), bank and bridge loans, municipal securities, distressed debt and trade claims.

  Mortgages. Commercial mortgage-related securities, loans and derivatives, residential mortgage-related securities, loans and derivatives (including U.S. government agency-issued collateralized mortgage obligations and other securities and loans), and other asset-backed securities, loans and derivatives.

  Currencies. Currency options, spot/forwards and other derivatives on G-10 currencies and emerging-market products.

  Commodities. Commodity derivatives and, to a lesser extent, physical commodities, involving crude oil and petroleum products, natural gas, agricultural, base, precious and other metals, electricity, including renewable power, environmental products and other commodity products.

- **FICC financing.** Includes (i) secured lending to our clients through structured credit and asset-backed lending, including warehouse loans backed by mortgages (including residential and commercial mortgage loans), corporate loans and consumer loans (including auto loans and private student loans), (ii) financing through securities purchased under agreements to resell (resale agreements) and (iii) commodity financing to clients through structured transactions.

Equities. Equities generates revenues from intermediation and financing activities.

- **Equities intermediation.** We make markets in equity securities and equity-related products, including ETFs, convertible securities, options, futures and over-the-counter (OTC) derivative instruments. As a principal, we facilitate client transactions by providing liquidity to our clients, including by transacting in large blocks of stocks or derivatives, requiring the commitment of our capital.

  We also structure and make markets in derivatives on indices, industry sectors, financial measures and individual company stocks. We develop strategies and provide information about portfolio hedging and restructuring and asset allocation transactions for our clients. We also work with our clients to create specially tailored instruments to enable sophisticated investors to establish or liquidate investment positions or undertake hedging strategies. We are one of the leading participants in the trading and development of equity derivative instruments.

  Our exchange-based market-making activities include making markets in stocks and ETFs, futures and options on major exchanges worldwide.

  In addition, we generate commissions and fees from executing and clearing institutional client transactions on major stock, options and futures exchanges worldwide, as well as OTC transactions. We provide our clients with access to a broad spectrum of equity execution services, including electronic "low-touch" access and more complex "high-touch" execution through both traditional and electronic platforms.

- **Equities financing.** Includes prime financing, which provides financing to our clients for their securities trading activities through margin loans that are collateralized by securities, cash or other collateral. Prime financing also includes services which involve lending securities to cover institutional clients' short sales and borrowing securities to cover our short sales and to make deliveries into the market. We are also an active participant in broker-to-broker securities lending and third-party agency lending activities. In addition, we execute swap transactions to provide our clients with exposure to securities and indices. Financing activities also include portfolio financing, which clients can utilize to manage their investment portfolios, and other equity financing activities, including securities-based loans to individuals.

Other. We lend to corporate clients, including through relationship lending and acquisition financing. The hedges related to this lending and financing activity are also reported as part of Other. Other also includes equity and debt investing activities related to our Global Banking & Markets activities.

Asset & Wealth Management

Asset & Wealth Management provides investment services to help clients preserve and grow their financial assets and achieve their financial goals. We provide these services to our clients, both institutional and individuals, including investors who primarily access our products through a network of third-party distributors around the world.

We manage client assets across a broad range of investment strategies and asset classes, including equity, fixed income and alternative investments. Alternative investments primarily includes hedge funds, credit funds, private equity, real estate, currencies, commodities and asset allocation strategies. Our investment offerings include those managed on a fiduciary basis by our portfolio managers, as well as those managed by third-party managers. We offer our investment solutions in a variety of structures, including separately managed accounts, mutual funds, private partnerships and other commingled vehicles.

We also provide customized investment advisory solutions designed to address our clients' investment needs. These solutions begin with identifying clients' objectives and continue through portfolio construction, ongoing asset allocation and risk management and investment realization. We draw from a variety of third-party managers, as well as our proprietary offerings, to implement solutions for clients.

We also provide tailored wealth advisory services to clients across the wealth spectrum. We operate globally serving individuals, families, family offices, and foundations and endowments. Our relationships are established directly or introduced through companies that sponsor financial wellness or financial planning programs for their employees, as well as through corporate referrals. During 2023, we sold our Personal Financial Management (PFM) business.

We offer personalized financial planning to individuals and also provide customized investment advisory solutions, and offer structuring and execution capabilities in securities and derivative products across all major global markets. In addition, we offer clients a full range of private banking services, including a variety of deposit alternatives and loans that our clients use to finance investments in both financial and nonfinancial assets, bridge cash flow timing gaps or provide liquidity and flexibility for other needs.

We invest alongside our clients that invest in investment funds that we raise or manage. We also have investments in alternative assets across a range of asset classes. Our investing activities, which are typically longer-term, include investments in corporate equity, credit, real estate and infrastructure assets. See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations — Asset & Wealth Management" in Part II, Item 7 of this Form 10-K for information about our targets to reduce our historical principal investments.

We also raise deposits and have issued unsecured loans to consumers through *Marcus by Goldman Sachs* (Marcus). During 2023, we completed the sale of substantially all of the Marcus loans portfolio.

Asset & Wealth Management generates revenues from the following:

- **Management and other fees.** We receive fees related to managing assets for institutional and individual clients, providing investing and wealth advisory solutions, providing financial planning and counseling services, and executing brokerage transactions for wealth management clients. The vast majority of revenues in management and other fees consists of asset-based fees on client assets that we manage. The fees that we charge vary by asset class, client channel and the types of services provided, and are affected by investment performance, as well as asset inflows and redemptions.

- **Incentive fees.** In certain circumstances, we also receive incentive fees based on a percentage of a fund's or a separately managed account's return, or when the return exceeds a specified benchmark or other performance targets. Such fees include overrides, which consist of the increased share of the income and gains derived primarily from our private equity and credit funds when the return on a fund's investments over the life of the fund exceeds certain threshold returns.

- **Private banking and lending.** Our private banking and lending activities include issuing loans to our wealth management clients. Such loans are generally secured by commercial and residential real estate, securities or other assets. We also accept deposits from wealth management clients, including through Marcus. We also issued unsecured loans to consumers through Marcus. During the first half of 2023, we completed the sale of substantially all of this portfolio. Additionally, we provide investing services through *Marcus Invest* to U.S. customers. Private banking and lending revenues include net interest income allocated to deposits and net interest income earned on loans to individual clients.

- **Equity investments.** Includes investing activities related to our asset management activities primarily related to public and private equity investments in corporate, real estate and infrastructure assets. We also make investments through consolidated investment entities, substantially all of which are engaged in real estate investment activities. In addition, we make investments in connection with our activities to satisfy requirements under the Community Reinvestment Act (CRA), primarily through our Urban Investment Group.

- **Debt investments.** Includes lending activities related to our asset management activities, including investing in corporate debt, lending to middle-market clients, and providing financing for real estate and other assets. These activities include investments in mezzanine debt, senior debt and distressed debt securities.

Platform Solutions

Platform Solutions includes our consumer platforms, such as partnerships offering credit cards and point-of-sale financing, and transaction banking and other platform businesses.

Platform Solutions generates revenues from the following:

Consumer platforms. Our Consumer platforms business issues credit cards and provides point-of-sale financing through GreenSky Holdings, LLC (GreenSky) to consumers to finance the purchases of goods or services. Consumer platforms revenues primarily includes net interest income earned on credit card lending and point-of-sale financing activities. We also accept deposits from Apple Card customers. In the fourth quarter of 2023, we entered into an agreement to sell GreenSky, which is expected to close in the first quarter of 2024, and also completed the sale of a majority of the GreenSky installment loan portfolio. In the fourth quarter of 2023, we also entered into an agreement with General Motors (GM) regarding a process to transition their credit card program to another issuer to be selected by GM.

Transaction banking and other. We provide transaction banking and other services, including cash management services, such as deposit-taking and payment solutions for corporate and institutional clients. Transaction banking revenues include net interest income attributed to transaction banking deposits.

Business Continuity and Information Security

Business continuity and information security, including cybersecurity, are high priorities for us. Their importance has been highlighted by (i) the COVID-19 pandemic work-from-home-related developments, (ii) numerous highly publicized events in recent years, including cyber attacks against financial institutions, governmental agencies, large consumer-based companies, software and information technology service providers and other organizations, some of which have resulted in the unauthorized access to or disclosure of personal information and other sensitive or confidential information, the theft and destruction of corporate information and requests for ransom payments, and (iii) extreme weather events. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations — Risk Management — Cybersecurity Risk Management” in Part II, Item 7 of this Form 10-K for further information about cybersecurity.

Our Business Continuity & Technology Resilience Program has been developed to provide reasonable assurance of business continuity in the event of disruptions at our critical facilities or of our systems, and to comply with regulatory requirements, including those of FINRA. Because we are a BHC, our Business Continuity & Technology Resilience Program is also subject to review by the FRB. The key elements of the program are crisis management, business continuity, technology resilience, business recovery, assurance and verification, and process improvement. In the area of information security, we have developed and implemented a framework of principles, policies and technology designed to protect the information provided to us by our clients and our own information from cyber attacks and other misappropriation, corruption or loss. Safeguards are designed to maintain the confidentiality, integrity and availability of information.

Human Capital Management

Our people are our greatest asset. We believe that a major strength and principal reason for our success is the quality, dedication, determination and collaboration of our people, which enables us to serve our clients, generate long-term value for our shareholders and contribute to the broader community. We invest heavily in developing and supporting our people throughout their careers, and we strive to maintain a work environment that fosters professionalism, excellence, high standards of business ethics, diversity, teamwork and cooperation among our employees worldwide.

Diversity and Inclusion

The strength of our culture, our ability to execute our strategy, and our relationships with clients all depend on a diverse workforce and an inclusive work environment that encourages a wide range of perspectives. We believe that diversity at all levels of our organization, from entry-level analysts to senior management, as well as the Board of Directors of Group Inc. (Board) is essential to our sustainability. As of December 2023, approximately 54% of our Board was diverse by race, gender or sexual orientation. Our management team works closely with our Global Inclusion and Diversity Committee to foster the diversity of our global workforce at all levels. In addition, we have Inclusion and Diversity Committees across regions, which promote an environment that values different perspectives, challenges conventional thinking and maximizes the potential of all our people.

We believe diversity, including diversity of experience, gender identity, race, ethnicity, sexual orientation, disability and veteran status, in addition to being a social imperative, is vital to our commercial success through the creativity that it fosters. For this reason, we have established a comprehensive action plan with aspirational diversity hiring and representation goals which are set forth below and are focused on cultivating an inclusive environment for all our colleagues.

Diverse leadership is crucial to our long-term success and to driving innovation, and we have implemented and expanded outreach and career development programs for rising diverse executive talent. For example, we are focused on ensuring that vice presidents, including diverse vice presidents, have the necessary coaching, sponsorship and advocacy to support their career trajectories and strengthen their leadership platforms. Many other career development initiatives are aimed at fostering talent, including diverse talent, at the analyst and associate level. Our global and regional Inclusion Networks and Interest Forums are open to all professionals at Goldman Sachs to promote and advance connectivity, understanding, inclusion and diversity.

Partner and Managing Director Promotions and Progress Toward Aspirational Goals

The composition of our most recent partnership class was 29% women professionals, 24% Asian professionals, 9% Black professionals, 3% Hispanic/Latinx professionals, 3% LGBTQ+ professionals and 3% professionals who are military/veterans. The composition of our most recent managing director class was 31% women professionals, 31% Asian professionals, 2% Black professionals, 4% Hispanic/ Latinx professionals, 3% LGBTQ+ professionals and 3% professionals who are military/veterans.

We have also set forth the following aspirational goals:

- Analyst and associate hiring of 50% women professionals, 11% Black professionals and 14% Hispanic/Latinx professionals in the Americas, and 9% Black professionals in the U.K. In 2023, our analyst and associate hires included 49% women professionals, 9% Black professionals and 13% Hispanic/Latinx professionals in the Americas, and 15% Black professionals in the U.K.
- Women professionals to represent 40% of our vice presidents globally by 2025, and women professionals to comprise 50% of our employees globally over time. As of December 2023, women professionals represented 33% of our vice president population globally and women professionals represented 42% of our employees globally. In addition, women professionals constituted 32% of senior talent (vice presidents and above) in the U.K., above the 30% goal for U.K. senior talent (vice presidents and above).
- Black professionals to represent 7% of our vice president population in the Americas and in the U.K., and for Hispanic/Latinx professionals to represent 9% of our vice president population in the Americas, both by 2025. As of December 2023, Black professionals represented 4% of our vice president population in the Americas and 5% in the U.K., and Hispanic/Latinx professionals represented 7% of our vice president population in the Americas.
- Doubling the number of campus hires in the U.S. recruited from Historically Black Colleges and Universities (HBCUs) in 2025 relative to 2020.

Other than title, the metrics above are based on self-identification.

Talent Development and Retention

We seek to help our people achieve their full potential by investing in them and supporting a culture of continuous development. Our goals are to maximize individual capabilities, increase commercial effectiveness and innovation, reinforce our culture, expand professional opportunities, and help our people contribute positively to their communities.

Instilling our culture in all employees is a continuous process, in which training plays an important part. We offer our employees the opportunity to participate in ongoing educational offerings and periodic seminars facilitated by our Learning & Engagement team. To accelerate their integration into the firm and our culture, new hires have the opportunity to receive training before they start working via orientation programs that emphasize culture and networking, and nearly all employees participate in at least one training event each year. For our more senior employees, we provide guidance and training on how to manage people and projects effectively, exhibit strong leadership and exemplify our culture. We are also focused on developing a high performing, diverse leadership pipeline and career planning for our next generation of leaders. We maintain a variety of programs aimed at employees' professional growth and leadership development, including initiatives, such as our Vice President and Managing Director Leadership Acceleration Initiatives and Partner Development Initiative.

Enhancing our people's experience of internal mobility is a key focus, as we believe that this will inspire employees, help retain top talent and create diverse experiences to build future leaders.

Another important part of instilling our culture is our employee performance review process. Employees are reviewed by supervisors, co-workers and employees whom they supervise in a 360-degree review process that is integral to our team approach and includes an evaluation of an employee's performance with respect to risk management, protecting our reputation, adherence to our code of conduct, compliance, and diversity and inclusion principles. Our approach to evaluating employee performance centers on providing robust, timely and actionable feedback that facilitates professional development. We have directed our managers, as leaders at the firm, to take an active coaching role with their teams. We have also implemented "The Three Conversations at GS" through which managers establish goals with their team members at the start of the year, check in mid-year on progress and then close out the year with a conversation on performance against goals.

We believe that our people value opportunities to contribute to their communities and that these opportunities enhance their job satisfaction. We also believe that being able to volunteer together with colleagues and support community organizations through completing local service projects strengthens our people's bond with us. Community TeamWorks, our signature volunteering initiative, enables our people to participate in high-impact, team-based volunteer opportunities, including projects coordinated with hundreds of nonprofit partner organizations worldwide. During 2023, our people volunteered approximately 94,000 hours of service globally through Community TeamWorks, with approximately 18,000 employees partnering with 640 nonprofit organizations on approximately 1,400 community projects.

Wellness

We recognize that for our people to be successful in the workplace they need support in their personal, as well as their professional, lives and that is why our wellness framework is designed to promote health and fitness, resilience, and work-life balance. We provide a number of policies for our employees that support taking time away from the office when needed, including a minimum of 20 weeks of parental leave and up to four weeks of family care leave in order to assist with the care of family members with a serious health condition, death of an immediate family member or miscarriage, in addition to bereavement leave. We allow managing directors to take time off without a fixed vacation day entitlement, and have also set a minimum annual expected vacation usage of 15 days for all employees. For longer-tenured employees, we offer an unpaid sabbatical leave.

We also continue to advance our resilience programs, offering our people a range of counseling, coaching, medical advisory and personal wellness services. We have introduced and globally scaled the internationally recognized Mental Health First Aid certification to our people. In 2023, we trained 600 individuals and in 2024 plan to achieve at least 1,000 employees certified across the firm. We have evolved and strengthened virtual offerings to enhance access to support, with the aim of maintaining the physical and mental well-being of our people, and enhancing their effectiveness and productivity.

We understand the crucial role caregiving plays in the lives of our employees and to help enable employees to better balance their roles at work and their responsibilities at home we offer a variety of family-centered benefits, including adoption and surrogacy stipends and adult and childcare options to help our people navigate caregiving across various life stages.

In addition, to support the financial wellness of our employees, we offer a variety of resources that help them manage their personal financial health and decision-making, including financial education information sessions, live and on-demand webinars, articles and interactive digital tools.

Global Reach and Strategic Locations

As a firm with a global client base, we take a strategic approach to attracting, developing and managing a global workforce. Our clients are located worldwide and we are an active participant in financial markets around the world. As of December 2023, we had headcount of 45,300, offices in over 41 countries, and 51% of our headcount was based in the Americas, 20% in Europe, Middle East and Africa (EMEA) and 29% in Asia. Our employees come from over 180 countries and speak more than 150 languages as of December 2023.

In addition to maintaining offices in major financial centers around the world, we have established key strategic locations, including in Bengaluru, Salt Lake City, Dallas, Singapore, Warsaw and Hyderabad. We continue to evaluate the expanded use of strategic locations, including cities in which we do not currently have a presence.

As of December 2023, 41% of our employees were working in strategic locations. We believe our investment in these strategic locations enables us to build centers of excellence around specific capabilities that support our business initiatives.

Sustainability

We have a long-standing commitment to sustainability. Our two priorities in this area are helping clients across industries decarbonize their businesses to support their transition to a low-carbon economy (Climate Transition) and to advance solutions that expand access, increase affordability, and drive outcomes to support sustainable economic growth (Inclusive Growth). Our strategy is to advance these two priorities through our work with our clients, and with strategic partners whose strengths and areas of focus complement our own, as well as through our supply chain.

We established a Sustainable Finance Group (SFG), which serves as the centralized group that drives climate strategy and sustainability efforts across our firm, including commercial efforts alongside our businesses, to advance Climate Transition and Inclusive Growth. Since establishing SFG, our sustainable finance-related efforts have continued to evolve. For example, within Global Banking & Markets, we established the Sustainable Banking Group, a group focused on supporting our corporate clients in reducing their direct and indirect carbon emissions. Within Asset & Wealth Management there are multiple teams that specialize in sustainable investing. The Sustainability & Impact Solutions team in Asset & Wealth Management also helps mobilize the full range of insights, advisory services and investment solutions across our asset management client segments.

Our activities relating to sustainability present both financial and nonfinancial risks, and we have processes for managing these risks, similar to the other risks we face. We have integrated oversight of climate-related risks into our risk management governance structure, from senior management to our Board and its committees, including the Risk and Public Responsibilities committees. The Risk Committee of the Board oversees firmwide financial and nonfinancial risks, which include climate risk, and, as part of its oversight, receives updates on our risk management approach to climate risk. The Public Responsibilities Committee of the Board assists the Board in its oversight of our firmwide sustainability strategy and sustainability issues affecting us, including with respect to climate change. As part of its oversight, the Public Responsibilities Committee receives periodic updates on our sustainability strategy, and also periodically reviews our governance and related policies and processes for sustainability and climate change-related matters. We have also implemented an Environmental Policy Framework to guide our overall approach to sustainability issues. We apply this Framework when evaluating transactions for environmental and social risks and impacts.

Our employees also receive training with respect to environmental and social risks, including for sectors and industries that we believe have higher potential for these risks. See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Risk Management — Other Risk Management — Climate-Related and Environmental Risk Management" in Part II, Item 7 of this Form 10-K for further information about our climate-related and environmental risk management.

As a leading financial institution, we acknowledge the importance of Climate Transition and Inclusive Growth for our business. We have completed sustainability bond issuances, which align with our sustainable finance framework for future issuances and fund a range of on-balance sheet sustainable finance activity. We believe we can advance sustainability by partnering with our clients across our businesses, including by developing new sustainability-linked financing solutions, offering strategic advice, or co-investing alongside our clients in clean energy companies. We have announced a target to deploy $750 billion in sustainable financing, investing and advisory activity by the beginning of 2030. As of December 2023, we achieved approximately 75% of that goal, with the majority dedicated to Climate Transition.

With respect to Climate Transition, we have announced our commitment to align our financing activities with a net-zero-by-2050 pathway. In that context, we have set an initial set of 2030 targets for our energy, power and auto manufacturing portfolios, three sectors where we see an opportunity to proactively engage our clients and investors, deploy capital required for transition, and invest in new commercial solutions to drive decarbonization in the real economy. Carbon neutrality is also a priority for the operation of our firm and our supply chain. In 2015, we achieved carbon neutrality in our operations and business travel, ahead of our 2020 goal announced in 2009. We have expanded our operational carbon commitment to include our supply chain, targeting net-zero carbon emissions by 2030.

In addition to Climate Transition, our approach to sustainability also centers on Inclusive Growth where we seek to help drive solutions that expand access, increase affordability, and support outcomes to advance sustainable economic growth. Commercial solutions that seek to support Inclusive Growth include, among others, those of our Urban Investment Group and our Sustainable Investing Group. We also seek to support Inclusive Growth through sponsored initiatives, such as *One Million Black Women*, *10,000 Women* and *10,000 Small Businesses*. An overarching theme of our sustainability strategy is promoting diversity and inclusion as an imperative for us, as well as for our clients and their boards. These efforts are further strengthened by strategic partnerships that we have established in areas where we have identified gaps or believe we are able to drive even greater impact through collaboration. We believe our ability to achieve our sustainability objectives is critically dependent on the strengths and talents of our people, and we recognize that our people are able to maximize their impact by collaborating in a diverse and inclusive work environment. See "Business — Human Capital Management" for information about our human capital management goals, programs and policies.

Competition

The financial services industry and all of our businesses are intensely competitive, and we expect them to remain so. Our competitors provide investment banking, market-making and asset management services, private banking and lending, commercial lending, credit cards, transaction banking, deposit-taking and other banking products and services, and make investments in securities, commodities, derivatives, real estate, loans and other financial assets. Our competitors include brokers and dealers, investment banking firms, commercial banks, credit card issuers, insurance companies, investment advisers, mutual funds, hedge funds, private equity funds, merchant banks, consumer finance companies and financial technology and other internet-based companies. Some of our competitors operate globally and others regionally, and we compete based on a number of factors, including transaction execution, client experience, products and services, innovation, reputation and price.

We have faced, and expect to continue to face, pressure to retain market share by committing capital to businesses or transactions on terms that offer returns that may not be commensurate with their risks. In particular, corporate clients seek such commitments (such as agreements to participate in their loan facilities) from financial services firms in connection with investment banking and other assignments.

Consolidation and convergence have significantly increased the capital base and geographic reach of some of our competitors and have also hastened the globalization of the securities and other financial services markets. As a result, we have had to commit capital to support our international operations and to execute large global transactions. To capitalize on some of our most significant opportunities, we will have to compete successfully with financial institutions that are larger and have more capital and that may have a stronger local presence and longer operating history outside the U.S.

We also compete with smaller institutions that offer more targeted services, such as independent advisory firms. Some clients may perceive these firms to be less susceptible to potential conflicts of interest than we are, and, as described below, our ability to effectively compete with them could be affected by regulations and limitations on activities that apply to us but may not apply to them.

A number of our businesses are subject to intense price competition. Efforts by our competitors to gain market share have resulted in pricing pressure in our investment banking, market-making, consumer, wealth management and asset management businesses. For example, the increasing volume of trades executed electronically, through the internet and through alternative trading systems, has increased the pressure on trading commissions, in that commissions for electronic trading are generally lower than those for non-electronic trading. It appears that this trend toward low-commission trading will continue. Price competition has also led to compression in the difference between the price at which a market participant is willing to sell an instrument and the price at which another market participant is willing to buy it (i.e., bid/offer spread), which has affected our market-making businesses. The increasing prevalence of passive investment strategies that typically have lower fees than other strategies we offer has affected the competitive and pricing dynamics for our asset management products and services. In addition, we believe that we will continue to experience competitive pressures in these and other areas in the future as some of our competitors seek to obtain market share by further reducing prices, and as we enter into or expand our presence in markets that rely more heavily on electronic trading and execution. We and other banks also compete for deposits on the basis of the rates we offer. Increases in short-term interest rates have resulted in and may continue to result in more intense competition in deposit pricing, as well as competition from non-deposit financial products.

We also compete on the basis of the types of financial products and client experiences that we and our competitors offer. In some circumstances, our competitors may offer financial products that we do not offer and that our clients may prefer, including cryptocurrencies and other digital assets that we cannot or may choose not to provide. Our competitors may also develop technology platforms that provide a better client experience.

The provisions of the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), the requirements promulgated by the Basel Committee on Banking Supervision (Basel Committee) and other financial regulations could affect our competitive position to the extent that limitations on activities, increased fees and compliance costs or other regulatory requirements do not apply, or do not apply equally, to all of our competitors or are not implemented uniformly across different jurisdictions. For example, the provisions of the Dodd-Frank Act that prohibit proprietary trading and restrict investments in certain hedge and private equity funds differentiate between U.S.-based and non-U.S.-based banking organizations and give non-U.S.-based banking organizations greater flexibility to trade outside of the U.S. and to form and invest in funds outside the U.S.

Likewise, the obligations with respect to derivative transactions under Title VII of the Dodd-Frank Act depend, in part, on the location of the counterparties to the transaction. The impact of regulatory developments on our competitive position has depended and will continue to depend to a large extent on the manner in which the required rulemaking and regulatory guidance evolve, the extent of international convergence, and the development of market practice and structures under the evolving regulatory regimes, as described further in "Regulation" below.

We also face intense competition in attracting and retaining qualified employees. Our ability to continue to compete effectively has depended and will continue to depend upon our ability to attract new employees, retain and motivate our existing employees and to continue to compensate employees competitively amid intense public and regulatory scrutiny on the compensation practices of large financial institutions, including in jurisdictions such as New York State where we are required to publish certain compensation information as part of the employee hiring process. Our pay practices and those of certain of our competitors are subject to review by, and the standards of, the FRB and other regulators inside and outside the U.S., including the Prudential Regulation Authority (PRA) and the Financial Conduct Authority (FCA) in the U.K. We also compete for employees with institutions whose pay practices are not subject to regulatory oversight. See "Regulation — Compensation Practices" and "Risk Factors — Competition — Our businesses would be adversely affected if we are unable to hire and retain qualified employees" in Part I, Item 1A of this Form 10-K for further information about such regulation.

Regulation

As a participant in the global financial services industry, we are subject to extensive regulation and supervision worldwide. The regulatory regimes applicable to our operations have been, and continue to be, subject to significant changes.

New regulations have been adopted or are being considered by regulators and policy makers worldwide, as described below. The impacts of any changes to the regulations affecting our businesses, including as a result of the proposals described below, are uncertain and will not be known until such changes are finalized and market practices and structures develop under the revised regulations.

Group Inc. is a BHC under the U.S. Bank Holding Company Act of 1956 (BHC Act) and an FHC under amendments to the BHC Act effected by the U.S. Gramm-Leach-Bliley Act of 1999 (GLB Act), and is subject to supervision and examination by the FRB, which is our primary regulator.

Under the system of "functional regulation" established under the GLB Act, the primary regulators of our U.S. non-bank subsidiaries directly regulate the activities of those subsidiaries, with the FRB exercising a supervisory role. Such "functionally regulated" subsidiaries include broker-dealers and security-based swap dealers registered with the SEC, such as our principal U.S. broker-dealer, entities registered with or regulated by the CFTC with respect to futures-related and swaps-related activities and investment advisers registered with the SEC with respect to their investment advisory activities.

Our principal subsidiaries operating in the U.S. include GS Bank USA, Goldman Sachs & Co., LLC (GS&Co.), J. Aron & Company LLC (J. Aron) and Goldman Sachs Asset Management, L.P.

GS Bank USA is our principal U.S. bank subsidiary and is supervised and regulated by the FRB, the FDIC, the New York State Department of Financial Services (NYDFS) and the Consumer Financial Protection Bureau (CFPB). GS Bank USA also has a London branch, which is regulated by the FCA and PRA. We conduct a number of our activities partially or entirely through GS Bank USA and its subsidiaries, including: corporate loans (including leveraged lending); securities-based and collateralized loans; credit card loans; small business loans; residential mortgages; transaction banking; deposit-taking; interest rate, credit, currency and other derivatives; and agency lending.

GS&Co. is our principal U.S. broker-dealer and is registered as a broker-dealer, a security-based swap dealer, a municipal advisor and an investment adviser with the SEC and as a broker-dealer in all 50 states and the District of Columbia. U.S. self-regulatory organizations, such as FINRA and the NYSE, have adopted rules that apply to broker-dealers, such as GS&Co.

Our principal subsidiaries operating in Europe include: Goldman Sachs International (GSI), Goldman Sachs International Bank (GSIB), Goldman Sachs Asset Management International (GSAMI), Goldman Sachs Bank Europe SE (GSBE), Goldman Sachs Asset Management B.V., and Goldman Sachs Paris Inc. et Cie (GSPIC).

Our E.U. subsidiaries are subject to various E.U. regulations, as well as national laws, including those implementing European directives. GSBE is directly supervised by the European Central Bank (ECB) and additionally by BaFin and Deutsche Bundesbank in the context of the E.U. Single Supervisory Mechanism. GSBE's London branch is regulated by the FCA. GSBE engages in certain activities primarily in the E.U., including underwriting and market making in debt and equity securities and derivatives, investment, asset and wealth management services, deposit-taking, lending (including securities lending), and financial advisory services. GSBE is also registered with the CFTC as a swap dealer and with the SEC as a security-based swap dealer and as a primary dealer for government bonds issued by E.U. sovereigns. Like our other foreign bank subsidiaries, GSBE is subject to limits on the nature and scope of its activities under the FRB's Regulation K, including limits on its underwriting and market making in equity securities based on GSBE's and/or GS Bank USA's capital.

GSPIC is an investment firm under the French Prudential Supervision and Resolution Authority and the French Financial Markets Authority. GSPIC's activities include certain activities that GSBE is prevented from undertaking. GSPIC is also transitioning in 2024 to a different classification as an investment firm under the E.U. Investment Firm Regulation, the prudential regime for E.U. investment firms.

GSI is a U.K. broker-dealer and a designated investment firm, and GSIB is a U.K. bank. Both GSI and GSIB are regulated by the PRA and the FCA. As a designated investment firm, GSI is subject to prudential requirements similar to those applicable to banks, including capital and liquidity requirements. GSI provides broker-dealer services in and from the U.K. and is registered with the CFTC as a swap dealer and with the SEC as a security-based swap dealer. GSIB engages in lending (including securities lending) and deposit-taking activities (including by taking retail deposits) and is a primary dealer for U.K. government bonds. GSI and GSIB maintain branches outside of the U.K. and are subject to the laws and regulations of the jurisdictions where they are located.

Our principal subsidiary operating in Asia is Goldman Sachs Japan Co., Ltd. (GSJCL). GSJCL is our regulated Japanese broker-dealer subsidiary and is regulated by Japan's Financial Services Agency, the Tokyo Stock Exchange, the Bank of Japan and the Ministry of Finance, among others.

Banking Supervision and Regulation

The Basel Committee is the primary global standard setter for prudential bank regulation. However, the Basel Committee's standards do not become effective in a jurisdiction until the relevant regulators have adopted rules to implement its standards. The implications of Basel Committee standards and related regulations for our businesses depend to a large extent on their implementation by the relevant regulators globally, and the market practices and structures that develop.

Capital and Liquidity Requirements. We and GS Bank USA are subject to risk-based regulatory capital and leverage requirements that are calculated in accordance with the regulations of the FRB (Capital Framework). The Capital Framework is largely based on the Basel Committee's framework for strengthening the regulation, supervision and risk management of banks (Basel III) and also implements certain provisions of the Dodd-Frank Act. Under the U.S. federal bank regulatory agencies' tailoring framework, we and GS Bank USA are subject to "Category I" standards because we have been designated as a global systemically important bank (G-SIB). Accordingly, we and GS Bank USA are "Advanced approach" banking organizations. Under the Capital Framework, we and GS Bank USA must meet specific regulatory capital requirements that involve quantitative measures of assets, liabilities and certain off-balance sheet items. The sufficiency of our capital levels is also subject to qualitative judgments by regulators. We and GS Bank USA are also subject to liquidity requirements established by the U.S. federal bank regulatory agencies.

GSBE is subject to capital and liquidity requirements prescribed in the E.U. Capital Requirements Regulation, as amended (CRR), and the E.U. Capital Requirements Directive, as amended (CRD), which are largely based on Basel III. The CRR requires large institutions with securities traded on a regulated market of a member state to make qualitative and quantitative disclosures relating to environmental, social and governance risks on a semi-annual basis. These requirements will apply to our E.U.-regulated entities beginning in January 2025.

GSI and GSIB are subject to the U.K. capital and liquidity frameworks prescribed in the PRA Rulebook and the U.K. Capital Requirements Regulation, which are also largely based on Basel III and are generally aligned with the E.U. capital and liquidity frameworks.

Risk-Based Capital Ratios. As Advanced approach banking organizations, we and GS Bank USA calculate risk-based capital ratios in accordance with both the Standardized and Advanced Capital Rules. Both the Standardized and Advanced Capital Rules include minimum risk-based capital requirements and additional capital conservation buffer requirements that must be satisfied solely with Common Equity Tier 1 (CET1) capital. Failure to satisfy a buffer requirement in full would result in constraints on capital distributions and discretionary executive compensation. The severity of the constraints would depend on the amount of the shortfall and the organization's "eligible retained income," defined as the greater of (i) net income for the four preceding quarters, net of distributions and associated tax effects not reflected in net income; and (ii) the average of net income over the preceding four quarters. For Group Inc., the capital conservation buffer requirements consist of a 2.5% buffer (under the Advanced Capital Rules), a stress capital buffer (SCB) (under the Standardized Capital Rules), and both a countercyclical buffer and the G-SIB surcharge (under both Capital Rules). For GS Bank USA, the capital conservation buffer requirements consist of a 2.5% buffer and the countercyclical capital buffer.

In July 2023, the FRB issued a proposal to implement a revised G-SIB assessment methodology and to revise certain systemic indicators to be based on daily or monthly average values during each year, instead of year-end values.

The SCB is based on the results of the Federal Reserve's supervisory stress tests and our planned common stock dividends and is likely to change over time based on the results of the annual supervisory stress tests. See "Stress Tests and Capital Planning" below. The countercyclical capital buffer is designed to counteract systemic vulnerabilities and currently applies only to banking organizations subject to Category I, II or III standards, including us and GS Bank USA. Several other national supervisors also require countercyclical capital buffers. The G-SIB surcharge and countercyclical capital buffer applicable to us may change in the future, including due to additional guidance from our regulators and/or positional changes. As a result, the minimum capital ratios to which we are subject are likely to change over time.

The U.S. federal bank regulatory agencies have adopted a rule that implements the Basel Committee's standardized approach for measuring counterparty credit risk exposures in connection with derivative contracts (SA-CCR). Under the rule, "Advanced approach" banking organizations are required to use SA-CCR in the calculation of their standardized risk-weighted assets (RWAs) and, with some adjustments, in the determination of their supplementary leverage ratios (SLRs) discussed below.

The capital requirements applicable to GSBE, GSI and GSIB include both minimum requirements and buffers. See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Capital Management and Regulatory Capital" in Part II, Item 7 of this Form 10-K and Note 20 to the consolidated financial statements in Part II, Item 8 of this Form 10-K for information about our capital ratios and those of GS Bank USA, GSBE, GSI and GSIB.

The Basel Committee standards include guidelines for calculating incremental capital ratio requirements for banking institutions that are systemically significant from a domestic but not global perspective (D-SIBs). Depending on how these guidelines are implemented by national regulators, they may apply to certain subsidiaries of G-SIBs. These guidelines are in addition to the framework for G-SIBs, but are more principles-based. The U.S. federal bank regulatory agencies have not designated any D-SIBs. The CRD and CRR provide that institutions that are systemically important at the E.U. or member state level, known as other systemically important institutions (O-SIIs), may be subject to additional capital ratio requirements, according to their degree of systemic importance (O-SII buffers). BaFin has identified GSBE as an O-SII in Germany and set an O-SII buffer.

In the U.K., the PRA has identified Goldman Sachs Group UK Limited (GSG UK), the parent company of GSI and GSIB, as an O-SII but has not applied an O-SII buffer.

The Basel Committee has finalized revisions to the Basel III Capital Requirements (Basel III Revisions), and in July 2023, the U.S. bank regulatory agencies proposed a rule implementing the Basel III Revisions and the Fundamental Review of the Trading Book (FRTB). The FRTB, among other things, revises the standardized and internal model-based approaches used to calculate market risk requirements and clarifies the scope of positions subject to market risk capital requirements.

The proposed effective date for the U.S. proposal is July 1, 2025, with a three-year transition period for the calculation of Expanded Risk-Based approach RWAs. The proposal includes the replacement of the Advanced approach with an Expanded Risk-Based approach, which eliminates the use of internal models to calculate RWAs for credit and operational risk. The proposal incorporates the application of the SCB requirements in the Expanded Risk-Based approach. The credit risk component of the Expanded Risk-Based approach would include new risk weights for many counterparty and exposure types, a revised collateral haircut approach for certain collateralized transactions and additional restrictions for recognizing collateral in certain securities financing transactions. Under the proposed rules, the RWAs for operational risk would be calculated primarily based on revenues and historical losses. In addition, the proposal introduces the FRTB, which would replace the market risk rule for both the Standardized and Expanded Risk-Based approaches and introduce a new credit valuation adjustment (CVA) risk RWA calculation for the Expanded Risk-Based approach. We continue to evaluate the impact of the proposed rules, but we preliminarily estimate that under these rules, if adopted as proposed and if our assets and liabilities remain largely consistent with those as of December 2023, our regulatory capital requirements could increase by approximately 25% on a fully phased-in basis.

The European Commission has proposed rules to implement the Basel III Revisions and the FRTB, and the Council of the E.U. has published the consolidated version reflecting the E.U. trilogue agreement. The agreed E.U. proposal contemplates amendments to the CRR and the CRD, referred to as CRR III and CRD VI, generally taking effect in January 2025. The proposed amendments include revised rules for market risk capital, a new standardized approach for operational risk and CVA risk capital and a floor on internally modeled capital requirements at a percentage of the capital requirements under the standardized approach, commonly known as the "output floor."

In December 2023, the PRA issued near final market risk rules for the U.K. which are expected to be effective from July 1, 2025. The PRA also issued its consultation on the implementation of the Basel III Revisions, with a proposed effective date of July 1, 2025. Under the PRA consultation, our U.K. subsidiaries are not expected to be subject to a floor on internally modeled capital requirements. The PRA has also published near final rules for CVA risk, counterparty credit risk and operational risk, in addition to market risk.

The Basel Committee has published an updated securitization framework and a revised G-SIB assessment methodology. The U.S. federal bank regulatory agencies' July 2023 proposal would implement the updated securitization framework. The updated securitization framework has been implemented in the E.U. and U.K.

The Basel Committee has also published a final standard on the prudential treatment of cryptoasset exposures. The Basel Committee contemplates that national regulators will have incorporated the standard into local capital requirements by January 1, 2025. U.S. federal bank regulatory agencies and E.U. and U.K. authorities have not yet proposed rules implementing the standards.

Leverage Ratios. Under the Capital Framework, we and GS Bank USA are subject to Tier 1 leverage ratios and SLRs established by the FRB. As a G-SIB, the SLR requirements applicable to us include both a minimum requirement and a buffer requirement, which operates in the same manner as the risk-based buffer requirements described above. In April 2018, the FRB and the OCC issued a proposed rule which would (i) replace the current 2% SLR buffer for G-SIBs, including us, with a buffer equal to 50% of their G-SIB surcharge and (ii) revise the 6% SLR requirement for Category I banks, such as GS Bank USA, to be "well capitalized" with a requirement equal to 3% plus 50% of their parent's G-SIB surcharge.

GSBE and certain of our U.K. entities are also subject to requirements relating to leverage ratios, which are generally based on the Basel Committee leverage ratio standards.

See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Capital Management and Regulatory Capital" in Part II, Item 7 of this Form 10-K and Note 20 to the consolidated financial statements in Part II, Item 8 of this Form 10-K for information about our and GS Bank USA's Tier 1 leverage ratios and SLRs, and GSI's leverage ratio.

Liquidity Ratios. The Basel Committee's framework for liquidity risk measurement, standards and monitoring requires banking organizations to measure their liquidity against two specific liquidity tests: the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR).

The LCR rule issued by the U.S. federal bank regulatory agencies and applicable to both us and GS Bank USA is generally consistent with the Basel Committee's framework and is designed to ensure that a banking organization maintains an adequate level of unencumbered, high-quality liquid assets equal to or greater than the expected net cash outflows under an acute short-term liquidity stress scenario. We and GS Bank USA are required to maintain a minimum LCR of 100%.

GSBE is subject to the LCR rule approved by the European Parliament and Council, and GSI and GSIB are subject to the U.K. regulatory authorities' LCR rules, which are generally consistent with the Basel Committee's framework.

The NSFR is designed to promote medium- and long-term stable funding of the assets and off-balance sheet activities of banking organizations over a one-year time horizon. The Basel Committee's NSFR framework requires banking organizations to maintain a minimum NSFR of 100%.

We and GS Bank USA are subject to the U.S. NSFR rule and we are required to disclose the quarterly average of our daily NSFR on a semi-annual basis. The CRR implements the NSFR for certain E.U. financial institutions, including GSBE. The NSFR requirement implemented in the U.K. is applicable to both GSI and GSIB.

The FRB's enhanced prudential standards require BHCs with $100 billion or more in total consolidated assets to comply with enhanced liquidity and overall risk management standards, which include maintaining a level of highly liquid assets based on projected funding needs for 30 days, and increased involvement by boards of directors in liquidity and overall risk management. Although the liquidity requirement under these rules has some similarities to the LCR, it is a separate requirement. GSBE also has its own liquidity planning process, which incorporates internally designed stress tests and those required under German regulatory requirements and the ECB Guide to Internal Liquidity Adequacy Assessment Process (ILAAP). GSI and GSIB have their own liquidity planning processes, which incorporate internally designed stress tests developed in accordance with the guidelines of the PRA's ILAAP.

See "Available Information" below and "Management's Discussion and Analysis of Financial Condition and Results of Operations — Risk Management — Overview and Structure of Risk Management" and "— Liquidity Risk Management — Liquidity Regulatory Framework" in Part II, Item 7 of this Form 10-K for information about the LCR and NSFR, as well as our risk management practices and liquidity.

Stress Tests and Capital Planning. The FRB's Comprehensive Capital Analysis and Review (CCAR) is designed to ensure that large BHCs, including us, have sufficient capital to permit continued operations during times of economic and financial stress. As required by the FRB, we perform an annual capital stress test and incorporate the results into an annual capital plan, which we submit to the FRB for review. See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Capital Management and Regulatory Capital — Capital Management — Capital Planning and Stress Testing Process" in Part II, Item 7 of this Form 10-K for further information about our annual capital plan. As described in "Available Information" below, summary results of the annual stress test are published on our website.

As part of the CCAR process, the FRB evaluates our plan to make capital distributions across a range of macroeconomic and company-specific assumptions, based on our and the FRB's own stress tests.

Under the FRB's rule applicable to BHCs with $100 billion or more in total consolidated assets, including us, the SCB applies to the Standardized approach capital requirements. The SCB reflects stressed losses estimated under the supervisory severely adverse scenario of the CCAR stress tests, as calculated by the FRB, and includes four quarters of planned common stock dividends. The SCB, which is subject to a 2.5% floor, is generally effective on October 1 of each year and remains in effect until October 1 of the following year, unless it is reset in connection with the resubmission of a capital plan. See "Available Information" below and "Management's Discussion and Analysis of Financial Condition and Results of Operations — Capital Management and Regulatory Capital" in Part II, Item 7 of this Form 10-K for information about our SCB requirement.

The SCB rule requires a BHC to receive the FRB's approval for any dividend, stock repurchase or other capital distribution, other than a capital distribution on a newly issued capital instrument, if the BHC is required to resubmit its capital plan, which may occur if the BHC determines there has been or will be a "material change" in its risk profile, financial condition or corporate structure since the plan was last submitted, or if the FRB directs the BHC to revise and resubmit its capital plan.

U.S. depository institutions with total consolidated assets of $250 billion or more that are subsidiaries of U.S. G-SIBs, such as GS Bank USA, are required to submit annual company-run stress test results to the FRB. GSBE also has its own capital and stress testing process, which incorporates internally designed stress tests and those required under German regulatory requirements and the ECB Guide to Internal Capital Adequacy Assessment Process (ICAAP). In addition, GSI and GSIB have their own capital planning and stress testing processes, which incorporate internally designed stress tests developed in accordance with the PRA's ICAAP guidelines.

Limitations on the Payment of Dividends. U.S. federal and state laws impose limitations on the payment of dividends by U.S. depository institutions, such as GS Bank USA. In general, the amount of dividends that may be paid by GS Bank USA is limited to the lesser of the amounts calculated under a recent earnings test and an undivided profits test. Under the recent earnings test, a dividend may not be paid if the total of all dividends declared by the entity in any calendar year is in excess of the current year's net income combined with the retained net income of the two preceding years, unless the entity obtains regulatory approval. Under the undivided profits test, a dividend may not be paid in excess of the entity's undivided profits (generally, accumulated net profits that have not been paid out as dividends or transferred to surplus), unless the entity receives regulatory and stockholder approval.

The applicable U.S. banking regulators have authority to prohibit or limit the payment of dividends if, in the banking regulator's opinion, payment of a dividend would constitute an unsafe or unsound practice in light of the financial condition of the banking organization.

Source of Strength. The Dodd-Frank Act requires BHCs to act as a source of strength to their U.S. bank subsidiaries and to commit capital and financial resources to support those subsidiaries. This support may be required by the FRB at times when BHCs might otherwise determine not to provide it. Capital loans by a BHC to a U.S. subsidiary bank are subordinate in right of payment to deposits and to certain other indebtedness of the subsidiary bank. In addition, if a BHC commits to a U.S. federal banking agency that it will maintain the capital of its bank subsidiary, whether in response to the FRB's invoking its source-of-strength authority or in response to other regulatory measures, that commitment will be assumed by the bankruptcy trustee for the BHC and the bank will be entitled to priority payment in respect of that commitment, ahead of other creditors of the BHC.

Transactions Between Affiliates. Transactions between GS Bank USA or its subsidiaries, including GSBE, and Group Inc. or its other subsidiaries and affiliates are subject to restrictions under the Federal Reserve Act and regulations issued by the FRB. These laws and regulations generally limit the types and amounts of transactions (such as loans and other credit extensions, including credit exposure arising from resale agreements, securities borrowing and derivative transactions, from GS Bank USA or its subsidiaries to Group Inc. or its other subsidiaries and affiliates and purchases of assets by GS Bank USA or its subsidiaries from Group Inc. or its other subsidiaries and affiliates) that may take place and generally require those transactions, to the extent permitted, to be on market terms or better to GS Bank USA or its subsidiaries. These laws and regulations generally do not apply to transactions between GS Bank USA and its subsidiaries. Similarly, German regulatory requirements provide that certain transactions between GSBE and GS Bank USA or its other affiliates, including Group Inc., must be on market terms and are subject to special internal approval requirements. PRA rules also provide requirements for transactions between GSI and GSIB and their respective affiliates.

Resolution and Recovery Plans. We are required by the FRB and the FDIC to submit a periodic plan for our rapid and orderly resolution in the event of material financial distress or failure (resolution plan). If these regulators jointly determine that an institution has failed to remediate identified shortcomings in its resolution plan or that its resolution plan, after any permitted resubmission, is not credible or would not facilitate an orderly resolution under the U.S. Bankruptcy Code, they may jointly impose more stringent capital, leverage or liquidity requirements or restrictions on growth, activities or operations, or may jointly order the institution to divest assets or operations, in order to facilitate orderly resolution in the event of failure. The FRB and FDIC require U.S. G-SIBs to submit resolution plans every two years (alternating between submissions of full plans and targeted plans that include only select information). We submitted our 2023 resolution plan, which was a full submission, in June 2023. Our next required submission is a targeted submission by July 1, 2025. See "Risk Factors — Legal and Regulatory — The application of Group Inc.'s proposed resolution strategy could result in greater losses for Group Inc.'s security holders" in Part I, Item 1A of this Form 10-K and "Available Information" in Part I, Item 1 of this Form 10-K for further information about our resolution plan.

We are also required by the FRB to submit, on a periodic basis, a global recovery plan that outlines the steps that we could take to reduce risk, maintain sufficient liquidity and conserve capital in times of prolonged stress. Certain of our subsidiaries are also subject to similar recovery plan requirements.

GS Bank USA is required to provide a resolution plan to the FDIC that must, among other things, demonstrate that it is adequately protected from risks arising from our other entities. GS Bank USA's most recent resolution plan was submitted in December 2023. In August 2023, the FDIC proposed to revise its current rule that requires the submission of resolution plans by insured depository institutions (IDIs) with $50 billion or more in total assets. The proposal would revise the requirements regarding the content and timing of resolution submissions, as well as interim supplements to those submissions provided to the FDIC. Under the proposal, IDIs with $100 billion or more in total assets, including GS Bank USA, would submit full resolution plans biennially.

The U.S. federal bank regulatory agencies have adopted rules imposing restrictions on qualified financial contracts (QFCs) entered into by G-SIBs. The rules are intended to facilitate the orderly resolution of a failed G-SIB by limiting the ability of the G-SIB to enter into a QFC unless (i) the counterparty waives certain default rights in such contract arising upon the entry of the G-SIB or one of its affiliates into resolution, (ii) the contract does not contain enumerated prohibitions on the transfer of such contract and/or any related credit enhancement, and (iii) the counterparty agrees that the contract will be subject to the special resolution regimes set forth in the Dodd-Frank Act orderly liquidation authority (OLA) and the Federal Deposit Insurance Act of 1950 (FDIA), described below. GS Bank USA has achieved compliance by adhering to the International Swaps and Derivatives Association Universal Resolution Stay Protocol (ISDA Universal Protocol) and International Swaps and Derivatives Association 2018 U.S. Resolution Stay Protocol (U.S. ISDA Protocol) described below.

Certain of our other subsidiaries also adhere to these protocols. The ISDA Universal Protocol imposes a stay on certain cross-default and early termination rights within standard ISDA derivative contracts and securities financing transactions between adhering parties in the event that one of them is subject to resolution in its home jurisdiction, including a resolution under OLA or the FDIA in the U.S. The U.S. ISDA Protocol, which was based on the ISDA Universal Protocol, was created to allow market participants to comply with the final QFC rules adopted by the federal bank regulatory agencies.

The E.U. Bank Recovery and Resolution Directive (BRRD), as amended by the BRRD II, establishes a framework for the recovery and resolution of financial institutions in the E.U., such as GSBE. The BRRD provides national supervisory authorities with tools and powers to pre-emptively address potential financial crises in order to promote financial stability and minimize taxpayers' exposure to losses. The BRRD requires E.U. member states to grant certain resolution powers to national and, where relevant, E.U. resolution authorities, including the power to impose a temporary stay and to recapitalize a failing entity by writing down its unsecured debt or converting its unsecured debt into equity. Financial institutions in the E.U. must provide that contracts governed by non-E.U. law recognize those temporary stay and bail-in powers unless doing so would be impracticable. GSBE is under the direct authority of the Single Resolution Board for resolution planning. E.U. law requires financial institutions in the E.U., including subsidiaries of non-E.U. groups, to submit recovery plans and to assist the relevant resolution authority in constructing resolution plans for the E.U. entities. GSBE's primary regulator with respect to recovery planning is the ECB, and it is also regulated by BaFin and Deutsche Bundesbank.

The U.K. Special Resolution Regime confers substantially the same powers on the Bank of England, as the U.K. resolution authority, and substantially the same requirements on U.K. financial institutions. Further, certain U.K. financial institutions, including GSI and GSIB, are required to meet the Bank of England's expectations contained in the U.K. Resolution Assessment Framework, including with respect to loss absorbency, contractual stays, operational continuity and funding in resolution. They are also required by the PRA to submit solvent wind-down plans on how they could be wound down in a stressed environment. The PRA is also the regulatory authority in the U.K. that supervises recovery planning, and GSI and GSIB are each required to submit recovery plans to the PRA.

Total Loss-Absorbing Capacity (TLAC). The FRB's TLAC rule, among other things, establishes minimum TLAC requirements and establishes minimum requirements for "eligible long-term debt" (i.e., debt that is unsecured, has a maturity of at least one year from issuance and satisfies certain additional criteria). In August 2023, the FRB proposed to introduce a minimum denomination requirement for eligible long-term debt, among other changes.

The rule also prohibits a BHC that has been designated as a U.S. G-SIB from (i) guaranteeing subsidiaries' liabilities that are subject to early termination provisions if the BHC enters into an insolvency or receivership proceeding, subject to an exception for guarantees permitted by rules of the U.S. federal banking agencies imposing restrictions on QFCs; (ii) incurring liabilities guaranteed by subsidiaries; (iii) issuing short-term debt to third parties; or (iv) entering into derivatives and certain other financial contracts with external counterparties.

Additionally, the rule caps, at 5% of the value of the parent company's eligible TLAC, the amount of unsecured non-contingent third-party liabilities that are not eligible long-term debt that could rank equally with or junior to eligible long-term debt.

The CRR, the BRRD and U.K. financial services regime also impose minimum TLAC requirements on G-SIBs. For example, the CRR requires E.U. subsidiaries of a non-E.U. G-SIB that exceed the threshold of 5% of the G-SIB's RWAs, operating income or leverage exposure, such as GSBE, to meet internal TLAC requirements. Under the U.K. financial services regime, GSG UK exceeds the applicable thresholds and therefore, it is subject to internal TLAC requirements.

The CRD required a non-E.U. group with more than €40 billion of assets in the E.U., such as us, to establish an E.U. intermediate holding company (E.U. IHC) by December 30, 2023 if it has, as in our case, two or more of certain types of E.U. financial institution subsidiaries, including broker-dealers and banks. A non-E.U. group may have two E.U. IHCs if a request for a second is approved, and in September 2023, the ECB granted GSBE and GSPIC an exemption to operate under two E.U. IHCs. The CRR requires E.U. IHCs to satisfy capital and liquidity requirements, a minimum requirement for own funds and eligible liabilities (MREL), and certain other prudential requirements at a consolidated level. The U.K. has not implemented a similar requirement to establish an IHC; however, the PRA has introduced a requirement that certain U.K. financial holding companies or a designated U.K. group entity be responsible for the U.K. group's regulatory compliance. We have designated GSI for that responsibility.

The BRRD II and the U.K. resolution regime subject institutions to an MREL, which is generally consistent with the Financial Stability Board's (FSB's) TLAC standard. GSI is required to maintain a minimum level of internal MREL and provide the Bank of England the right to exercise bail-in triggers over certain intercompany regulatory capital and senior debt instruments issued by GSI. These triggers enable the Bank of England to write down such instruments or convert such instruments to equity. The triggers can be exercised by the Bank of England if it determines that GSI has reached the point of non-viability and the FRB and the FDIC have not objected to the bail-in or if Group Inc. enters bankruptcy or similar proceedings. The Single Resolution Board imposes internal MREL requirements applicable to GSBE.

Insolvency of a BHC or IDI. The Dodd-Frank Act created a resolution regime, OLA, for BHCs and their affiliates that are systemically important. Under OLA, the FDIC may be appointed as receiver for the systemically important institution and its failed non-bank subsidiaries if, upon the recommendation of applicable regulators, the U.S. Secretary of the Treasury determines, among other things, that the institution is in default or in danger of default, that the institution's failure would have serious adverse effects on the U.S. financial system and that resolution under OLA would avoid or mitigate those effects.

If the FDIC is appointed as receiver under OLA, then the powers of the receiver, and the rights and obligations of creditors and other parties who have dealt with the institution, would be determined under OLA, and not under the bankruptcy or insolvency law that would otherwise apply. The powers of the receiver under OLA are generally based on the powers of the FDIC as receiver for depository institutions under the FDIA, described below.

Substantial differences in the rights of creditors exist between OLA and the U.S. Bankruptcy Code, including the right of the FDIC under OLA to disregard the strict priority of creditor claims in some circumstances, the use of an administrative claims procedure to determine creditors' claims (as opposed to the judicial procedure utilized in bankruptcy proceedings), and the right of the FDIC to transfer claims to a "bridge" entity. In addition, OLA limits the ability of creditors to enforce certain contractual cross-defaults against affiliates of the institution in receivership. The FDIC has issued a notice that it would likely resolve a failed FHC by transferring its assets to a "bridge" holding company under its "single point of entry" or "SPOE" strategy pursuant to OLA.

Under the FDIA, if the FDIC is appointed as conservator or receiver for an IDI such as GS Bank USA, upon its insolvency or in certain other events, the FDIC has broad powers, including the power:

- To transfer any of the IDI's assets and liabilities to a new obligor, including a newly formed "bridge" bank, without the approval of the depository institution's creditors;
- To enforce the IDI's contracts pursuant to their terms without regard to any provisions triggered by the appointment of the FDIC in that capacity; or
- To repudiate or disaffirm any contract or lease to which the IDI is a party, the performance of which is determined by the FDIC to be burdensome and the repudiation or disaffirmance of which is determined by the FDIC to promote the orderly administration of the IDI.

In addition, the claims of holders of domestic deposit liabilities and certain claims for administrative expenses against an IDI would be afforded a priority over other general unsecured claims, including deposits at non-U.S. branches and claims of debtholders of the IDI, in the "liquidation or other resolution" of such an institution by any receiver. As a result, whether or not the FDIC ever sought to repudiate any debt obligations of GS Bank USA, the debtholders (other than depositors at U.S. branches) would be treated differently from, and could receive, if anything, substantially less than, the depositors at U.S. branches of GS Bank USA.

Deposit Insurance. Deposits at GS Bank USA have the benefit of FDIC insurance up to the applicable limits. The FDIC's Deposit Insurance Fund is funded by assessments on IDIs. GS Bank USA's assessment (subject to adjustment by the FDIC) is currently based on its average total consolidated assets less its average tangible equity during the assessment period, its supervisory ratings and specified forward-looking financial measures used to calculate the assessment rate. In addition, the FDIC must recover, by special assessment, losses to the FDIC deposit insurance fund as a result of the FDIC's use of the systemic risk exception to the least cost resolution test under the FDIA. See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations — Operating Expenses" in Part II, Item 7 of this Form 10-K for information about the estimated impact of the FDIC special assessment fee. The deposits of GSBE are covered by the German statutory deposit protection program to the extent provided by law. In addition, GSBE has elected to participate in the German voluntary deposit protection program which provides further insurance for certain eligible deposits beyond the coverage of the German statutory deposit program. Eligible deposits at GSIB and the London branch of GS Bank USA are covered by the U.K. Financial Services Compensation Scheme up to the applicable limits.

Prompt Corrective Action. The U.S. Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) requires the U.S. federal bank regulatory agencies to take "prompt corrective action" in respect of depository institutions that do not meet specified capital requirements. FDICIA establishes five capital categories for FDIC-insured banks, such as GS Bank USA: well-capitalized, adequately capitalized, undercapitalized, significantly undercapitalized and critically undercapitalized.

An institution may be downgraded to, or deemed to be in, a capital category that is lower than is indicated by its capital ratios if it is determined to be in an unsafe or unsound condition or if it receives an unsatisfactory examination rating with respect to certain matters. FDICIA imposes progressively more restrictive constraints on operations, management and capital distributions, as the capital category of an institution declines. Failure to meet the capital requirements could also require a depository institution to raise capital. Ultimately, critically undercapitalized institutions are subject to the appointment of a receiver or conservator, as described in "Insolvency of an IDI or a BHC" above.

The prompt corrective action regulations do not apply to BHCs. However, the FRB is authorized to take appropriate action at the BHC level, based upon the undercapitalized status of the BHC's depository institution subsidiaries. In certain instances, relating to an undercapitalized depository institution subsidiary, the BHC would be required to guarantee the performance of the undercapitalized subsidiary's capital restoration plan and might be liable for civil money damages for failure to fulfill its commitments on that guarantee. Furthermore, in the event of the bankruptcy of the BHC, the guarantee would take priority over the BHC's general unsecured creditors, as described in "Source of Strength" above.

Volcker Rule and Other Restrictions on Activities. As a BHC, we are subject to limitations on the types of business activities in which we may engage.

Volcker Rule. The Volcker Rule prohibits "proprietary trading," but permits activities such as underwriting, market making and risk-mitigation hedging, requires an extensive compliance program and includes additional reporting and record-keeping requirements.

In addition, the Volcker Rule limits the sponsorship of, and investment in, "covered funds" (as defined in the rule) by banking entities, including us. It also limits certain types of transactions between us and our sponsored and advised funds, similar to the limitations on transactions between depository institutions and their affiliates. Covered funds include our private equity funds, certain of our credit and real estate funds, our hedge funds and certain other investment structures. The limitation on investments in covered funds requires us to limit our investment in each such fund to 3% or less of the fund's net asset value, and to limit our aggregate investment in all such funds to 3% or less of our Tier 1 capital.

Other Restrictions. FHCs generally can engage in a broader range of financial and related activities than are otherwise permissible for BHCs as long as they continue to meet the eligibility requirements for FHCs. The broader range of permissible activities for FHCs includes underwriting, dealing and making markets in securities and making investments in non-FHCs (merchant banking activities). In addition, certain FHCs, including us, are permitted to engage in certain commodities activities in the U.S. that may otherwise be impermissible for BHCs, so long as the assets held pursuant to these activities do not equal 5% or more of their consolidated assets.

The FRB, however, has the authority to limit an FHC's ability to conduct activities that would otherwise be permissible, and will likely do so if the FHC does not satisfactorily meet certain requirements of the FRB. For example, if an FHC or any of its U.S. depository institution subsidiaries ceases to maintain its status as well-capitalized or well-managed, the FRB may impose corrective capital and/or managerial requirements, as well as additional limitations or conditions. If the deficiencies persist, the FHC may be required to divest its U.S. depository institution subsidiaries or to cease engaging in activities other than the business of banking and certain closely related activities.

In addition, we are required to obtain prior FRB approval before certain acquisitions and before engaging in certain banking and other financial activities both within and outside the U.S.

U.S. G-SIBs, like us, are also required to comply with a rule regarding single counterparty credit limits, which imposes more stringent requirements for credit exposures among major financial institutions.

The New York State banking law imposes lending limits (which take into account credit exposure from derivative transactions) and other requirements that could impact the manner and scope of GS Bank USA's activities.

The U.S. federal bank regulatory agencies have issued guidance that focuses on transaction structures and risk management frameworks and that outlines high-level principles for safe-and-sound leveraged lending, including underwriting standards, valuation and stress testing. This guidance has, among other things, limited the percentage amount of debt that can be included in certain transactions.

As a German credit institution, GSBE is subject to Volcker Rule-type prohibitions under German banking law and regulations because its financial assets exceed certain thresholds. Prohibited activities include (i) proprietary trading, (ii) high-frequency trading at a German trading venue, and (iii) lending and guarantee businesses with German hedge funds, German funds of hedge funds or any non-German substantially leveraged alternative investment funds, unless an exclusion or an exemption applies.

As part of its implementation of the Basel III Revisions, the E.U. is introducing new restrictions on the provision of certain "core" banking services cross-border into the E.U. and new requirements on E.U. branches of third-country banks, such as the German branch of GSIB.

U.K. banks that have over £25 billion of core retail deposits are required to separate their retail banking services from their investment and international banking activities, commonly known as "ring-fencing." GSIB is not currently subject to the ring-fencing requirement. In September 2023, the treasury department of the U.K. government proposed to increase the ring-fencing deposit threshold from £25 billion to £35 billion of core retail deposits.

Community Reinvestment Act (CRA). In 2023, GS Bank USA ceased to be assessed as a "wholesale bank" for CRA and New York Community Reinvestment Act (NYCRA) compliance purposes. GS Bank USA instead adopted a strategic plan that was approved by the FRB and NYDFS. The 2023 strategic plan will be in effect through 2028. While the plan is in effect, its terms will not be impacted by the revised federal CRA regulations, jointly published by the FDIC, FRB, and OCC in October 2023. The revised federal CRA regulations tailor CRA evaluations to bank size and type, with many of the changes applying only to banks with over $2 billion in assets and several applying only to banks with over $10 billion in assets, including GS Bank USA.

The CRA does not establish specific lending requirements or programs for financial institutions nor does it limit an institution's discretion to develop the types of products and services that it believes are best suited to its particular community, but depository institutions may only receive CRA credit for certain types of lending and for lending, investments and services that support community development, as defined in the CRA regulations. The CRA and its regulations require each appropriate federal bank regulatory agency, in connection with its examination of a depository institution, to assess such institution's record of meeting the credit needs of the communities served by that institution, including the needs of low- and moderate-income borrowers and neighborhoods, and to make such assessment available to the public.

The assessment also is part of the FRB's consideration of applications to acquire, merge or consolidate with another banking institution or its holding company, to assume deposits of or acquire assets from another depository institution, to establish a new domestic branch office that will accept deposits, or to relocate an office. In the case of a BHC applying for approval to acquire a bank or another BHC, the FRB will assess the records of performance under the CRA of the IDIs involved in the transaction, and such records may be the basis for denying the application.

If GS Bank USA fails to maintain at least a "satisfactory" rating under the CRA, it would be subject to restrictions on certain new activities and acquisitions.

We are also subject to provisions of the New York Banking Law that impose continuing and affirmative obligations upon New York State-chartered banks, such as GS Bank USA, to serve the credit needs of its local community (NYCRA). Such obligations are substantially similar to those imposed by the CRA. The NYCRA requires the NYDFS to make a periodic written assessment of an institution's compliance with the NYCRA, and to make such assessment available to the public. The NYCRA also requires the NYDFS to consider the NYCRA rating when reviewing an application to engage in certain transactions, including mergers, asset purchases and the establishment of domestic branch offices, and provides that such assessment may serve as a basis for the denial of any such application.

Broker-Dealer and Securities Regulation

Our broker-dealer subsidiaries, including GS&Co., are subject to regulations that cover all aspects of the securities business, including sales methods, trade practices, the use and safekeeping of clients' funds and securities, capital structure, record-keeping, the financing of clients' purchases, and the conduct of directors, officers and employees. In the U.S., the SEC is the federal agency responsible for the administration of the federal securities laws.

U.S. state securities and other U.S. regulators also have regulatory or oversight authority over GS&Co. For a description of net capital requirements applicable to GS&Co., see "Management's Discussion and Analysis of Financial Condition and Results of Operations — Capital Management and Regulatory Capital — Subsidiary Capital Requirements — U.S. Regulated Broker-Dealer Subsidiaries" in Part II, Item 7 of this Form 10-K.

The SEC has adopted a rule, effective January 2, 2024, that requires lenders of securities to provide the material terms of securities lending transactions to FINRA and for FINRA to make certain terms publicly available. Reporting under this rule will be required beginning in January 2026.

The SEC requires broker-dealers to act in the best interest of their retail customers. SEC rules require broker-dealers to provide a standardized, short-form disclosure highlighting services offered, applicable standards of conduct, fees and costs, the differences between brokerage and advisory services, and any conflicts of interest. In addition, several states have adopted or proposed adopting uniform fiduciary duty standards applicable to broker-dealers.

In December 2022, the SEC issued four proposals to reform the U.S. equity market structure. The SEC proposed establishing a broker-dealer best execution standard, which would require broker-dealers to use reasonable diligence to ascertain the best market for a customer order so that the resultant price to the customer is as favorable as possible under prevailing market conditions. The best execution standard applies to all securities and supplements, but does not replace, the existing FINRA and Municipal Securities Rulemaking Board (MSRB) best execution rules. The SEC also proposed, among other things, to require that individual investor orders routed through broker-dealers be exposed to order-by-order competition in qualified auctions; to update the minimum pricing increments, with variable price increments based on the trading characteristics of stocks; and to revise and expand reporting and disclosure requirements relating to execution quality.

In June 2023, FINRA issued a proposal that would require certain broker-dealers, including GS&Co. to meet certain liquidity requirements and to establish a liquidity risk management program, including conducting liquidity stress testing and maintaining a contingency funding plan, and comply with notification and reporting requirements.

The SEC, FINRA and regulators in various non-U.S. jurisdictions have imposed both conduct-based and disclosure-based requirements with respect to research reports and research analysts and may impose additional regulations.

In November 2023, the SEC adopted a rule that prohibits participants involved in the creation of asset-backed securities, including any underwriter, placement agent, initial purchaser or sponsor of an asset-backed security (or any affiliate or subsidiary), from engaging in any transaction that involves or results in a material conflict of interest between the securitization participant and an investor in an asset-backed security, including reducing its exposure to the asset-backed securities, subject to certain exceptions.

In December 2023, the SEC adopted a rule that necessitates SEC-registered clearing agencies to set up policies and procedures that would, among other things, require many market participants to clear cash and repurchase treasury securities transactions through such a clearing agency by December 2025 for cash transactions and by June 2026 for repurchase transactions.

GS&Co. and other U.S. subsidiaries are also subject to rules adopted by U.S. federal agencies pursuant to the Dodd-Frank Act that require any person who organizes or initiates certain asset-backed securities transactions to retain a portion (generally, at least five percent) of any credit risk that the person conveys to a third party. For certain securitization transactions, retention by third-party purchasers may satisfy this requirement.

In Europe, we provide broker-dealer services, including through GSBE, GSPIC and GSI, that are subject to oversight by European and national regulators. These services are regulated in accordance with E.U., U.K. and other national laws and regulations. These laws require, among other things, compliance with certain capital adequacy and liquidity standards, customer protection requirements and market conduct and trade reporting rules. Certain of our European subsidiaries are also regulated by the securities, derivatives and commodities exchanges of which they are members.

In the E.U. and the U.K., the European Markets in Financial Instruments Directive (MiFID II) and the European Markets in Financial Instruments Regulation (MiFIR) established trading venue categories for the purposes of discharging the obligation to trade OTC derivatives on a trading platform, enhanced pre- and post-trade transparency covering a wide range of financial instruments, placed volume caps on non-transparent liquidity trading for equities trading venues, limited the use of broker-dealer equities crossing networks and created a regime for systematic internalizers, which are investment firms that execute client equity transactions outside a trading venue. Additional control requirements apply to algorithmic trading, high frequency trading and direct electronic access. Commodities trading firms are required to calculate their positions and adhere to specific position limits. MiFID II and MiFIR also require enhanced transaction reporting, the publication of best execution data by investment firms and trading venues, transparency on costs and charges of service to investors, restrictions on the way investment managers can pay for the receipt of investment research, rules limiting the payment and receipt of soft commissions and other forms of inducements, and mandatory unbundling for broker-dealers between execution and other major services. Certain of our non-U.S. subsidiaries, including GSBE and GSI, are subject to risk retention requirements in connection with securitization activities.

GSJCL, our regulated Japanese broker-dealer, is subject to capital requirements imposed by Japan's Financial Services Agency. GSJCL is also regulated by the Tokyo Stock Exchange, the Bank of Japan and the Ministry of Finance, among others.

The Securities and Futures Commission in Hong Kong, the China Securities Regulatory Commission, the Reserve Bank of India, the Securities and Exchange Board of India, the Australian Securities and Investments Commission, the Australian Securities Exchange, the Monetary Authority of Singapore, the Korean Financial Supervisory Service and the Central Bank of Brazil, among others, regulate various of our subsidiaries and also have capital standards and other requirements comparable to the rules of the U.S. regulators.

Our exchange-based market-making activities are subject to extensive regulation by a number of securities exchanges. As a market maker on exchanges, we are required to maintain orderly markets in the securities to which we are assigned.

Swaps, Derivatives and Commodities Regulation

The commodity futures, commodity options and swaps industry in the U.S. is subject to regulation under the U.S. Commodity Exchange Act (CEA). The CFTC is the U.S. federal agency charged with the administration of the CEA. In addition, the SEC is the U.S. federal agency charged with the regulation of security-based swaps. The rules and regulations of various self-regulatory organizations, such as the Chicago Mercantile Exchange, other futures exchanges and the National Futures Association (NFA), also govern commodity futures, commodity options and swaps activities.

The terms “swaps” and “security-based swaps” include a wide variety of derivative instruments in addition to those conventionally referred to as swaps (including certain forward contracts and options), and relate to a wide variety of underlying assets or obligations, including currencies, commodities, interest or other monetary rates, yields, indices, securities, credit events, loans and other financial obligations.

CFTC rules require registration of swap dealers, mandatory clearing and execution of interest rate and credit default swaps and real-time public reporting and adherence to business conduct standards for all in-scope swaps. A number of these requirements, particularly those regarding recordkeeping and reporting, also apply to transactions that do not involve a registered swap dealer. GS&Co. and other subsidiaries, including GS Bank USA, GSBE, GSI and J. Aron, are registered with the CFTC as swap dealers. The CFTC has rules establishing capital requirements for swap dealers that are not subject to the capital rules of a prudential regulator, such as the FRB. The CFTC also has financial reporting requirements for covered swap entities and capital rules for CFTC-registered futures commission merchants that provide explicit capital requirements for proprietary positions in swaps and security-based swaps that are not cleared by a clearing organization. Certain of our registered swap dealers, including J. Aron, are subject to the CFTC’s capital requirements.

Our affiliates registered as swap dealers are subject to the margin rules issued by the CFTC (in the case of our non-bank swap dealers) and the FRB (in the case of GS Bank USA and GSBE). Inter-affiliate transactions under the CFTC and FRB margin rules are generally exempt from initial margin requirements.

Our affiliates registered as swap dealers are also subject to NFA regulation, including requirements pertaining to cybersecurity and supervision, and the NFA examines them for compliance with these requirements as well as compliance with CFTC rules.

SEC rules govern the registration and regulation of security-based swap dealers. Security-based swaps are defined as swaps on single securities, single loans or narrow-based baskets or indices of securities. The SEC has adopted a number of rules for security-based swap dealers, including (i) capital, margin and segregation requirements; (ii) record-keeping, financial reporting and notification requirements; (iii) business conduct standards; (iv) regulatory and public trade reporting; and (v) the application of risk mitigation techniques to uncleared portfolios of security-based swaps. Certain of our subsidiaries, including GS&Co., GS Bank USA and GSBE, are registered with the SEC as security-based swap dealers and subject to the SEC’s regulations regarding security-based swaps. The SEC has proposed additional regulations regarding security-based swaps that would, among other things, require public reporting of large positions in security-based swaps.

GS Bank USA and GSBE are also subject to the FRB’s swaps margin rules. These rules require the exchange of initial and variation margin in connection with transactions in swaps and security-based swaps that are not cleared through a registered or exempt clearinghouse. GS Bank USA and GSBE are required to post and collect margin in connection with transactions with swap dealers, security-based swap dealers, major swap participants and major security-based swap participants, or financial end users.

The CFTC and the SEC have adopted rules relating to cross-border regulation of swaps and security-based swaps, and business conduct and registration requirements. The CFTC and the SEC have entered into agreements with certain non-U.S. regulators regarding the cross-border regulation of derivatives and the mutual recognition of cross-border execution facilities and clearinghouses, and have approved substituted compliance with certain non-U.S. regulations related to certain business conduct requirements and margin rules, among other requirements. The U.S. prudential regulators have not yet made a determination with respect to substituted compliance for transactions subject to non-U.S. margin rules.

Similar types of regulation have been proposed or adopted in jurisdictions outside the U.S., including in the E.U. and Japan. Under the European Market Infrastructure Regulation (EMIR), for example, the E.U. and the U.K. have established regulatory requirements relating to portfolio reconciliation and reporting, clearing certain OTC derivatives and margining for uncleared derivatives activities. In addition, under the European Markets in Financial Instruments Directive and Regulation, transactions in certain types of derivatives are required to be executed on regulated platforms or exchanges.

The CFTC has adopted rules that limit the size of positions in physical commodity derivatives that can be held by any entity, or any group of affiliates or other parties trading under common ownership or control. The CFTC position limits apply to futures on physical commodities and options on such futures, apply to both physically and cash settled positions and to swaps that are economically equivalent to such futures and options. The position limit rules initially impose limits in the spot month only (i.e., during the delivery period for the physical commodities, which is typically a period of several days). CFTC spot and non-spot month limits will continue to apply to futures on certain legacy agricultural commodities.

J. Aron is authorized by the U.S. Federal Energy Regulatory Commission (FERC) to sell wholesale physical power at market-based rates. As a FERC-authorized power marketer, J. Aron is subject to regulation under the U.S. Federal Power Act and FERC regulations and to the oversight of FERC. As a result of our investing activities, Group Inc. is also an "exempt holding company" under the U.S. Public Utility Holding Company Act of 2005 and applicable FERC rules.

In addition, as a result of our power-related and commodities activities, we are subject to energy, environmental and other governmental laws and regulations, as described in "Risk Factors — Legal and Regulatory — Our commodities activities, particularly our physical commodities activities, subject us to extensive regulation and involve certain potential risks, including environmental, reputational and other risks that may expose us to significant liabilities and costs" in Part I, Item 1A of this Form 10-K.

GS&Co. is registered with the CFTC as a futures commission merchant, and several of our subsidiaries, including GS&Co., are registered with the CFTC and act as commodity pool operators and commodity trading advisors. Goldman Sachs Financial Markets, L.P. is registered with the SEC as an OTC derivatives dealer.

Asset Management and Wealth Management Regulation

Our asset management and wealth management businesses are subject to extensive oversight by regulators around the world relating to, among other things, the fair treatment of clients, safeguarding of client assets, offerings of funds, marketing activities, transactions among affiliates and our management of client funds.

The federal securities laws impose fiduciary duties on investment advisers, including GS&Co., Goldman Sachs Asset Management, L.P. and our other U.S. registered investment adviser subsidiaries. Additionally, SEC rules require investment advisers to provide a standardized, short-form disclosure highlighting services offered, applicable standards of conduct, fees and costs, the differences between brokerage and advisory services, and any conflicts of interest. Several states have adopted or proposed adopting uniform fiduciary duty standards applicable to advisers.

In November 2022, the SEC proposed, among other things, amendments to the rules governing liquidity risk management and swing pricing of open-end management investment companies such as mutual funds.

In August 2023, the SEC adopted final private fund adviser reform rules under the Investment Advisers Act of 1940 requiring for the first time private fund advisers registered with the SEC to, among other things, provide investors with quarterly (within 45 days, or 75 days for fund of funds, after the end of each of the first three fiscal quarters) and annual (within 90 days, or 120 days for fund of funds, after the end of each fiscal year) statements detailing information regarding private fund performance, fees and expenses; obtain an annual audit for each private equity fund; and obtain a fairness opinion or valuation opinion in connection with an adviser-led secondary transaction. The dates by which private fund advisers must achieve compliance vary by specific rule, with compliance dates through March 2025. Timely compliance with these new quarterly and annual reporting requirements will require us to create or enhance systems and disclosure controls and procedures.

The SEC has also adopted a rule that requires certain institutional investment managers that meet or exceed certain specified reporting thresholds to report on a monthly basis specific short position data and short activity data for equity securities. Reporting under this rule will be required beginning in January 2025.

Certain of our European subsidiaries, including GSBE in the E.U. and GSAMI in the U.K., are subject to MiFID II and/or related regulations (including the U.K. legislation making such regulations part of U.K. law), which govern the approval, organizational, marketing and reporting requirements of E.U. or U.K.-based investment managers and the ability of investment fund managers located outside the E.U. or the U.K. to access those markets. Goldman Sachs Asset Management BV is subject to similar requirements as a management company licensed under the E.U. Undertakings for Collective Investment in Transferable Securities (UCITS) Directive and the E.U. Alternative Investment Fund Managers (AIFM) Directive with additional authorizations for certain activities regulated under MiFID II. Our asset management business in the E.U. and the U.K. significantly depends on our ability to delegate parts of our activities to other affiliates.

GSAMI is also subject to the prudential regime for U.K. investment firms, the Investment Firms Prudential Regime, which governs the prudential requirements for U.K. investment firms prudentially regulated by the FCA.

Consumer Regulation

Our U.S. consumer-oriented activities are subject to supervision and regulation by the CFPB with respect to federal consumer protection laws, including laws relating to fair lending and the prohibition of unfair, deceptive or abusive acts or practices in connection with the offer, sale or provision of consumer financial products and services. Our consumer-oriented activities are also subject to various state and local consumer protection laws, rules and regulations, which, among other things, impose obligations relating to marketing, origination, servicing and collections activities in our consumer businesses. Many of these laws, rules and regulations also apply to our small business lending activities, which are also subject to supervision and regulation by federal and state regulators. In addition, our U.K. consumer deposit-taking activities are subject to U.K. consumer protection laws and regulations.

Compensation Practices

Our compensation practices are subject to oversight by the FRB and, with respect to some of our subsidiaries and employees, by other regulatory bodies worldwide.

The FSB has released standards for implementation by local regulators that are designed to encourage sound compensation practices at banks and other financial companies. The U.S. federal bank regulatory agencies have also provided guidance designed to ensure that incentive compensation arrangements at banking organizations take into account risk and are consistent with safe and sound practices. The guidance sets forth the following three key principles with respect to incentive compensation arrangements: (i) the arrangements should provide employees with incentives that appropriately balance risk and financial results in a manner that does not encourage employees to expose their organizations to imprudent risk; (ii) the arrangements should be compatible with effective controls and risk management; and (iii) the arrangements should be supported by strong corporate governance. The guidance provides that supervisory findings with respect to incentive compensation will be incorporated, as appropriate, into the organization's supervisory ratings, which can affect its ability to make acquisitions or perform other actions. The guidance also notes that enforcement actions may be taken against a banking organization if its incentive compensation arrangements or related risk management, control or governance processes pose a risk to the organization's safety and soundness.

The Dodd-Frank Act requires U.S. financial regulators, including the FRB and SEC, to adopt rules on incentive-based payment arrangements at specified regulated entities having at least $1 billion in total assets. The U.S. financial regulators proposed revised rules in 2016, which have not been finalized. In accordance with an SEC rule, securities exchanges have adopted rules mandating, in the case of a restatement, the recovery or "clawback" of excess incentive-based compensation paid to current or former executive officers and requiring listed issuers to disclose any recovery analysis where recovery is triggered by a restatement.

The NYDFS' guidance emphasizes that any incentive compensation arrangements tied to employee performance indicators at banking institutions regulated by the NYDFS, including GS Bank USA, must be subject to effective risk management, oversight and control.

In the E.U., certain provisions in the CRR and CRD are designed to meet the FSB's compensation standards. These provisions limit the ratio of variable to fixed compensation of all employees at GSBE and of certain employees at our other operating subsidiaries in the E.U., including those employees identified as having a material impact on the risk profile of regulated entities. CRR II and CRD V amended certain aspects of these rules, including, by increasing minimum variable compensation deferral periods.

The E.U. and the U.K. have each also introduced investment firm regimes, including rules regulating compensation for certain persons providing services to certain investment funds.

Anti-Money Laundering and Anti-Bribery Rules and Regulations

The U.S. Bank Secrecy Act, as amended (BSA), including by the USA PATRIOT Act of 2001, contains anti-money laundering and financial transparency laws and authorizes or mandates the promulgation of various regulations applicable to financial institutions, including standards for verifying client identification at account opening, and obligations to monitor client transactions and report suspicious activities. Through these and other provisions, the BSA seeks, among other things, to promote the identification of parties that may be involved in terrorism, money laundering or other suspicious activities.

The Anti-Money Laundering Act of 2020 (AMLA), which amends the BSA, is intended to comprehensively reform and modernize U.S. anti-money laundering laws. Among other things, the AMLA codifies a risk-based approach to anti-money laundering compliance for financial institutions; requires the U.S. Department of the Treasury to periodically promulgate priorities for anti-money laundering and countering the financing of terrorism policy; requires the development of standards by the U.S. Department of the Treasury for testing technology and internal processes for BSA compliance; expands enforcement- and investigation-related authority, including a significant expansion in the available sanctions for certain BSA violations; and expands BSA whistleblower incentives and protections. Many of the statutory provisions in the AMLA will require additional rulemakings, reports and other measures, and the impact of the AMLA will depend on, among other things, rulemaking and implementation guidance. The Financial Crimes Enforcement Network (FinCEN), a bureau of the U.S. Department of Treasury, has issued the priorities for anti-money laundering and countering the financing of terrorism policy, as required under the AMLA. The priorities include: corruption, cybercrime, terrorist financing, fraud, transnational crime, drug trafficking, human trafficking and proliferation financing.

We are subject to other laws and regulations worldwide relating to anti-money laundering and financial transparency, including the E.U. Anti-Money Laundering Directives. In addition, we are subject to the U.S. Foreign Corrupt Practices Act (FCPA), the U.K. Bribery Act and other laws and regulations worldwide regarding corrupt and illegal payments, or providing anything of value, for the benefit of government officials and others. The scope of the types of payments or other benefits covered by these laws is very broad. These laws and regulations include requirements relating to the identification of clients, monitoring for and reporting suspicious transactions, monitoring direct and indirect payments to politically exposed persons, providing information to regulatory authorities and law enforcement agencies, and sharing information with other financial institutions.

Privacy and Cybersecurity Regulation

Our businesses are subject to numerous laws and regulations relating to the privacy of information regarding clients, employees and others. These include, but are not limited to, the GLB Act, the California Consumer Privacy Act of 2018, as amended by the California Privacy Rights Act of 2020, the E.U.'s General Data Protection Regulation (GDPR), the U.K.'s Data Protection Act 2018 and U.K. GDPR, the Swiss Federal Data Protection Act, the Japanese Personal Information Protection Act, the Personal Information Protection Law of the People's Republic of China, and the Singapore Personal Data Protection Act. Generally, privacy laws impose obligations with regard to the collection, use and disclosure of personal information and require public disclosure of privacy practices. Some privacy laws offer individuals certain rights about how their personal information is processed, provide for significant penalties for non-compliance, and, under certain circumstances, impose requirements for transfers of personal data across national borders. Several non-U.S. jurisdictions have enacted, or are proposing, privacy and data protection laws, including India, which enacted a privacy protection law in August 2023.

In March 2023, the SEC proposed to amend Regulation S-P that implements the GLB Act and Regulation Systems Compliance and Integrity Regulation (SCI). The proposed amendments to Regulation S-P would require broker-dealers, investment companies and investment advisers registered with the SEC to adopt written policies and procedures for incident response programs to address unauthorized access to or use of customer information. The amended Regulation S-P would require covered entities to notify within 30 days individuals affected by an incident involving sensitive customer information and provide them with details about the incident and other information intended to help affected individuals respond appropriately. The proposed amendments to Regulation SCI would, among other things, expand the types of entities covered by the regulation, require additional policies and procedures to address cybersecurity risks, and require disclosure of additional types of cybersecurity events to the SEC.

Our businesses are also subject to laws and regulations governing cybersecurity and related risks, and which require regulatory disclosures, and, in some instances, individual disclosures, of certain security incidents. These include, but are not limited to, the NYDFS Cybersecurity Requirements for Financial Services Companies. The NYDFS also requires financial institutions regulated by the NYDFS, including GS Bank USA, to, among other things, (i) establish and maintain a cybersecurity program designed to ensure the confidentiality, integrity and availability of their information systems; (ii) implement and maintain a written cybersecurity policy setting forth policies and procedures for the protection of their information systems and nonpublic information; and (iii) designate a Chief Information Security Officer. On November 1, 2023, the NYDFS adopted amendments to its cybersecurity regulations that will impose heightened or additional requirements with respect to cybersecurity incident notifications, risk management and governance.

In January 2023, the E.U. Digital Operational Resilience Act (DORA) became effective and will apply from January 2025. DORA requires E.U. financial entities, such as GSBE, to have a comprehensive governance and control framework for the management of information and communications technology risk.

In October 2023, the CFPB issued a proposed rule regarding personal financial data rights that would apply to financial institutions that offer consumer deposit accounts such as GS Bank USA. Covered financial institutions would be required to provide consumers electronic access to 24 months of transaction data and certain account information under the proposed rule and would be prohibited from imposing any fees or charges for maintaining or providing access to such data. The proposed rule would also impose data accuracy, retention and other obligations. We will continue to evaluate the proposed rule and the impact on GS Bank USA.

See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Risk Management — Cybersecurity Risk Management" in Part II, Item 7 of this Form 10-K for further information about our cybersecurity risk management, strategy and governance.

Environmental, Social and Governance (ESG)

Policymakers, lawmakers and regulators in the U.S. and other jurisdictions have recently increased their focus on ESG-related risk oversight, disclosure, and practices at financial institutions and other companies.

In October 2023, the federal bank regulatory agencies jointly issued principles for climate-related financial risk management for large financial institutions, which apply to regulated financial institutions with more than $100 billion in total consolidated assets, including us. The principles are intended to support efforts by large financial institutions to focus on key aspects of climate-related financial risk management and consist of six general principles: (1) governance; (2) policies, procedures, and limits; (3) strategic planning; (4) risk management; (5) data, risk measurement, and reporting; and (6) scenario analysis. In September 2023, the SEC adopted amendments to Rule 35d-1 (Names Rule) under the Investment Company Act of 1940. The previous Names Rule generally required a fund with a name suggesting a focus in a particular type of investment, or in investments in a particular industry or geographic region, to adopt a policy to invest at least 80% of the value of its assets in the type of investment, or in investments in the industry, country or geographic region, suggested by its name. The amendments expand such 80% investment policy to apply to any fund name with terms suggesting that the fund focuses in investments that have, or investments whose issuers have, particular characteristics, including names that suggest the fund incorporates ESG factors in its investment decisions. In May 2022, the SEC proposed a rule that would require enhanced disclosures by certain investment advisers and investment companies about their ESG investment practices. In March 2022, the SEC proposed a rule on the enhancement and standardization of climate-related disclosures for investors. The proposal would require public issuers, including Group Inc., to significantly expand the scope of climate-related disclosures in their SEC filings.

Several states in which we operate have enacted or proposed statutes, regulations or guidance addressing climate change and other ESG issues. For example, in December 2022, the NYDFS proposed guidance on climate-related financial risk management applicable to NYDFS-regulated banking and mortgage organizations, including GS Bank USA. The proposed guidance would address material financial risks related to climate change faced by these organizations in the context of risk assessment, risk management, and risk appetite setting.

In December 2021, the FCA introduced mandatory Taskforce on Climate-related Financial Disclosures (TCFD)-aligned disclosure requirements for certain FCA-regulated firms. GSI and GSAMI published their first TCFD entity-level report for in-scope asset and wealth management activity due under these requirements in 2023. We continue to assess the impact of other ESG-related regulatory frameworks that will, or are proposed to, in the future apply to our FCA- and/or PRA-regulated subsidiaries, including the rules adopted by the FCA in December 2023 on sustainability disclosure requirements and investment labels. Our PRA-regulated banking subsidiaries are also subject to the PRA's supervisory expectations for the management of climate-related financial risks, including with respect to governance, risk management, scenario analysis and disclosure. Certain of our E.U. and non-E.U. entities will be subject to new sustainability-related laws being implemented by E.U. policymakers and member states. In particular, beginning with 2024 year-end reporting, we are subject to extensive disclosure requirements of the Corporate Sustainability Reporting Directive (CSRD). The CSRD will significantly expand the scope of ESG disclosure required of us. In addition, the E.U.'s proposed Corporate Sustainability Due Diligence Directive (CSDDD), if and when adopted, may subject certain of our E.U. and non-E.U. entities to additional due diligence obligations and governance requirements with respect to their own operations and activities of their external suppliers in their upstream value chain. Group Inc. will also be required to disclose its transition plan by 2030 (planned out in five-year increments) to align its business strategy with limiting global warming to 1.5°C. The CSDDD remains subject to finalization and adoption by E.U. policymakers, and we are continuing to evaluate its potential impact. Our regulated banking subsidiaries in the E.U. are also subject to supervisory expectations and potential enforcement actions for, among others, the management of climate-related financial risks and related disclosure.

Information about our Executive Officers

Set forth below are the name, age, present title, principal occupation and certain biographical information for the executive officers who have been appointed by, and serve at the pleasure of, Group Inc.'s Board.

Philip R. Berlinski, 47

Mr. Berlinski has been Global Treasurer since October 2021; he also serves as Chief Executive Officer of Goldman Sachs Bank USA and has served as interim Global Co-Head or Head of Platform Solutions since June 2023. He had previously served as Chief Operating Officer of Global Equities from May 2019. Prior to that, he was Co-Head of Global Equities Trading and Execution Services from September 2016 to May 2019.

Denis P. Coleman III, 50

Mr. Coleman has been Chief Financial Officer since January 2022. He had previously served as Deputy Chief Financial Officer from September 2021 and, prior to that, Co-Head of the Global Financing Group from June 2018 to September 2021. From 2016 to June 2018, he was Head of the EMEA Financing Group, and from 2009 to 2016 he was Head of EMEA Credit Finance in London.

Sheara J. Fredman, 48

Ms. Fredman has been Controller and Chief Accounting Officer since November 2019. She had previously served as Head of Regulatory Controllers from September 2017 and, prior to that, she had served as Global Product Controller.

Brian J. Lee, 57

Mr. Lee has been Chief Risk Officer since November 2019. He had previously served as Controller and Chief Accounting Officer from March 2017 and, prior to that, he had served as Deputy Controller from 2014.

John F.W. Rogers, 67

Mr. Rogers has been an Executive Vice President since April 2011 and Secretary to the Board since December 2001. He also served as Chief of Staff from December 2001 to September 2023.

Kathryn H. Ruemmler, 52

Ms. Ruemmler has been the Chief Legal Officer, General Counsel and Secretary since March 2021, and was previously Global Head of Regulatory Affairs from April 2020. From June 2014 to April 2020, Ms. Ruemmler was a Litigation Partner at Latham & Watkins LLP, a global law firm, where she was Global Chair of the White Collar Defense and Investigations practice.

David Solomon, 62
Mr. Solomon has been Chairman of the Board since January 2019 and Chief Executive Officer and a director since October 2018. He had previously served as President and Chief or Co-Chief Operating Officer from January 2017 and Co-Head of the Investment Banking Division from July 2006 to December 2016.

John E. Waldron, 54
Mr. Waldron has been President and Chief Operating Officer since October 2018. He had previously served as Co-Head of the Investment Banking Division from December 2014. Prior to that he was Global Head of Investment Banking Services/ Client Coverage for the Investment Banking Division and had oversight of the Investment Banking Services Leadership Group, and from 2007 to 2009 was Global Co-Head of the Financial Sponsors Group.

Available Information

Our internet address is www.goldmansachs.com and the investor relations section of our website is located at www.goldmansachs.com/investor-relations, where we make available, free of charge, our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as well as proxy statements, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Also posted on our website, and available in print upon request of any shareholder to our Investor Relations Department (Investor Relations), are our certificate of incorporation and by-laws, charters for our Audit, Risk, Compensation, Corporate Governance and Nominating, and Public Responsibilities Committees, our Policy Regarding Director Independence Determinations, our Policy on Reporting of Concerns Regarding Accounting and Other Matters, our Corporate Governance Guidelines and our Code of Business Conduct and Ethics governing our directors, officers and employees. Within the time period required by the SEC, we will post on our website any amendment to the Code of Business Conduct and Ethics and any waiver applicable to any executive officer, director or senior financial officer.

Our website also includes information about (i) purchases and sales of our equity securities by our executive officers and directors; (ii) disclosure relating to certain non-GAAP financial measures (as defined in the SEC's Regulation G) that we may make public orally, telephonically, by webcast, by broadcast or by other means; (iii) our U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act Stress Tests results; (iv) the public portion of our and GS Bank USA's resolution plan submissions; (v) our Pillar 3 disclosure; (vi) our average daily LCR; (vii) our People Strategy Report; (viii) our Sustainability Report; (ix) our TCFD Report; and (x) our average daily NSFR.

Investor Relations can be contacted at The Goldman Sachs Group, Inc., 200 West Street, 29th Floor, New York, New York 10282, Attn: Investor Relations, telephone: 212-902-0300, e-mail: gs-investor-relations@gs.com. We use the following, as well as other social media channels, to disclose public information to investors, the media and others:

- Our website (www.goldmansachs.com);
- Our X, formerly known as Twitter, account (x.com/GoldmanSachs); and
- Our Instagram account (instagram.com/GoldmanSachs).

Our officers may use similar social media channels to disclose public information. It is possible that certain information we or our officers post on our website and on social media could be deemed material, and we encourage investors, the media and others interested in Goldman Sachs to review the business and financial information we or our officers post on our website and on the social media channels identified above. The information on our website and those social media channels is not incorporated by reference into this Form 10-K.

Forward-Looking Statements

We have included in this Form 10-K, and our management may make, statements that constitute "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are not historical facts or statements of current conditions, but instead represent only our beliefs regarding future events, many of which, by their nature, are inherently uncertain and outside our control.

By identifying these statements for you in this manner, we are alerting you to the possibility that our actual results, financial condition, liquidity and capital actions may differ, possibly materially, from the anticipated results, financial condition, liquidity and capital actions in these forward-looking statements. Important factors that could cause our results, financial condition, liquidity and capital actions to differ from those in these statements include, among others, those described below and in "Risk Factors" in Part I, Item 1A of this Form 10-K.

These statements may relate to, among other things, (i) our future plans and results, including our target return on average common shareholders' equity (ROE), return on average tangible common shareholders' equity (ROTE), efficiency ratio, CET1 capital ratio and firmwide assets under supervision (AUS) inflows, and how they can be achieved, (ii) trends in or growth opportunities for our businesses, including the timing, costs, profitability, benefits and other aspects of business and strategic initiatives and their impact on our efficiency ratio, (iii) our level of future compensation expense, including as a percentage of both operating expenses and net revenues, net of provision for credit losses, (iv) our Investment banking fees backlog and future results, (v) our expected interest income and interest expense, (vi) our expense savings and strategic locations initiatives, (vii) expenses we may incur, including future litigation expense, (viii) the projected growth of our deposits and other funding, asset liability management and funding strategies and related interest expense savings, (ix) our business initiatives, including transaction banking, (x) our planned 2024 benchmark debt issuances, (xi) the amount, composition and location of global core liquid assets (GCLA) we expect to hold, (xii) our credit exposures, (xiii) our expected provision for credit losses, (xiv) the adequacy of our allowance for credit losses, (xv) the narrowing of our consumer business, (xvi) the objectives and effectiveness of our business continuity planning, information security program, risk management and liquidity policies, (xvii) our resolution plan and strategy and their implications for stakeholders, (xviii) the design and effectiveness of our resolution capital and liquidity models and triggers and alerts framework, (xix) the results of stress tests, the effect of changes to regulations, and our future status, activities or reporting under banking and financial regulation, (xx) our expected tax rate, (xxi) the future state of our liquidity and regulatory capital ratios, and our prospective capital distributions (including dividends and repurchases), (xxii) our expected SCB and G-SIB surcharge, (xxiii) legal proceedings, governmental investigations or other contingencies, (xxiv) the asset recovery guarantee and our remediation activities related to our 1Malaysia Development Berhad (1MDB) settlements, (xxv) the effectiveness of our management of our human capital, including our diversity goals, (xxvi) our sustainability and carbon neutrality targets and goals, (xxvii) future inflation, (xxviii) the impact of Russia's invasion of Ukraine and related sanctions and other developments on our business, results and financial position, (xxix) our ability to sell, and the terms of any proposed sales of, Asset & Wealth Management historical principal investments and pending sale of GreenSky, (xxx) our agreement with GM regarding a process to transition their credit card program to another issuer to be selected by GM, (xxxi) the impact of the conflicts in the Middle East, (xxxii) our ability to manage our commercial real estate exposures, (xxxiii) the profitability of Platform Solutions, and (xxxiv) the effectiveness of our cybersecurity risk management process.

Statements about our target ROE, ROTE, efficiency ratio and expense savings, and how they can be achieved, are based on our current expectations regarding our business prospects and are subject to the risk that we may be unable to achieve our targets due to, among other things, changes in our business mix, lower profitability of new business initiatives, increases in technology and other costs to launch and bring new business initiatives to scale, and increases in liquidity requirements.

Statements about our target ROE, ROTE and CET1 capital ratio, and how they can be achieved, are based on our current expectations regarding the capital requirements applicable to us and are subject to the risk that our actual capital requirements may be higher than currently anticipated because of, among other factors, changes in the regulatory capital requirements applicable to us resulting from changes in regulations, including as a result of the July 2023 proposal to revise the U.S. bank regulatory capital rules, or the interpretation or application of existing regulations or changes in the nature and composition of our activities. Statements about our firmwide AUS inflows targets are based on our current expectations regarding our fundraising prospects and are subject to the risk that actual inflows may be lower than expected due to, among other factors, competition from other asset managers, changes in investment preferences and changes in economic or market conditions.

Statements about the timing, costs, profitability, benefits and other aspects of business and expense savings initiatives, the level and composition of more durable revenues and increases in market share and the narrowing of our consumer business are based on our current expectations regarding our ability to implement these initiatives and actual results may differ, possibly materially, from our current expectations due to, among other things, a delay in the timing of these initiatives, increased competition and an inability to reduce expenses and grow businesses with durable revenues or to exit certain consumer businesses.

Statements about the level of future compensation expense, including as a percentage of both operating expenses and net revenues, net of provision for credit losses, and our efficiency ratio are subject to the risks that the compensation and other costs to operate our businesses may be greater than currently expected.

Statements about our Investment banking fees backlog and future results are subject to the risk that such transactions may be modified or may not be completed at all, and related net revenues may not be realized or may be materially less than expected. Important factors that could have such a result include, for underwriting transactions, a decline or weakness in general economic conditions, an outbreak or worsening of hostilities, including the escalation of the conflicts in the Middle East or the continuation of the conflict between Russia and Ukraine, continuing volatility in the securities markets or an adverse development with respect to the issuer of the securities and, for advisory transactions, a decline in the securities markets, an inability to obtain adequate financing, an adverse development with respect to a party to the transaction or a failure to obtain a required regulatory approval.

Statements about the projected growth of our deposits and other funding, asset liability management and funding strategies and related interest expense savings, and our platform solutions business, are subject to the risk that actual growth, savings and profitability may differ, possibly materially, from that currently anticipated due to, among other things, changes in interest rates and competition from other similar products.

Statements about planned 2024 benchmark debt issuances and the amount, composition and location of GCLA we expect to hold are subject to the risk that actual issuances and GCLA levels may differ, possibly materially, from that currently expected due to changes in market conditions, business opportunities or our funding and projected liquidity needs.

Statements about our expected provision for credit losses are subject to the risk that actual credit losses may differ and our expectations may change, possibly materially, from that currently anticipated due to, among other things, changes to the composition of our loan portfolio and changes in the economic environment in future periods and our forecasts of future economic conditions, as well as changes in our models, policies and other management judgments.

Statements about our future effective income tax rate are subject to the risk that it may differ from the anticipated rate indicated in such statements, possibly materially, due to, among other things, changes in the tax rates applicable to us, changes in our earnings mix, our profitability and entities in which we generate profits, the assumptions we have made in forecasting our expected tax rate, the interpretation or application of existing tax statutes and regulations, as well as any corporate tax legislation that may be enacted or any guidance that may be issued by the U.S. Internal Revenue Service or in the other jurisdictions in which we operate (including Global Anti-Base Erosion (Pillar II) guidance).

Statements about the future state of our liquidity and regulatory capital ratios (including our SCB and G-SIB surcharge), and our prospective capital distributions (including dividends and repurchases), are subject to the risk that our actual liquidity, regulatory capital ratios and capital distributions may differ, possibly materially, from what is currently expected due to, among other things, the need to use capital to support clients, increased regulatory requirements resulting from changes in regulations or the interpretation or application of existing regulations, results of applicable supervisory stress tests, changes to the composition of our balance sheet and the impact of taxes on share repurchases. Statements about the estimated impact of proposed, but not finalized, capital rules are subject to change as we continue to analyze the proposals, the final rules may differ from the proposed rules and our balance sheet composition will change. As a consequence, we may underestimate the actual impact of the final rules (including any final rules in respect of the July 2023 proposal from the U.S. federal bank regulatory agencies).

Statements about the risk exposure related to the asset recovery guarantee provided to the Government of Malaysia are subject to the risk that we may be unsuccessful in our arbitration against the Government of Malaysia. Statements about the progress or the status of remediation activities relating to 1MDB are based on our expectations regarding our current remediation plans. Accordingly, our ability to complete the remediation activities may change, possibly materially, from what is currently expected.

Statements about our objectives in management of our human capital, including our diversity goals, are based on our current expectations and are subject to the risk that we may not achieve these objectives and goals due to, among other things, competition in recruiting and attracting diverse candidates and unsuccessful efforts in retaining diverse employees.

Statements about our sustainability and carbon neutrality, net-zero or other sustainability-related targets and goals are based on our current expectations and are subject to the risk that we may not achieve these targets and goals due to, among other things, global socio-demographic and economic trends, energy prices, lack of technological innovations, climate-related conditions and weather events, legislative and regulatory changes, consumer behavior and demand, and other unforeseen events or conditions.

Statements about future inflation are subject to the risk that actual inflation may differ, possibly materially, due to, among other things, changes in economic growth, unemployment or consumer demand.

Statements about the impact of Russia's invasion of Ukraine and related sanctions, the impact of the conflicts in the Middle East and other developments on our business, results and financial position are subject to the risks that hostilities may escalate and expand, that sanctions may increase and that the actual impact may differ, possibly materially, from what is currently expected.

Statements about the proposed sales of Asset & Wealth Management historical principal investments are subject to the risks that buyers may not bid on these assets or bid at levels, or with terms, that are unacceptable to us, and that the performance of these activities may deteriorate as a result of the pending sales, and statements about the pending sale of GreenSky and our agreement with GM regarding a process to transition their credit card program to another issuer to be selected by GM are subject to the risk that the transactions may not close on the anticipated timelines or at all, including due to a failure to obtain requisite regulatory approvals.

Statements about the effectiveness of our cybersecurity risk management process are subject to the risk that measures we have implemented to safeguard our systems (and third parties that we interface with) may not be sufficient to prevent a successful cybersecurity attack or a material security breach that results in the disclosure of confidential information or otherwise disrupts our operations.

Item 1A. Risk Factors

We face a variety of risks that are substantial and inherent in our businesses.

The following is a summary of some of the more important factors that could affect our businesses:

Market

- Our businesses have been and may in the future be adversely affected by conditions in the global financial markets and broader economic conditions.
- Our businesses have been and may in the future be adversely affected by declining asset values, particularly where we have net "long" positions, receive fees based on the value of assets managed, or receive or post collateral.
- Our market-making activities have been and may in the future be affected by changes in the levels of market volatility.
- Our investment banking, client intermediation, asset management and wealth management businesses have been adversely affected and may in the future be adversely affected by market uncertainty or lack of confidence among investors and CEOs due to declines in economic activity and other unfavorable economic, geopolitical or market conditions.
- Our asset management and wealth management businesses have been and may in the future be adversely affected by the poor investment performance of our investment products or a client preference for products other than those which we offer or for products that generate lower fees.
- Inflation has had, and could continue to have, a negative effect on our business, results of operations and financial condition.

Liquidity

- Our liquidity, profitability and businesses may be adversely affected by an inability to access the debt capital markets or to sell assets.
- Our businesses have been and may in the future be adversely affected by disruptions or lack of liquidity in the credit markets, including reduced access to credit and higher costs of obtaining credit.
- Reductions in our credit ratings or an increase in our credit spreads may adversely affect our liquidity and cost of funding.
- Group Inc. is a holding company and its liquidity depends on payments and loans from its subsidiaries, many of which are subject to legal, regulatory and other restrictions on providing funds or assets to Group Inc.

Credit

- Our businesses, profitability and liquidity may be adversely affected by deterioration in the credit quality of or defaults by third parties.
- Concentration of risk increases the potential for significant losses in our market-making, underwriting, investing and financing activities.
- Derivative transactions and delayed documentation or settlements may expose us to credit risk, unexpected risks and potential losses.

Operational

- A failure in our operational systems or human error, malfeasance or other misconduct, could impair our liquidity, disrupt our businesses, result in the disclosure of confidential information, damage our reputation and cause losses.
- A failure or disruption in our infrastructure, or in the operational systems or infrastructure of third parties, could impair our liquidity, disrupt our businesses, damage our reputation and cause losses.
- The development and use of artificial intelligence (AI) present risks and challenges that may adversely impact our business.
- A failure to protect our computer systems, networks and information, and our clients' information, against cyber attacks and similar threats could impair our ability to conduct our businesses, result in the disclosure, theft or destruction of confidential information, damage our reputation and cause losses.
- We may incur losses as a result of ineffective risk management processes and strategies.

Legal and Regulatory

- Our businesses and those of our clients are subject to extensive and pervasive regulation around the world.
- A failure to appropriately identify and address potential conflicts of interest could adversely affect our businesses.
- We may be adversely affected by increased governmental and regulatory scrutiny or negative publicity.
- Substantial civil or criminal liability or significant regulatory action against us could have material adverse financial effects or cause us significant reputational harm, which in turn could seriously harm our business prospects.
- In conducting our businesses around the world, we are subject to political, legal, regulatory and other risks that are inherent in operating in many countries.
- The application of regulatory strategies and requirements in the U.S. and in non-U.S. jurisdictions to facilitate the orderly resolution of large financial institutions could create greater risk of loss for Group Inc.'s security holders.
- The application of Group Inc.'s proposed resolution strategy could result in greater losses for Group Inc.'s security holders.
- Our commodities activities, particularly our physical commodities activities, subject us to extensive regulation and involve certain potential risks, including environmental, reputational and other risks that may expose us to significant liabilities and costs.

Competition

- Our results have been and may in the future be adversely affected by the composition of our client base.
- The financial services industry is highly competitive.
- The growth of electronic trading and the introduction of new products and technologies, including trading and distributed ledger technologies, including cryptocurrencies, has increased competition.
- Our businesses would be adversely affected if we are unable to hire and retain qualified employees.

Market Developments and General Business Environment

- Our businesses, financial condition, liquidity and results of operations have been and may in the future be adversely affected by unforeseen or catastrophic events, including pandemics, terrorist attacks, wars, extreme weather events or other natural disasters.
- Climate change could disrupt our businesses and adversely affect client activity levels and the creditworthiness of our clients and counterparties, and our actual or perceived action or inaction relating to climate change could result in damage to our reputation.
- Our business, financial condition, liquidity and results of operations have been adversely affected by disruptions in the global economy caused by conflicts, and related sanctions and other developments.
- Certain of our businesses and our funding instruments may be adversely affected by changes in reference rates, currencies, indexes, baskets or ETFs to which products we offer or funding that we raise are linked.
- Our business, financial condition, liquidity and results of operations may be adversely affected by disruptions in the global economy caused by escalating tensions between the U.S. and China.
- We face enhanced risks as we operate in new locations and transact with a broader array of clients and counterparties.
- We may not be able to fully realize the expected benefits or synergies from acquisitions or other business initiatives in the time frames we expect, or at all.

The following are detailed descriptions of our Risk Factors summarized above:

Market

Our businesses have been and may in the future be adversely affected by conditions in the global financial markets and broader economic conditions.

Many of our businesses, by their nature, do not produce predictable earnings, and all of our businesses are materially affected by conditions in the global financial markets and economic conditions generally, both directly and through their impact on client activity levels and creditworthiness. These conditions can change suddenly and negatively.

Our financial performance is highly dependent on the environment in which our businesses operate. A favorable business environment is generally characterized by, among other factors, high global gross domestic product growth, regulatory and market conditions that result in transparent, liquid and efficient capital markets, low inflation, business, consumer and investor confidence, stable geopolitical conditions and strong business earnings.

Unfavorable or uncertain economic and market conditions can be caused by: low levels of or declines in economic growth, business activity or investor, business or consumer confidence; concerns over a potential recession; changes in consumer spending or borrowing patterns; pandemics; limitations on the availability or increases in the cost of credit and capital; illiquid markets; increases in inflation, interest rates, exchange rate or basic commodity price volatility or default rates; high levels of inflation or stagflation; concerns about sovereign defaults; uncertainty concerning fiscal or monetary policy, government shutdowns, debt ceilings or funding; the extent of and uncertainty about potential increases in tax rates and other regulatory changes; limitations on international trade and travel; laws and regulations that limit trading in, or the issuance of, securities of issuers outside their domestic markets; outbreaks or worsening of domestic or international tensions or hostilities, terrorism, nuclear proliferation, cybersecurity threats or attacks and other forms of disruption to or curtailment of global communication, energy transmission or transportation networks or other geopolitical instability or uncertainty; corporate, political or other scandals that reduce investor confidence in capital markets; extreme weather events or other natural disasters; or a combination of these or other factors.

The financial services industry and the securities and other financial markets have been materially and adversely affected in the past by significant declines in the values of nearly all asset classes, by a serious lack of liquidity and by high levels of borrower defaults. In addition, concerns about actual or potential increases in interest rates, inflation and other borrowing costs, a public health emergency, sovereign debt risk and its impact on the relevant sovereign banking system, and limitations on international trade, have, at times, negatively impacted the levels of client activity.

General uncertainty about economic, political and market activities, and the scope, timing and impact of regulatory reform, as well as weak consumer, investor and CEO confidence resulting in large part from such uncertainty, has in the past negatively impacted client activity, which has in the past adversely affected and could in the future adversely affect many of our businesses. Periods of low volatility and periods of high volatility combined with a lack of liquidity have at times had an unfavorable impact on our market-making businesses.

Changes, or proposed changes, to U.S. international trade and investment policies, particularly with important trading partners, have in recent years negatively impacted financial markets. Continued or escalating tensions may result in further actions taken by the U.S. or other countries that could disrupt international trade and investment and adversely affect financial markets. Those actions could include, among others, the implementation of sanctions, tariffs or foreign exchange measures, the large-scale sale of U.S. Treasury securities or other restrictions on cross-border trade, investment, or transfer of information or technology. Such developments have in the past affected and could in the future adversely affect our or our clients' businesses.

Financial institution returns may be negatively impacted by increased funding costs due in part to the lack of perceived government support of such institutions in the event of future financial crises relative to financial institutions in countries in which governmental support is maintained. In addition, liquidity in the financial markets has in the past been, and could in the future be, negatively impacted as market participants and market practices and structures adjust to evolving regulatory frameworks.

In June 2023, the U.S. federal government suspended the federal debt limit until 2025. If Congress does not raise the debt ceiling prior to 2025, the U.S. could default on its obligations, including Treasury securities that play an integral role in financial markets. A default by the U.S. could result in unprecedented market volatility and illiquidity, heightened operational risks relating to the clearance and settlement of transactions, margin and other disputes with clients and counterparties, an adverse impact to investors including money market funds that invest in U.S. Treasuries, downgrades in the U.S. credit rating, further increases in interest rates and borrowing costs and a recession in the U.S. or other economies. Continued uncertainty relating to the debt ceiling could result in downgrades of the U.S. credit rating, which could adversely affect market conditions, lead to margin disputes, further increases in interest rates and borrowing costs and necessitate significant operational changes among market participants, including us. A downgrade of the U.S. federal government's credit rating could also materially and adversely affect the market for repurchase agreements, securities borrowing and lending, and other financings typically collateralized by U.S. Treasury or agency obligations. Further, the fair value, liquidity and credit ratings of securities issued by, or other obligations of, agencies of the U.S. government or related to the U.S. government or its agencies, as well as municipal bonds could be similarly adversely affected. An increasing frequency of government shutdowns, or near shutdowns, in the U.S. could also lead to uncertainty as to the continued funding of the U.S. government, which could, in turn, adversely affect the credit ratings of the U.S. and the market for U.S. Treasury or agency obligations.

In 2024, numerous elections will be held globally. As a result, there may be significant market uncertainty in the periods leading up to and/or following the elections and this could cause higher volatility, lower levels of market activity and other adverse conditions for our businesses. The outcomes of the elections could also result in changes in policy, which could also have adverse effects on us or the business environment in which we operate more generally.

Our businesses have been and may in the future be adversely affected by declining asset values, particularly where we have net "long" positions, receive fees based on the value of assets managed, or receive or post collateral.

Many of our businesses have net "long" positions in debt securities, loans, derivatives, mortgages, equities (including private equity and real estate) and most other asset classes. These include positions we take when we act as a principal to facilitate our clients' activities, including our exchange-based market-making activities, or commit large amounts of capital to maintain positions in interest rate and credit products, as well as through our currencies, commodities, equities and mortgage-related activities. In addition, we invest in similar asset classes. Substantially all of our investing and market-making positions and a portion of our loans are marked-to-market on a daily or other periodic basis and declines in asset values directly and promptly impact our earnings, unless we have effectively "hedged" our exposures to those declines.

In certain circumstances (particularly in the case of credit products, including leveraged loans, and private equities or other securities that are not freely tradable or lack established and liquid trading markets), it may not be possible or economic to hedge our exposures and, to the extent that we do so, the hedge may be ineffective or may greatly reduce our ability to profit from increases in the values of the assets. Sudden declines and significant volatility in the prices of assets have in the past substantially curtailed or eliminated, and may in the future substantially curtail or eliminate, the trading markets for certain assets, which may make it difficult to sell, hedge or value such assets. We may incur losses from time to time as trading markets deteriorate or cease to function, including with respect to loan commitments we have made or securities offerings we have underwritten. The inability to sell or effectively hedge assets reduces our ability to limit losses in such positions and the difficulty in valuing assets has in the past negatively affected, and may in the future negatively affect, our capital, liquidity or leverage ratios, our funding costs and our ability to deploy capital.

In our exchange-based market-making activities, we are obligated by stock exchange rules to maintain an orderly market, including by purchasing securities in a declining market. In markets where asset values are declining and in volatile markets, this results in losses and an increased need for liquidity.

We receive asset-based management fees based on the value of our clients' portfolios or investment in funds managed by us and, in some cases, we also receive incentive fees based on increases in the value of such investments. Declines in asset values would ordinarily reduce the value of our clients' portfolios or fund assets, which in turn would typically reduce the fees we earn for managing such assets.

We post collateral to support our obligations and receive collateral that supports the obligations of our clients and counterparties. When the value of the assets posted as collateral or the credit ratings of the party posting collateral decline, the party posting the collateral may need to provide additional collateral or, if possible, reduce its trading position. An example of such a situation is a "margin call" in connection with a brokerage account. Therefore, declines in the value of asset classes used as collateral mean that either the cost of funding positions is increased or the size of positions is decreased. If we are the party providing collateral, this can increase our costs and reduce our profitability and if we are the party receiving collateral, this can also reduce our profitability by reducing the level of business done with our clients and counterparties.

In addition, volatile or less liquid markets increase the difficulty of valuing assets, which can lead to costly and time-consuming disputes over asset values and the level of required collateral, as well as increased credit risk to the recipient of the collateral due to delays in receiving adequate collateral. In cases where we foreclose on collateral, sudden declines in the value or liquidity of the collateral have in the past resulted in, and may in the future result in, significant losses to us, especially where there is a single type of collateral supporting the obligation. In addition, we have been and may in the future be subject to claims that the foreclosure was not permitted under the legal documents, was conducted in an improper manner, including in violation of law, or caused a client or counterparty to go out of business.

Our market-making activities have been and may in the future be affected by changes in the levels of market volatility.

Certain of our market-making activities depend on market volatility to provide trading and arbitrage opportunities to our clients, and decreases in volatility have reduced and may in the future reduce these opportunities and the level of client activity associated with them and have adversely affected and may in the future adversely affect the results of these activities. Increased volatility, while it can increase trading volumes and spreads, also increases risk as measured by Value-at-Risk (VaR) and increases risks in connection with our market-making activities and can cause us to reduce our inventory. Limiting the size of our market-making positions can adversely affect our profitability. In periods when volatility is increasing, but asset values are declining significantly, it may not be possible to sell assets at all or it may only be possible to do so at steep discounts. In those circumstances, we have been and may in the future be forced to either take on additional risk or to realize losses in order to decrease our VaR. In addition, increases in volatility increase the level of our RWAs, which increases the amount of capital that we are required to hold, and this can reduce our profitability and reduce our ability to distribute capital to our shareholders.

Our investment banking, client intermediation, asset management and wealth management businesses have been adversely affected and may in the future be adversely affected by market uncertainty or lack of confidence among investors and CEOs due to declines in economic activity and other unfavorable economic, geopolitical or market conditions.

Our investment banking business has been and may in the future be adversely affected by market conditions. Poor economic conditions and other uncertain geopolitical conditions may adversely affect and have in the past adversely affected investor and CEO confidence, resulting in significant industry-wide declines in the size and number of underwritings and of advisory transactions, which would likely have and have in the past had an adverse effect on our revenues and our profit margins. In particular, because a significant portion of our investment banking revenues is derived from our participation in large transactions, a decline in the number of large transactions has in the past and would in the future adversely affect our investment banking business. Similarly, in recent years, cross-border initial public offerings and other securities offerings have accounted for a significant proportion of new issuance activity. Legislative, regulatory or other changes that limit trading in, or the issuance of, securities outside the issuers' domestic markets, that result in or could result in the delisting or removal of securities from exchanges or indices, have in the past adversely affected and would in the future adversely affect our underwriting and client intermediation businesses. Furthermore, changes, or proposed changes, to international trade and investment policies of the U.S. and other countries could negatively affect market activity levels and our revenues.

In certain circumstances, market uncertainty or general declines in market or economic activity may adversely affect our client intermediation businesses by decreasing levels of overall activity or by decreasing volatility.

Market uncertainty, volatility and adverse economic conditions, as well as declines in asset values, may cause our clients to transfer their assets out of our funds or other products or their brokerage accounts and result in reduced net revenues, principally in our asset management and wealth management businesses. Even if clients do not withdraw their funds, they may invest them in products that generate less fee income.

Our asset management and wealth management businesses have been and may in the future be adversely affected by the poor investment performance of our investment products or a client preference for products other than those which we offer or for products that generate lower fees.

Poor investment returns in our asset management and wealth management businesses, due to either general market conditions or underperformance (relative to our competitors or to benchmarks) by funds or accounts that we manage or investment products that we design or sell, affect our ability to retain existing assets and to attract new clients or additional assets from existing clients. This could affect the management and incentive fees that we earn on AUS or the commissions and net spreads that we earn for selling other investment products, such as structured notes or derivatives. To the extent that our clients choose to invest in products that we do not currently offer, we will suffer outflows and a loss of management fees. Further, if, due to changes in investor sentiment or the relative performance of certain asset classes or otherwise, clients continue to invest in products that generate lower fees (e.g., passively managed or fixed income products), our average effective management fee will decline further and our asset management and wealth management businesses could be adversely affected.

Inflation has had, and could continue to have, a negative effect on our business, results of operations and financial condition.

Inflationary pressures have affected economies, financial markets and market participants worldwide. Inflationary pressures have increased certain of our operating expenses, and have adversely affected consumer sentiment and CEO confidence. Central bank responses to inflationary pressures have also resulted in higher market interest rates, which, in turn, have contributed to lower activity levels across financial markets, in particular for debt underwriting transactions and mortgage originations, and resulted in lower values for certain financial assets which have adversely affected our equity and debt investments. Higher interest rates increase our borrowing costs and have required us to increase interest paid on our deposits. If inflationary pressures persist, our expenses may increase further; we may be unable to achieve our efficiency ratio target; activity levels for certain of our businesses, in particular debt underwriting and mortgages, may decline; our interest expense could increase faster than our interest income, reducing our net interest income and net interest margin; certain of our investments could continue to incur losses or generally low levels of returns; AUS could decline, or the composition of our AUS could shift to lower fee products, reducing management and other fees; economies worldwide could experience recessions; and we could continue to operate in a generally unfavorable economic and market environment.

Liquidity

Our liquidity, profitability and businesses may be adversely affected by an inability to access the debt capital markets or to sell assets.

Liquidity is essential to our businesses. It is of critical importance to us, as most of the failures of financial institutions have occurred in large part due to insufficient liquidity. Our liquidity may be impaired by an inability to access secured and/or unsecured debt markets, an inability to raise or retain deposits, an inability to access funds from our subsidiaries or otherwise allocate liquidity optimally, an inability to sell assets or redeem our investments, lack of timely settlement of transactions, unusual deposit outflows, or other unforeseen outflows of cash or collateral, such as in March 2020, when corporate clients drew on revolving credit facilities in response to the COVID-19 pandemic. This situation may arise due to circumstances that we may be unable to control, such as a general market or economic disruption or an operational problem that affects third parties or us, or even by the perception among market participants that we, or other market participants, are experiencing greater liquidity risk.

We employ structured products to benefit our clients and hedge our own risks. The financial instruments that we hold and the contracts to which we are a party are often complex, and these complex structured products often do not have readily available markets to access in times of liquidity stress. Our investing and financing activities may lead to situations where the holdings from these activities represent a significant portion of specific markets, which could restrict liquidity for our positions.

Further, our ability to sell assets may be impaired if there is not generally a liquid market for such assets, as well as in circumstances where other market participants are seeking to sell similar otherwise generally liquid assets at the same time, as is likely to occur in a liquidity or other market crisis or in response to changes to rules or regulations. For example, in 2021, an investment management firm with large positions with several financial institutions defaulted, resulting in rapidly declining prices in the securities underlying those positions. In addition, clearinghouses, exchanges and other financial institutions with which we interact may exercise set-off rights or the right to require additional collateral, including in difficult market conditions, which could further impair our liquidity.

Numerous regulations have been adopted that impose more stringent liquidity requirements on large financial institutions, including us. These regulations require us to hold large amounts of highly liquid assets and reduce our flexibility to source and deploy funding. In addition, our need to manage our operations in light of certain regulatory requirements when applicable thresholds are met has in the past limited and may in the future limit our ability to raise deposits in GSIB or other funding, which could adversely affect our liquidity or ability to respond efficiently to liquidity stress.

Our businesses have been and may in the future be adversely affected by disruptions or lack of liquidity in the credit markets, including reduced access to credit and higher costs of obtaining credit.

Widening credit spreads, as well as significant declines in the availability of credit, have in the past adversely affected our ability to borrow on a secured and unsecured basis and may do so in the future. We fund ourselves on an unsecured basis by issuing long-term debt and commercial paper, by raising deposits at our bank subsidiaries, by issuing hybrid financial instruments and by obtaining loans or lines of credit from commercial or other banking entities. We seek to finance many of our assets on a secured basis. Any disruptions in the credit markets may make it harder and more expensive to obtain funding for our businesses. If our available funding is limited or we are forced to fund our operations at a higher cost, these conditions may require us to curtail our business activities and increase our cost of funding, both of which could reduce our profitability, particularly in our businesses that involve investing, lending and market making.

Our clients engaging in mergers, acquisitions and other types of strategic transactions often rely on access to the secured and unsecured credit markets to finance their transactions. A lack of available credit or an increased cost of credit can adversely affect the size, volume and timing of our clients' merger and acquisition transactions, particularly large transactions, and adversely affect our advisory and underwriting businesses.

Our credit businesses have been and may in the future be negatively affected by a lack of liquidity in credit markets. A lack of liquidity reduces price transparency, increases price volatility and decreases transaction volumes and size, all of which can increase transaction risk or decrease the profitability of these businesses.

Reductions in our credit ratings or an increase in our credit spreads may adversely affect our liquidity and cost of funding.

Our credit ratings are important to our liquidity. A reduction in our credit ratings could adversely affect our liquidity and competitive position, increase our borrowing costs, limit our access to the capital markets or trigger our obligations under certain provisions in some of our trading and collateralized financing contracts. Under these provisions, counterparties could be permitted to terminate contracts with us or require us to post additional collateral. Termination of our trading and collateralized financing contracts could cause us to sustain losses and impair our liquidity by requiring us to find other sources of financing or to make significant cash payments or securities movements.

As of December 2023, our counterparties could have called for additional collateral or termination payments related to our net derivative liabilities under bilateral agreements in an aggregate amount of $271 million in the event of a one-notch downgrade of our credit ratings and $1.58 billion in the event of a two-notch downgrade of our credit ratings. A downgrade by any one rating agency, depending on the agency's relative ratings of us at the time of the downgrade, may have an impact which is comparable to the impact of a downgrade by all rating agencies. For further information about our credit ratings, see "Management's Discussion and Analysis of Financial Condition and Results of Operations — Risk Management — Liquidity Risk Management — Credit Ratings" in Part II, Item 7 of this Form 10-K.

Our cost of obtaining long-term unsecured funding is directly related to our credit spreads (the amount in excess of the interest rate of benchmark securities that we need to pay). Increases in our credit spreads can significantly increase our cost of this funding. Changes in credit spreads are continuous, market-driven, and subject at times to unpredictable and highly volatile movements. Our credit spreads are also influenced by market perceptions of our creditworthiness and movements in the costs to purchasers of credit default swaps referenced to our long-term debt. The market for credit default swaps has proven to be extremely volatile and at times has lacked a high degree of transparency or liquidity.

Group Inc. is a holding company and its liquidity depends on payments and loans from its subsidiaries, many of which are subject to legal, regulatory and other restrictions on providing funds or assets to Group Inc.

Group Inc. is a holding company and, therefore, depends on dividends, distributions, loans and other payments from its subsidiaries to fund share repurchases and dividend payments and to fund payments on its obligations, including debt obligations. Many of our subsidiaries, including our broker-dealer and bank subsidiaries, are subject to laws that restrict dividend payments or authorize regulatory bodies to block or reduce the flow of funds from those subsidiaries to Group Inc.

In addition, our broker-dealer and bank entities and their subsidiaries are subject to restrictions on their ability to lend or transact with affiliates and to minimum regulatory capital and other requirements, as well as restrictions on their ability to use funds deposited with them in brokerage or bank accounts to fund their businesses. Additional restrictions on related-party transactions, increased capital and liquidity requirements and additional limitations on the use of funds on deposit in bank or brokerage accounts, as well as lower earnings, can reduce the amount of funds available to meet the obligations of Group Inc., including under the FRB's source of strength requirement, and even require Group Inc. to provide additional funding to such subsidiaries. Restrictions or regulatory action of that kind could impede access to funds that Group Inc. needs to make payments on its obligations, including debt obligations, or dividend payments. In addition, Group Inc.'s right to participate in a distribution of assets upon a subsidiary's liquidation or reorganization is subject to the prior claims of the subsidiary's creditors.

There has been a trend towards increased regulation and supervision of our subsidiaries by the governments and regulators in the countries in which those subsidiaries are located or do business. Concerns about protecting clients and creditors of financial institutions that are controlled by persons or entities located outside of the country in which such entities are located or do business have caused or may cause a number of governments and regulators to take additional steps to "ring fence" or require internal total loss-absorbing capacity (which may also be subject to "bail-in" powers, as described below) at those entities in order to protect clients and creditors of those entities in the event of financial difficulties involving those entities. The result has been and may continue to be additional limitations on our ability to efficiently move capital and liquidity among our affiliated entities, or to Group Inc., including in times of stress, thereby increasing the overall level of capital and liquidity required by us on a consolidated basis.

Furthermore, Group Inc. has guaranteed the payment obligations of certain of its subsidiaries, including GS&Co. and GS Bank USA, subject to certain exceptions. In addition, Group Inc. guarantees many of the obligations of its other consolidated subsidiaries on a transaction-by-transaction basis, as negotiated with counterparties. These guarantees may require Group Inc. to provide substantial funds or assets to its subsidiaries or their creditors or counterparties at a time when Group Inc. is in need of liquidity to fund its own obligations.

The requirements for us and certain of our subsidiaries to develop and submit recovery and resolution plans to regulators, and the incorporation of feedback received from regulators, may require us to increase capital or liquidity levels or issue additional long-term debt at Group Inc. or particular subsidiaries or otherwise incur additional or duplicative operational or other costs at multiple entities, and may reduce our ability to provide Group Inc. guarantees of the obligations of our subsidiaries or raise debt at Group Inc. Resolution planning may also impair our ability to structure our intercompany and external activities in a manner that we may otherwise deem most operationally efficient. Furthermore, arrangements to facilitate our resolution planning may cause us to be subject to additional taxes. Any such limitations or requirements would be in addition to the legal and regulatory restrictions described above on our ability to engage in capital actions or make intercompany dividends or payments.

See "Business — Regulation" in Part I, Item 1 of this Form 10-K for further information about regulatory restrictions.

Credit

Our businesses, profitability and liquidity may be adversely affected by deterioration in the credit quality of or defaults by third parties.

We are exposed to the risk that third parties that owe us money, securities or other assets will not perform their obligations. These parties may default on their obligations to us due to bankruptcy, lack of liquidity, operational failure or other reasons. A failure of a significant market participant, or even concerns about a default by such an institution, has in the past and could in the future lead to significant liquidity problems, losses or defaults by other institutions, which in turn could adversely affect us. We are also exposed to the risk of a special assessment, including under the FDIA or OLA in the event of the failure of a bank or non-bank financial institution, which have in the past, and may in the future, adversely affect our results of operations.

We are also subject to the risk that our rights against third parties may not be enforceable in all circumstances. In addition, deterioration in the credit quality of third parties whose securities or obligations we hold, including a deterioration in the value of collateral posted by third parties to secure their obligations to us under derivative contracts and loan agreements, could result in losses and/or adversely affect our ability to rehypothecate or otherwise use those securities or obligations for liquidity purposes.

A significant downgrade in the credit ratings of our counterparties could also have a negative impact on our results. While in many cases we are permitted to require additional collateral from counterparties that experience financial difficulty, disputes may arise as to the amount of collateral we are entitled to receive and the value of pledged assets. The termination of contracts and the foreclosure on collateral may subject us to claims for the improper exercise of our rights. Default rates, downgrades and disputes with counterparties as to the valuation of collateral typically increase significantly in times of market stress, increased volatility and illiquidity.

As part of our clearing and prime financing activities, we finance our clients' positions, and we could be held responsible for the defaults or misconduct of our clients. Default risk may arise from events or circumstances that are difficult to detect or foresee.

Concentration of risk increases the potential for significant losses in our market-making, underwriting, investing and financing activities.

Concentration of risk increases the potential for significant losses in our market-making, underwriting, investing and financing activities. The number and size of these transactions has affected and may in the future affect our results of operations in a given period. Moreover, because of concentrated risk, we may suffer losses even when economic and market conditions are generally favorable for our competitors. Disruptions in the credit markets can make it difficult to hedge these credit exposures effectively or economically. In addition, we extend large commitments as part of our credit origination activities. Disruptions in the credit markets have in the past substantially curtailed or eliminated, and may in the future substantially curtail or eliminate, the trading markets for loans we originate. These disruptions have in the past made, and may in the future make, it difficult for us to sell or value such assets, which have in the past resulted, and may in the future result, in losses for us.

Rules adopted under the Dodd-Frank Act, and similar rules adopted in other jurisdictions, require issuers of certain asset-backed securities and any person who organizes and initiates certain asset-backed securities transactions to retain economic exposure to the asset, which has affected the cost of and structures used in connection with these securitization activities. Our inability to reduce our credit risk by selling, syndicating or securitizing these positions, including during periods of market stress, has in the past negatively affected and may in the future negatively affect our results of operations due to a decrease in the fair value of the positions, including due to the insolvency or bankruptcy of borrowers, as well as the loss of revenues associated with selling such securities or loans.

In the ordinary course of business, we are at times subject to a concentration of credit risk to a particular counterparty, borrower, issuer (including sovereign issuers) or geographic area or group of related countries, such as the E.U., and a failure or downgrade of, or default by, such entity could negatively impact our businesses, perhaps materially, and the systems by which we set limits and monitor the level of our credit exposure to individual entities, industries, countries and regions may not function as we have anticipated. Regulatory reform, including the Dodd-Frank Act, has led to increased centralization of trading activity through particular clearinghouses, central agents or exchanges, which has significantly increased our concentration of risk with respect to these entities. While our activities expose us to many different industries, counterparties and countries, we routinely execute a high volume of transactions with counterparties engaged in financial services activities, including brokers and dealers, commercial banks, clearinghouses, exchanges and investment funds. This has resulted in significant credit concentration with respect to these counterparties.

Derivative transactions and delayed documentation or settlements may expose us to credit risk, unexpected risks and potential losses.

We are party to a large number of derivative transactions, including credit derivatives. Many of these derivative instruments are individually negotiated and non-standardized, which can make exiting, transferring or settling positions difficult. Many credit derivatives require that we deliver to the counterparty the underlying security, loan or other obligation in order to receive payment. In a number of cases, we do not hold the underlying security, loan or other obligation and may not be able to obtain the underlying security, loan or other obligation. This could cause us to forfeit the payments due to us under these contracts or result in settlement delays with the attendant credit and operational risk, as well as increased costs to us.

Derivative transactions also involve the risk that documentation has not been properly executed, that executed agreements may not be enforceable against the counterparty, or that obligations under such agreements may not be able to be "netted" against other obligations with such counterparty. In addition, counterparties may claim that such transactions were not appropriate or authorized.

As a signatory to the ISDA Universal Protocol or U.S. ISDA Protocol (ISDA Protocols) and being subject to the FRB's and FDIC's rules on QFCs and similar rules in other jurisdictions, we may not be able to exercise remedies against counterparties and, as this regime has not yet been tested, we may suffer risks or losses that we would not have expected to suffer if we could immediately close out transactions upon a termination event. The ISDA Protocols and these rules and regulations extend to repurchase agreements and other instruments that are not derivative contracts.

Derivative contracts and other transactions, including secondary bank loan purchases and sales, entered into with third parties are not always confirmed by the counterparties or settled on a timely basis. While the transaction remains unconfirmed or during any delay in settlement, we are subject to heightened credit and operational risk and in the event of a default may find it more difficult to enforce our rights.

In addition, as new complex derivative products are created, covering a wider array of underlying credit and other instruments, disputes about the terms of the underlying contracts could arise, which could impair our ability to effectively manage our risk exposures from these products and subject us to increased costs. The provisions of the Dodd-Frank Act requiring central clearing of credit derivatives and other OTC derivatives, or a market shift toward standardized derivatives, could reduce the risk associated with these transactions, but under certain circumstances could also limit our ability to develop derivatives that best suit the needs of our clients and to hedge our own risks, and could adversely affect our profitability. In addition, these provisions have increased our credit exposure to central clearing platforms.

Operational

A failure in our operational systems or human error, malfeasance or other misconduct, could impair our liquidity, disrupt our businesses, result in the disclosure of confidential information, damage our reputation and cause losses.

Our businesses are highly dependent on our ability to process and monitor, on a daily basis, a very large number of transactions, many of which are highly complex and occur at high volumes and frequencies, across numerous and diverse markets in many currencies. These transactions, as well as the information technology services we provide to clients, often must adhere to client-specific guidelines, as well as legal and regulatory standards.

Many rules and regulations worldwide govern our obligations to execute transactions and report such transactions and other information to regulators, exchanges and investors. Compliance with these legal and reporting requirements can be challenging, and we have been and may in the future be subject to regulatory fines and penalties for failing to follow these rules or to report timely, accurate and complete information in accordance with these rules.

As the volume, speed, frequency and complexity of transactions, especially electronic transactions (as well as the requirements to report such transactions on a real-time basis to clients, regulators and exchanges) increase, developing and maintaining our operational systems and infrastructure has become more challenging, and the risk of systems or human error in connection with such transactions has increased, as have the potential consequences of such errors due to the speed and volume of transactions involved and the potential difficulty associated with discovering errors quickly enough to limit the resulting consequences. For example, the transition to a T+1 settlement timeframe in the U.S. in 2024 subjects us to increased operational risks with respect to reporting and timely settlement of transactions. These risks are exacerbated in times of increased volatility. As with other similarly situated institutions, we utilize credit underwriting models in connection with our businesses, including our consumer-oriented activities. Allegations or publicity, whether or not accurate, that our underwriting decisions do not treat consumers or clients fairly, or comply with the applicable law or regulation, have in the past resulted and may in the future result in negative publicity, reputational damage and governmental and regulatory scrutiny, investigations and enforcement actions.

Our financial, accounting, data processing or other operational systems and facilities have in the past not operated properly in certain respects and may in the future not operate properly or become disabled as a result of events that are wholly or partially beyond our control, such as a spike in transaction volume, adversely affecting our ability to process these transactions or provide these services. We must continuously update these systems to support our operations and growth and to respond to changes in regulations and markets, and invest heavily in systemic controls and training to pursue our objective of ensuring that such transactions do not violate applicable rules and regulations or, due to errors in processing such transactions, adversely affect markets, our clients and counterparties or us. Enhancements and updates to systems, as well as the requisite training, including in connection with the integration of new businesses, entail significant costs and create risks associated with implementing new systems and integrating them with existing ones.

The use of computing devices and phones is critical to the work done by our employees and the operation of our systems and businesses and those of our clients and our third-party service providers and vendors. Their importance has continued to increase, in particular in light of hybrid work arrangements. Computers and computer networks are subject to various risks, including, among others, cyber attacks, inherent technological defects, system failures and human error. For example, fundamental security flaws in computer chips found in many types of these computing devices and phones have been reported in the past and may occur in the future. The use of personal devices by our employees or by our vendors for work-related activities also presents risks related to potential violations of record retention and other requirements. Cloud technologies are also critical to the operation of our systems and platforms and our reliance on cloud technologies is growing. Service disruptions have resulted, and may result in the future, in delays in accessing, or the loss of, data that is important to our businesses and may hinder our clients' access to our platforms. There have been a number of widely publicized cases of outages in connection with access to cloud computing providers. Addressing these and similar issues could be costly and affect the performance of these businesses and systems. Operational risks may be incurred in applying fixes and there may still be residual security risks.

Notwithstanding the proliferation of technology and technology-based risk and control systems, our businesses ultimately rely on people as our greatest resource, and, from time to time, they have in the past and may in the future make mistakes or engage in violations of applicable policies, laws, rules or procedures that are not always caught immediately by our technological processes or by our controls and other procedures, which are intended to prevent and detect such errors or violations. These have in the past and may in the future include calculation errors, mistakes in addressing emails, errors in software or model development or implementation, or simple errors in judgment, as well as intentional efforts to ignore or circumvent applicable policies, laws, rules or procedures. Human errors, malfeasance and other misconduct, including the intentional misuse of client information in connection with insider trading or for other purposes, even if promptly discovered and remediated, has in the past resulted and may in the future result in reputational damage and losses and liabilities for us.

The majority of the employees in our primary locations, including the New York metropolitan area, London, Bengaluru, Hyderabad, Hong Kong, Tokyo, Salt Lake City and Dallas, work in close proximity to one another. Our headquarters is located in the New York metropolitan area, and we have our largest employee concentration occupying two principal office buildings near the Hudson River waterfront. They are subject to potential catastrophic events, including, but not limited to, terrorist attacks, extreme weather, or other hostile events that could negatively affect our business. Notwithstanding our efforts to maintain business continuity, business disruptions impacting our offices and employees could lead to our employees' inability to occupy the offices, communicate with or travel to other office locations or work remotely. As a result, our ability to service and interact with clients may be adversely impacted, due to our failure or inability to successfully implement business contingency plans.

A failure or disruption in our infrastructure, or in the operational systems or infrastructure of third parties, could impair our liquidity, disrupt our businesses, damage our reputation and cause losses.

We face the risk of operational failure or significant operational delay, termination or capacity constraints of any of the clearing agents, exchanges, clearinghouses or other financial intermediaries we use to facilitate our securities and derivatives transactions, and as our interconnectivity with our clients grows, we increasingly face the risk of operational failure or significant operational delay with respect to our clients' systems.

There has been significant consolidation among clearing agents, exchanges and clearinghouses and an increasing number of derivative transactions are cleared on exchanges, which has increased our exposure to operational failure or significant operational delay, termination or capacity constraints of the particular financial intermediaries that we use and could affect our ability to find adequate and cost-effective alternatives in the event of any such failure, delay, termination or constraint. Industry consolidation, whether among market participants or financial intermediaries, increases the risk of operational failure or significant operational delay as disparate complex systems need to be integrated, often on an accelerated basis.

The interconnectivity of multiple financial institutions with central agents, exchanges and clearinghouses, and the increased centrality of these entities, increases the risk that an operational failure at one institution or entity may cause an industry-wide operational failure that could materially impact our ability to conduct business. Interconnectivity of financial institutions with other companies through, among other things, application programming interfaces or APIs presents similar risks. Any such failure, termination or constraint could adversely affect our ability to effect transactions, service our clients, manage our exposure to risk or expand our businesses or result in financial loss or liability to our clients, impairment of our liquidity, disruption of our businesses, regulatory intervention or reputational damage.

Despite our resiliency plans and facilities, our ability to conduct business may be adversely impacted by a disruption in the infrastructure that supports our businesses and the communities where we are located. This may include a disruption involving electrical, satellite, undersea cable or other communications, internet, transportation or other facilities used by us, our employees or third parties with which we conduct business, including cloud service providers. These disruptions may occur as a result of events that affect only our buildings or systems or those of third parties, or as a result of events with a broader impact globally, regionally or in the cities where those buildings or systems are located, including, but not limited to, natural disasters, war, civil unrest, terrorism, economic or political developments, pandemics and weather events.

In addition, although we seek to diversify our third-party vendors to increase our resiliency, we are exposed to risks if our vendors operate in the same area and are also exposed to the risk that a disruption or other information technology event at a common service provider to our vendors could impede their ability to provide products or services to us. We may not be able to effectively monitor or mitigate operational risks relating to our vendors' use of common service providers.

Additionally, although the prevalence and scope of applications of distributed ledger technology, cryptocurrency and similar technologies is growing, the technology is nascent and may be vulnerable to cyber attacks or have other inherent weaknesses. We are exposed to risks, and may become exposed to additional risks, related to distributed ledger technology, including through our facilitation of clients' activities involving financial products that use distributed ledger technology, such as blockchain, cryptocurrencies or other digital assets, our investments in companies that seek to develop platforms based on distributed ledger technology, the use of distributed ledger technology by third-party vendors, clients, counterparties, clearinghouses and other financial intermediaries, and the receipt of cryptocurrencies or other digital assets as collateral. Market volatility of financial products using distributed ledger technology may increase these risks.

The development and use of artificial intelligence (AI) present risks and challenges that may adversely impact our business.

We or our third-party vendors, clients or counterparties may develop or incorporate AI technology in certain business processes, services or products. The development and use of AI present a number of risks and challenges to our business. The legal and regulatory environment relating to AI is uncertain and rapidly evolving, both in the U.S. and internationally, and includes regulation targeted specifically at AI as well as provisions in intellectual property, privacy, consumer protection, employment and other laws applicable to the use of AI. These evolving laws and regulations could require changes in our implementation of AI technology and increase our compliance costs and the risk of non-compliance. AI models, particularly generative AI models, may produce output or take action that is incorrect, that result in the release of private, confidential or proprietary information, that reflect biases included in the data on which they are trained, infringe on the intellectual property rights of others, or that is otherwise harmful. In addition, the complexity of many AI models makes it challenging to understand why they are generating particular outputs. This limited transparency increases the challenges associated with assessing the proper operation of AI models, understanding and monitoring the capabilities of the AI models, reducing erroneous output, eliminating bias and complying with regulations that require documentation or explanation of the basis on which decisions are made. Further, we may rely on AI models developed by third parties, and, to that extent, would be dependent in part on the manner in which those third parties develop and train their models, including risks arising from the inclusion of any unauthorized material in the training data for their models, and the effectiveness of the steps these third parties have taken to limit the risks associated with the output of their models, matters over which we may have limited visibility. Any of these risks could expose us to liability or adverse legal or regulatory consequences and harm our reputation and the public perception of our business or the effectiveness of our security measures.

In addition to our use of AI technologies, we are exposed to risks arising from the use of AI technologies by bad actors to commit fraud and misappropriate funds and to facilitate cyberattacks. Generative AI, if used to perpetrate fraud or launch cyberattacks, could result in losses, liquidity outflows or other adverse effects at a particular financial institution or exchange.

A failure to protect our computer systems, networks and information, and our clients' information, against cyber attacks and similar threats could impair our ability to conduct our businesses, result in the disclosure, theft or destruction of confidential information, damage our reputation and cause losses.

Our operations rely on the secure processing, storage and transmission of confidential and other information in our computer systems and networks and those of our vendors. There have been a number of highly publicized cases involving financial services companies, consumer-based companies, software and information technology service providers, governmental agencies and other organizations reporting the unauthorized access or disclosure of client, customer or other confidential information in recent years, as well as cyber attacks involving the dissemination, theft and destruction of corporate information or other assets, as a result of inadequate procedures or the failure to follow procedures by employees or contractors or as a result of actions by third parties, including actions by foreign governments. There have also been a number of highly publicized cases where hackers have requested "ransom" payments in exchange for not disclosing customer information or for restoring access to information or systems.

We are regularly the target of attempted cyber attacks, including denial-of-service attacks, and must continuously monitor and develop our systems to protect the integrity and functionality of our technology infrastructure and access to and the security of our data. We have faced a high volume of cyber attacks as we expand our mobile- and other internet-based products and services, as well as our usage of mobile and cloud technologies, and as we provide these services to individual consumers. Further, the use of AI by cybercriminals may increase the frequency and severity of cybersecurity attacks against us or our third-party vendors and clients. The migration of our communication from devices we provide to employee-owned devices presents additional risks of cyber attacks, as do hybrid work arrangements. In addition, due to our interconnectivity with third-party vendors (and their respective service providers), central agents, exchanges, clearinghouses and other financial institutions, we could be adversely impacted if any of them is subject to a successful cyber attack or other information security event. These impacts could include the loss of access to information or services from the third party subject to the cyber attack or other information security event or could result in unauthorized access to or disclosure of client, customer or other confidential information, which could, in turn, interrupt certain of our businesses or adversely affect our results of operations and reputation.

Despite our efforts to ensure the integrity of our systems and information, we may not be able to anticipate, detect or implement effective preventive measures against all cyber threats, including because the techniques used are increasingly sophisticated, change frequently and are often not recognized until launched. Cyber attacks can originate from a variety of sources, including third parties who are affiliated with or sponsored by foreign governments or are involved with organized crime or terrorist organizations. Third parties may also attempt to place individuals in our offices or induce employees, clients or other users of our systems to disclose sensitive information or provide access to our data or that of our clients, and these types of risks may be difficult to detect or prevent.

Although we take protective measures proactively and endeavor to modify them as circumstances warrant, our computer systems, software and networks may be vulnerable to unauthorized access, misuse, computer viruses or other malicious code, cyber attacks on our vendors and other events that could have a security impact. Risks relating to cyber attacks on our vendors have been increasing given the greater frequency and severity in recent years of supply chain attacks affecting software and information technology service providers. Due to the complexity and interconnectedness of our systems, the process of enhancing our protective measures can itself create a risk of systems disruptions and security issues. In addition, protective measures that we employ to compartmentalize our data may reduce our visibility into, and adversely affect our ability to respond to, cyber threats and issues with our systems.

If one or more of these types of events occur, it potentially could jeopardize our, our clients', our counterparties' or third parties' confidential and other information processed, stored in, or transmitted through our computer systems and networks, or otherwise cause interruptions or malfunctions in our operations or those of our clients, counterparties or third parties, which could impact their ability to transact with us or otherwise result in legal or regulatory action, significant losses or reputational damage. In addition, such an event could persist for an extended period of time before being properly detected or escalated, and, following detection or escalation, it could take considerable time for us to obtain full and reliable information about the extent, amount and type of information compromised. During the course of an investigation, we may not know the full impact of the event and how to remediate it, and actions, decisions and mistakes that are taken or made may further increase the negative effects of the event on our business, results of operations and reputation. Moreover, new regulations require us to disclose information on a timely basis about material cybersecurity incidents, including those that may not have been resolved or fully investigated at the time of disclosure.

We have expended, and expect to continue to expend, significant resources on an ongoing basis to modify our protective measures and to investigate and remediate vulnerabilities or other exposures, but these measures may be ineffective and we may be subject to legal or regulatory action, as well as financial losses that are either not insured against or not fully covered through any insurance maintained by us. Regulatory agencies have become increasingly focused on cybersecurity incidents.

Our clients' confidential information may also be at risk from the compromise of clients' personal electronic devices or as a result of a data security breach at an unrelated company. Losses due to unauthorized account activity could harm our reputation and may have adverse effects on our business, financial condition and results of operations.

The increased use of mobile and cloud technologies heightens these and other operational risks, as do hybrid work arrangements. Certain aspects of the security of these technologies are unpredictable or beyond our control, and the failure by mobile technology and cloud service providers to adequately safeguard their systems and prevent cyber attacks could disrupt our operations and result in misappropriation, corruption or loss of confidential and other information. In addition, there is a risk that encryption and other protective measures, despite their sophistication, may be defeated, particularly to the extent that new computing technologies vastly increase the speed and computing power available.

We routinely transmit and receive personal, confidential and proprietary information by email and other electronic means. We have discussed and worked with clients, vendors, service providers, counterparties and other third parties to develop secure transmission capabilities and protect against cyber attacks, but we do not have, and may be unable to put in place, secure capabilities with all of our clients, vendors, service providers, counterparties and other third parties and we may not be able to ensure that these third parties have appropriate controls in place to protect the confidentiality of the information. An interception, misuse or mishandling of personal, confidential or proprietary information being sent to or received from a client, vendor, service provider, counterparty or other third party could result in legal liability, regulatory action and reputational harm.

We may incur losses as a result of ineffective risk management processes and strategies.

We seek to monitor and control our risk exposure through a risk and control framework encompassing a variety of separate but complementary financial, credit, operational, compliance and legal reporting systems, internal controls, management review processes and other mechanisms. Our risk management process seeks to balance our ability to profit from market-making, investing or lending positions, and underwriting activities, with our exposure to potential losses. While we employ a broad and diversified set of risk monitoring and risk mitigation techniques, those techniques and the judgments that accompany their application cannot anticipate every economic and financial outcome or the specifics and timing of such outcomes. Thus, in the course of our activities, we have incurred and may in the future incur losses. Market conditions in recent years have involved unprecedented dislocations and highlight the limitations inherent in using historical data to manage risk.

The models that we use to assess and control our risk exposures reflect assumptions about the degrees of correlation or lack thereof among prices of various asset classes or other market indicators. In times of market stress or other unforeseen circumstances, previously uncorrelated indicators may become correlated, or conversely previously correlated indicators may move in different directions. These types of market movements have at times limited the effectiveness of our hedging strategies and have caused us to incur significant losses, and they may do so in the future. These changes in correlation have been and may in the future be exacerbated where other market participants are using risk or trading models with assumptions or algorithms that are similar to ours. In these and other cases, it may be difficult to reduce our risk positions due to the activity of other market participants or widespread market dislocations, including circumstances where asset values are declining significantly or no market exists for certain assets.

In addition, the use of models in connection with risk management and numerous other critical activities presents risks that the models may be ineffective, either because of poor design, ineffective testing, or improper or flawed inputs, as well as unpermitted access to the models resulting in unapproved or malicious changes to the model or its inputs.

To the extent that we have positions through our market-making or origination activities or we make investments directly through our investing activities, including private equity, that do not have an established liquid trading market or are otherwise subject to restrictions on sale or hedging, we may not be able to reduce our positions and therefore reduce our risk associated with those positions. In addition, to the extent permitted by applicable law and regulation, we invest our own capital in private equity, credit, real estate and hedge funds that we manage and limitations on our ability to withdraw some or all of our investments in these funds, whether for legal, reputational or other reasons, may make it more difficult for us to control the risk exposures relating to these investments.

Prudent risk management, as well as regulatory restrictions, may cause us to limit our exposure to counterparties, geographic areas or markets, which may limit our business opportunities and increase the cost of our funding or hedging activities.

Our consumer offerings present us with different risks, and we have needed and continue to need to expand and adapt our risk monitoring and mitigation activities to account for these business activities. A failure to adequately assess and control such risk exposures could result in losses to us.

For further information about our risk management policies and procedures, see “Management’s Discussion and Analysis of Financial Condition and Results of Operations — Risk Management” in Part II, Item 7 of this Form 10-K.

Legal and Regulatory

Our businesses and those of our clients are subject to extensive and pervasive regulation around the world.

As a participant in the financial services industry and a systemically important financial institution, we are subject to extensive regulation in jurisdictions around the world. We face the risk of significant intervention by law enforcement, regulatory and taxing authorities, as well as private litigation, in all jurisdictions in which we conduct our businesses. In many cases, our activities have been and may continue to be subject to overlapping and divergent regulation in different jurisdictions. Among other things, as a result of law enforcement authorities, regulators or private parties challenging our compliance with existing laws and regulations, we or our employees have been, and could be, fined, criminally charged or sanctioned; prohibited from engaging in some of our business activities; subjected to limitations or conditions on our business activities, including higher capital requirements; or subjected to new or substantially higher taxes or other governmental charges in connection with the conduct of our businesses or with respect to our employees. These limitations or conditions may limit our business activities and negatively impact our profitability.

In addition to the impact on the scope and profitability of our business activities, day-to-day compliance with existing laws and regulations has involved and will continue to involve significant amounts of time, including that of our senior leaders and that of a large number of dedicated compliance and other reporting and operational personnel, in connection with which we expect to continue to add personnel, all of which may negatively impact our profitability.

Our revenues and profitability and those of our competitors have been and will continue to be impacted by requirements relating to capital, leverage, liquidity and long-term funding levels, requirements related to resolution and recovery planning, derivatives clearing and margin rules and levels of regulatory oversight, as well as limitations on which and, if permitted, how certain business activities may be carried out by financial institutions. The laws, regulations and accounting standards, that apply to our businesses are often complex and, in many cases, we must make interpretive decisions regarding the application of those laws, regulations and accounting standards to our business activities. Changes in interpretations, whether in response to regulatory guidance, industry conventions, our own reassessments or otherwise, could adversely affect our businesses, results of operations or ability to satisfy applicable regulatory requirements, such as capital or liquidity requirements.

If there are new laws or regulations or changes in the interpretation or enforcement of existing laws or regulations applicable to our businesses or those of our clients, including capital, liquidity, leverage, long-term debt, total loss-absorbing capacity and margin requirements, restrictions on leveraged lending or other business practices, reporting requirements, requirements relating to recovery and resolution planning, tax burdens and compensation restrictions, that are imposed on a limited subset of financial institutions (whether based on size, method of funding, activities, geography or other criteria), compliance with these new laws or regulations, or changes in the enforcement of existing laws or regulations, could adversely affect our ability to compete effectively with other institutions that are not affected in the same way. In addition, regulation imposed on financial institutions or market participants generally, such as taxes on stock transfers, share repurchases and other financial transactions, could adversely impact levels of market activity more broadly, and thus impact our businesses. Changes to laws or regulations, such as tax laws, could also have a disproportionate impact on us, based on the way those laws or regulations are applied to financial services and financial firms or due to our corporate structure or where or how we provide these services.

These developments could impact our profitability in the affected jurisdictions, or even make it uneconomic for us to continue to conduct all or certain of our businesses in those jurisdictions, or could cause us to incur significant costs associated with changing our business practices, restructuring our businesses, moving all or certain of our businesses and our employees to other locations or complying with applicable capital requirements, including reducing dividends or share repurchases, liquidating assets or raising capital in a manner that adversely increases our funding costs or otherwise adversely affects our shareholders and creditors.

U.S. and non-U.S. regulatory developments, in particular the Dodd-Frank Act and Basel III, have significantly altered the regulatory framework within which we operate and have adversely affected and may in the future adversely affect our profitability. Among the aspects of the Dodd-Frank Act that have affected or may in the future affect our businesses are: increased capital, liquidity and reporting requirements; limitations on activities in which we may engage; increased regulation of and restrictions on OTC derivatives markets and transactions; limitations on incentive compensation; limitations on affiliate transactions; requirements to reorganize or limit activities in connection with recovery and resolution planning; increased deposit insurance assessments; and increased standards of care for broker-dealers and investment advisers in dealing with clients. The implementation of higher capital requirements, more stringent requirements relating to liquidity, long-term debt and total loss-absorbing capacity and the prohibition on proprietary trading and the sponsorship of, or investment in, covered funds by the Volcker Rule may continue to adversely affect our profitability and competitive position, particularly if these requirements do not apply equally to our competitors or are not implemented uniformly across jurisdictions. The July 2023 proposal from the U.S. federal bank regulatory agencies to implement the Basel Committee's finalization of the post-crisis regulatory capital reforms would raise our capital requirements, if adopted as proposed. We may also become subject to higher and more stringent capital and other regulatory requirements as a result of the implementation of future Basel Committee standards. See "Business — Regulation — Banking Supervision and Regulation — Risk-Based Capital Ratios" in Part I, Item 1 of this Form 10-K for further information about proposed regulatory requirements.

As described in "Business — Regulation — Banking Supervision and Regulation — Risk-Based Capital Ratios" in Part I, Item 1 of this Form 10-K, the SCB has replaced the capital conservation buffer under the Standardized Capital Rules and resulted in higher Standardized capital ratio requirements. Failure to comply with these requirements could limit our ability to, among other things, repurchase shares, pay dividends and make certain discretionary compensation payments. In addition, if we are required to resubmit our capital plan, we generally may not make capital distributions, such as share repurchases or dividends, without the prior approval of the FRB. Dividends and repurchases are also subject to oversight by the FRB, which can result in limitations. Limitations on our ability to make capital distributions could, among other things, prevent us from returning capital to our shareholders and impact our return on equity. Additionally, as a G-SIB, we are subject to the G-SIB surcharge. Our G-SIB surcharge is updated annually based on financial data from the prior year. Expansion of our businesses, growth in our balance sheet and increased reliance on short-term wholesale funding have resulted in increases and in the future may result in further increases in our G-SIB surcharge and a corresponding increase in our capital requirements. The July 2023 proposal from the FRB would introduce additional granularity in the surcharge buckets and increase the amount of financial data used in the calculation of the G-SIB surcharge based on averages over the year, as opposed to period-end values, which could increase our G-SIB surcharge.

We are also subject to laws and regulations, such as the GDPR and the California Consumer Privacy Act, relating to the privacy of the information of clients, employees or others, and any failure to comply with these laws and regulations could expose us to liability and/or reputational damage. As new privacy-related laws and regulations are implemented, the time and resources needed for us to comply with such laws and regulations, as well as our potential liability for non-compliance and reporting obligations in the case of data breaches, may significantly increase.

In addition, our businesses are increasingly subject to laws and regulations relating to surveillance, encryption and data on-shoring in the jurisdictions in which we operate. Compliance with these laws and regulations may require us to change our policies, procedures and technology for information security, which could, among other things, make us more vulnerable to cyber attacks and misappropriation, corruption or loss of information or technology.

Our consumer-oriented deposit-taking and credit card businesses subject us to numerous additional regulations in the jurisdictions in which these businesses operate. Not only are these regulations extensive, but they involve types of regulations and supervision, as well as regulatory compliance risks, that have not historically applied to us. The level of regulatory scrutiny and the scope of regulations affecting financial interactions with consumers is often much greater than that associated with doing business with institutions and high-net-worth individuals. Complying with these regulations is time-consuming, costly and presents new and increased risks.

Our expansion into consumer-oriented activities resulted in a change to GS Bank USA's CRA requirements in 2023, such that GS Bank USA is no longer assessed as a "wholesale bank" for CRA compliance purposes and, instead, is assessed pursuant to a strategic plan. Any failure to comply with different or expanded CRA requirements as a result of this change in assessment methods could negatively impact GS Bank USA's CRA ratings, cause reputational harm and result in limits on our ability to make future acquisitions or engage in certain new activities.

Increasingly, regulators and courts have sought to hold financial institutions liable for the misconduct of their clients where they have determined that the financial institution should have detected that the client was engaged in wrongdoing, even though the financial institution had no direct knowledge of the activities engaged in by its client. Regulators and courts have also increasingly found liability as a "control person" for activities of entities in which financial institutions or funds controlled by financial institutions have an investment, but which they do not actively manage. In addition, regulators and courts continue to seek to establish "fiduciary" obligations to counterparties to which no such duty had been thought to exist. To the extent that such efforts are successful, the cost of, and liabilities associated with, engaging in brokerage, clearing, market-making, prime financing, investing and other similar activities could increase significantly. To the extent that we have fiduciary obligations in connection with acting as a financial adviser or investment adviser or in other roles for individual, institutional, sovereign or investment fund clients, any breach, or even an alleged breach, of such obligations could have materially negative legal, regulatory and reputational consequences.

For information about the extensive regulation to which our businesses are subject, see "Business — Regulation" in Part I, Item 1 of this Form 10-K.

A failure to appropriately identify and address potential conflicts of interest could adversely affect our businesses.

Due to the broad scope of our businesses and our client base, we regularly address potential conflicts of interest, including situations where our services to a particular client or our own investments or other interests conflict, or are perceived to conflict, with the interests of that client or another client, as well as situations where one or more of our businesses have access to material non-public information that may not be shared with our other businesses and situations where we may be a creditor of an entity with which we also have an advisory or other relationship.

In addition, our status as a BHC subjects us to heightened regulation and increased regulatory scrutiny by the FRB with respect to transactions between GS Bank USA and its subsidiaries and entities that are or could be viewed as affiliates of ours and, under the Volcker Rule, transactions between us and covered funds.

We have extensive procedures and controls that are designed to identify and address conflicts of interest, including those designed to prevent the improper sharing of information among our businesses. However, appropriately identifying and dealing with conflicts of interest is complex and difficult, and our reputation, which is one of our most important assets, could be damaged and the willingness of clients to enter into transactions with us may be adversely affected if we fail, or appear to fail, to identify, disclose and deal appropriately with conflicts of interest. In addition, potential or perceived conflicts could give rise to litigation or regulatory enforcement actions. Additionally, our One Goldman Sachs initiative, as well as the alignment of our businesses, aim to increase collaboration among our businesses, which may increase the potential for actual or perceived conflicts of interest and improper information sharing.

We may be adversely affected by increased governmental and regulatory scrutiny or negative publicity.

Governmental scrutiny from regulators, legislative bodies and law enforcement agencies with respect to matters relating to compensation, our business practices, our past actions and other matters remains at high levels. Political and public sentiment regarding financial institutions has in the past resulted and may in the future result in a significant amount of adverse press coverage, as well as adverse statements or charges by regulators or other government officials. Press coverage and other public statements that assert some form of wrongdoing (including, in some cases, press coverage and public statements that do not directly involve us) often result in some type of investigation by regulators, legislators and law enforcement officials or in lawsuits.

Responding to these investigations and lawsuits, regardless of the ultimate outcome of the proceeding, is time-consuming and expensive and can divert the time and effort of our senior management from our business. Penalties and fines sought by regulatory authorities have increased substantially and certain regulators have been more likely in recent years to commence enforcement actions or to support legislation targeted at the financial services industry. Governmental authorities may also be more likely to pursue criminal or other actions, including seeking admissions of wrongdoing or guilty pleas, in connection with the resolution of an inquiry or investigation to the extent a company is viewed as having previously engaged in criminal, regulatory or other misconduct. Adverse publicity, governmental scrutiny and legal and enforcement proceedings can also have a negative impact on our reputation and on the morale and performance of our employees, which could adversely affect our businesses and results of operations. Further, we are subject to regulatory settlements, orders and feedback that require significant remediation activities and enhancements to existing controls, systems and procedures, which has required and will require us to commit significant resources, including hiring, as well as testing the operation and effectiveness of new controls, policies and procedures. The failure to complete these remediation activities in a timely manner could lead to higher operating expenses, reputational damage and other negative consequences.

The financial services industry generally and our businesses in particular have been subject to negative publicity. Our reputation and businesses may be adversely affected by negative publicity or information regarding our businesses and personnel, whether or not accurate or true, that may be posted on social media or other internet forums or published by news organizations. Postings on these types of forums may also adversely impact risk positions of our clients and other parties that owe us money, securities or other assets and increase the chance that they will not perform their obligations to us or reduce the revenues we receive from their use of our services. The speed and pervasiveness with which information can be disseminated through these channels, in particular social media, may magnify risks relating to negative publicity.

The rapid dissemination of negative information through social media, in part, is believed to have led to the collapse of Silicon Valley Bank (SVB). SVB suffered a level of deposit withdrawals within a time period not previously experienced by a financial institution. We could also be subject to rapid deposit withdrawals or other outflows as a result of negative social media posts or other negative publicity.

Substantial civil or criminal liability or significant regulatory action against us could have material adverse financial effects or cause us significant reputational harm, which in turn could seriously harm our business prospects.

We face significant legal risks in our businesses, and the volume of claims and amount of damages and penalties claimed in litigation and regulatory proceedings against financial institutions remain high. See Notes 18 and 27 to the consolidated financial statements in Part II, Item 8 of this Form 10-K for information about certain of our legal and regulatory proceedings and investigations. We have seen legal claims by consumers and clients increase in a market downturn and employment-related claims increase following periods in which we have reduced our headcount. Additionally, governmental entities have been plaintiffs and are parties in certain of our legal proceedings, and we may face future civil or criminal actions or claims by the same or other governmental entities, as well as follow-on civil litigation that is often commenced after regulatory settlements.

Significant settlements by large financial institutions, including, in some cases, us, with governmental entities have become common. The trend of large settlements with governmental entities may adversely affect the outcomes for other financial institutions, including, in some cases, us, in similar actions, especially where governmental officials have announced that the large settlements will be used as the basis or a template for other settlements. The uncertain regulatory enforcement environment makes it difficult to estimate probable losses, which can lead to substantial disparities between legal reserves and subsequent actual settlements or penalties.

Claims of collusion or anti-competitive conduct have become more common. Financial institutions (including us) have been subject to civil cases and investigatory demands relating to alleged bid-rigging, group boycotts or other anti-competitive practices. Antitrust laws generally provide for joint and several liability and treble damages. These claims have resulted in significant settlements and fines in the past and may do so in the future.

We are subject to laws and regulations worldwide, including the FCPA and the U.K. Bribery Act, relating to corrupt and illegal payments to, and hiring practices with regard to, government officials and others. Violation of these or similar laws and regulations have in the past resulted in and could in the future result in significant monetary penalties. Such violations could also result in severe restrictions on our activities and damage to our reputation.

Certain law enforcement authorities have recently required admissions of wrongdoing, and, in some cases, criminal pleas, as part of the resolutions of matters brought against financial institutions or their employees. See for example, “1MDB-Related Matters” in Note 27 to the consolidated financial statements in Part II, Item 8 of this Form 10-K. Any such resolution of a criminal matter involving us or our employees could lead to increased exposure to civil litigation, could adversely affect our reputation, could result in penalties or limitations on our ability to conduct our activities generally or in certain circumstances and could have other negative effects. Further, as a result of this type of settlement, we are no longer a “well-known seasoned issuer,” which places limitations on the manner in which we can market our securities.

In conducting our businesses around the world, we are subject to political, legal, regulatory and other risks that are inherent in operating in many countries.

In conducting our businesses and supporting our global operations, we are subject to risks of possible nationalization, expropriation, price controls, capital controls, exchange controls, communications and other content restrictions, and other restrictive governmental actions. For example, sanctions have been imposed by the U.S. and the E.U. on certain individuals and companies in Russia and Venezuela. In many countries, the laws and regulations applicable to the securities and financial services industries and many of the transactions in which we are involved are uncertain and evolving, and it may be difficult for us to determine the exact requirements of local laws in every market. We have been in some cases subject to divergent and conflicting laws and regulations across markets, and we are increasingly subject to the risk that the jurisdictions in which we operate have implemented or may implement laws and regulations that directly conflict with those of another jurisdiction. Any determination by local regulators that we have not acted in compliance with the application of local laws in a particular market or our failure to develop effective working relationships with local regulators could have a significant and negative effect not only on our businesses in that market, but also on our reputation generally. Further, in some jurisdictions a failure, or alleged failure, to comply with laws and regulations has subjected and may in the future subject us and our personnel not only to civil actions, but also criminal actions and other sanctions. We are also subject to the enhanced risk that transactions we structure might not be legally enforceable in all cases.

While business and other practices throughout the world differ, our principal entities are subject in their operations worldwide to rules and regulations relating to corrupt and illegal payments, hiring practices and money laundering, as well as laws relating to doing business with certain individuals, groups and countries, such as the FCPA, the BSA and the U.K. Bribery Act. While we have invested and continue to invest significant resources in training and in compliance monitoring, the geographical diversity of our operations, employees, clients and consumers, as well as the vendors and other third parties that we deal with, greatly increases the risk that we may be found in violation of such rules or regulations and any such violation could subject us to significant penalties or adversely affect our reputation. See for example, “1MDB-Related Matters” in Note 27 to the consolidated financial statements in Part II, Item 8 of this Form 10-K.

In addition, there have been a number of highly publicized cases around the world, involving actual or alleged fraud or other misconduct by employees in the financial services industry, and we have had and may in the future have employee misconduct. This misconduct has included and may also in the future include intentional efforts to ignore or circumvent applicable policies, rules or procedures or misappropriation of funds and the theft of proprietary information, including proprietary software. It is not always possible to deter or prevent employee misconduct and the precautions we take to prevent and detect this activity have not been and may not be effective in all cases, as reflected by the settlements relating to 1MDB.

The application of regulatory strategies and requirements in the U.S. and in non-U.S. jurisdictions to facilitate the orderly resolution of large financial institutions could create greater risk of loss for Group Inc.'s security holders.

As described in "Business — Regulation — Banking Supervision and Regulation — Insolvency of an IDI or a BHC," if the FDIC is appointed as receiver under OLA, the rights of Group Inc.'s creditors would be determined under OLA, and substantial differences exist in the rights of creditors between OLA and the U.S. Bankruptcy Code, including the right of the FDIC under OLA to disregard the strict priority of creditor claims in some circumstances, which could have a material adverse effect on our debtholders.

The FDIC has announced that a single point of entry strategy may be a desirable strategy under OLA to resolve a large financial institution in a manner that would, among other things, impose losses on shareholders, debtholders and other creditors of the top-tier BHC (in our case, Group Inc.), while the BHC's subsidiaries may continue to operate. It is possible that the application of the single point of entry strategy under OLA, in which Group Inc. would be the only entity to enter resolution proceedings (and its material broker-dealer, bank and other operating entities would not enter resolution proceedings), would result in greater losses to Group Inc.'s security holders (including holders of our fixed rate, floating rate and indexed debt securities), than the losses that would result from the application of a bankruptcy proceeding or a different resolution strategy, such as a multiple point of entry resolution strategy for Group Inc. and certain of its material subsidiaries.

Assuming Group Inc. entered resolution proceedings and support from Group Inc. or other resources available to its subsidiaries was sufficient to enable the subsidiaries to remain solvent, losses at the subsidiary level would be transferred to Group Inc. and ultimately borne by Group Inc.'s security holders, third-party creditors of Group Inc.'s subsidiaries would receive full recoveries on their claims, and Group Inc.'s security holders (including our shareholders, debtholders and other unsecured creditors) could face significant and possibly complete losses. In that case, Group Inc.'s security holders would face losses while the third-party creditors of Group Inc.'s subsidiaries would incur no losses because the subsidiaries would continue to operate and would not enter resolution or bankruptcy proceedings. In addition, holders of Group Inc.'s eligible long-term debt and holders of Group Inc.'s other debt securities could face losses ahead of its other similarly situated creditors in a resolution under OLA if the FDIC exercised its right, described above, to disregard the priority of creditor claims.

OLA also provides the FDIC with authority to cause creditors and shareholders of the financial company in receivership to bear losses before taxpayers are exposed to such losses, and amounts owed to the U.S. government would generally receive a statutory payment priority over the claims of private creditors, including senior creditors.

In addition, under OLA, claims of creditors (including debtholders) could be satisfied through the issuance of equity or other securities in a bridge entity to which Group Inc.'s assets are transferred. If such a securities-for-claims exchange were implemented, there can be no assurance that the value of the securities of the bridge entity would be sufficient to repay or satisfy all or any part of the creditor claims for which the securities were exchanged. While the FDIC has issued regulations to implement OLA, not all aspects of how the FDIC might exercise this authority are known and additional rulemaking is possible.

In addition, certain jurisdictions, including the U.K. and the E.U., have implemented resolution regimes to provide resolution authorities with the ability to recapitalize a failing entity by writing down its unsecured debt or converting its unsecured debt into equity. Such “bail-in” powers are intended to enable the recapitalization of a failing institution by allocating losses to its shareholders and unsecured debtholders. For example, the Bank of England requires a certain amount of intercompany funding that we provide to our material U.K. subsidiaries to contain a contractual trigger to expressly permit the Bank of England to exercise such “bail-in” powers in certain circumstances. If the intercompany funding we provide to our subsidiaries is “bailed in,” Group Inc.’s claims on its subsidiaries would be subordinated to the claims of the subsidiaries’ third-party creditors or written down. U.S. regulators are considering and non-U.S. authorities have adopted requirements that certain subsidiaries of large financial institutions maintain minimum amounts of total loss-absorbing capacity that would pass losses up from the subsidiaries to the top-tier BHC and, ultimately, to security holders of the top-tier BHC in the event of failure.

The application of Group Inc.’s proposed resolution strategy could result in greater losses for Group Inc.’s security holders.

In our resolution plan, Group Inc. would be resolved under the U.S. Bankruptcy Code. The strategy described in our resolution plan is a variant of the single point of entry strategy: Group Inc. and Goldman Sachs Funding LLC (Funding IHC), a wholly-owned, direct subsidiary of Group Inc., would recapitalize and provide liquidity to certain major subsidiaries, including through the forgiveness of intercompany indebtedness, the extension of the maturities of intercompany indebtedness and the extension of additional intercompany loans. If this strategy were successful, creditors of some or all of Group Inc.’s major subsidiaries would receive full recoveries on their claims, while Group Inc.’s security holders could face significant and possibly complete losses.

To facilitate the execution of our resolution plan, we formed Funding IHC. In exchange for an unsecured subordinated funding note and equity interest, Group Inc. transferred certain intercompany receivables and substantially all of its GCLA to Funding IHC, and agreed to transfer additional GCLA above prescribed thresholds.

We also put in place a Capital and Liquidity Support Agreement (CLSA) among Group Inc., Funding IHC and our major subsidiaries. Under the CLSA, Funding IHC has provided Group Inc. with a committed line of credit that allows Group Inc. to draw sufficient funds to meet its cash needs during the ordinary course of business. In addition, if our financial resources deteriorate so severely that resolution may be imminent, (i) the committed line of credit will automatically terminate and the unsecured subordinated funding note will automatically be forgiven, (ii) all intercompany receivables owed by the major subsidiaries to Group Inc. will be transferred to Funding IHC or their maturities will be extended to five years, (iii) Group Inc. will be obligated to transfer substantially all of its remaining intercompany receivables and GCLA (other than an amount to fund anticipated bankruptcy expenses) to Funding IHC, and (iv) Funding IHC will be obligated to provide capital and liquidity support to the major subsidiaries. Group Inc.’s and Funding IHC’s obligations under the CLSA are secured pursuant to a related security agreement. Such actions would materially and adversely affect Group Inc.’s liquidity. As a result, during a period of severe stress, Group Inc. might commence bankruptcy proceedings at an earlier time than it otherwise would if the CLSA and related security agreement had not been implemented.

If Group Inc.’s proposed resolution strategy were successful, Group Inc.’s security holders could face losses while the third-party creditors of Group Inc.’s major subsidiaries would incur no losses because those subsidiaries would continue to operate and not enter resolution or bankruptcy proceedings. As part of the strategy, Group Inc. could also seek to elevate the priority of its guarantee obligations relating to its major subsidiaries’ derivative contracts or transfer them to another entity so that cross-default and early termination rights would be stayed under the ISDA Protocols, as applicable, which would result in holders of Group Inc.’s eligible long-term debt and holders of Group Inc.’s other debt securities incurring losses ahead of the beneficiaries of those guarantee obligations. It is also possible that holders of Group Inc.’s eligible long-term debt and other debt securities could incur losses ahead of other similarly situated creditors of Group Inc.’s major subsidiaries.

If Group Inc.’s proposed resolution strategy were not successful, Group Inc.’s financial condition would be adversely impacted and Group Inc.’s security holders, including debtholders, may as a consequence be in a worse position than if the strategy had not been implemented. In all cases, any payments to debtholders are dependent on our ability to make such payments and are therefore subject to our credit risk.

As a result of our recovery and resolution planning processes, including incorporating feedback from our regulators, we may incur increased operational, funding or other costs and face limitations on our ability to structure our internal organization or engage in internal or external activities in a manner that we may otherwise deem most operationally efficient.

Our commodities activities, particularly our physical commodities activities, subject us to extensive regulation and involve certain potential risks, including environmental, reputational and other risks that may expose us to significant liabilities and costs.

As part of our commodities business, we purchase and sell certain physical commodities, arrange for their storage and transport, and engage in market making of commodities. The commodities involved in these activities may include crude oil, refined oil products, natural gas, liquefied natural gas, electric power, agricultural products, metals (base and precious), minerals (including unenriched uranium), emission credits, coal, freight and related products and indices.

We make investments in and finance entities that engage in the production, storage and transportation of numerous commodities, including many of the commodities referenced above.

These activities subject us and/or the entities in which we invest to extensive and evolving federal, state and local energy, environmental, antitrust and other governmental laws and regulations worldwide, including environmental laws and regulations relating to, among others, air quality, water quality, waste management, transportation of hazardous substances, natural resources, site remediation and health and safety. Additionally, rising climate change concerns have led to additional regulation, regulatory scrutiny and disclosure obligations that have increased and could further increase the operating costs and could adversely affect the profitability of certain of our investments and activities.

There may be substantial costs in complying with current or future laws and regulations relating to our commodities-related activities and investments. Compliance with these laws and regulations requires significant commitments of capital toward environmental monitoring, renovation of storage facilities or transport vessels, payment of emission fees and carbon or other taxes, and application for, and holding of, permits and licenses.

Commodities involved in our intermediation activities and investments are also subject to the risk of unforeseen or catastrophic events, which are likely to be outside of our control, including those arising from the breakdown or failure of transport vessels, storage facilities or other equipment or processes or other mechanical malfunctions, fires, leaks, spills or release of hazardous substances, performance below expected levels of output or efficiency, terrorist attacks, extreme weather events or other natural disasters or other hostile or catastrophic events. In addition, we rely on third-party suppliers or service providers to perform their contractual obligations and any failure on their part, including the failure to obtain raw materials at reasonable prices or to safely transport or store commodities, could expose us to costs or losses. Also, while we seek to insure against potential risks, we do not have insurance to cover some of these risks and the insurance that we have may be inadequate to cover our losses.

The occurrence of any of such events may prevent us from performing under our agreements with clients, may impair our operations or financial results and may result in litigation, regulatory action, negative publicity or other reputational harm.

We have made changes to and may also be required to divest or discontinue certain of these activities for regulatory or legal reasons or due to the transition to a less carbon-dependent economy in response to climate change.

Competition

Our results have been and may in the future be adversely affected by the composition of our client base.

Our client base is not the same as that of our major competitors. Our businesses may have a higher or lower percentage of clients in certain industries or markets than some or all of our competitors. Therefore, unfavorable industry developments or market conditions affecting certain industries or markets have resulted in the past and may result in the future in our businesses underperforming relative to similar businesses of a competitor if our businesses have a higher concentration of clients in such industries or markets. For example, our market-making businesses have a higher percentage of clients with actively managed assets than some of our competitors and such clients have in the past been and may in the future be disproportionately affected by low volatility.

Correspondingly, favorable or simply less adverse developments or market conditions involving industries or markets in a business where we have a lower concentration of clients in such industry or market have also resulted in the past and may result in the future in our underperforming relative to a similar business of a competitor that has a higher concentration of clients in such industry or market. For example, we have a smaller corporate client base in our market-making businesses than some of our peers and therefore those competitors may benefit more from increased activity by corporate clients. Similarly, we have not historically engaged in retail equities intermediation to the same extent as other financial institutions, which has in the past affected and could in the future adversely affect our market share in equities execution.

The financial services industry is highly competitive.

The financial services industry and all of our businesses are intensely competitive, and we expect them to remain so. We compete on the basis of a number of factors, including transaction execution, our products and services, innovation, reputation, creditworthiness and price. There has been substantial consolidation and convergence among companies in the financial services industry. This has hastened the globalization of the securities and other financial services markets. As a result, we have had to commit capital to support our international operations and to execute large global transactions. As we have expanded into new business areas and new geographic regions, we have faced competitors with more experience and more established relationships with clients, regulators and industry participants in the relevant market, which could adversely affect our ability to expand our businesses.

Governments and regulators have adopted regulations, imposed taxes, adopted compensation restrictions or otherwise put forward various proposals that have impacted or may impact our ability to conduct certain of our businesses in a cost-effective manner or at all in certain or all jurisdictions, including proposals relating to restrictions on the type of activities in which financial institutions are permitted to engage. These or other similar rules, many of which do not apply to all our U.S. or non-U.S. competitors, could impact our ability to compete effectively.

Pricing and other competitive pressures in our businesses have continued to increase, particularly in situations where some of our competitors may seek to increase market share by reducing prices. For example, in connection with investment banking and other assignments, in response to competitive pressure we have experienced, we have extended and priced credit at levels that in some cases have not fully compensated us for the risks we undertook.

The financial services industry is highly interrelated in that a significant volume of transactions occur among a limited number of members of that industry. Many transactions are syndicated to other financial institutions, and financial institutions are often counterparties in transactions. This has led to claims by other market participants and regulators that such institutions have colluded in order to manipulate markets or market prices, including allegations that antitrust laws have been violated. While we have extensive procedures and controls that are designed to identify and prevent such activities, they may not be effective. Allegations of such activities, particularly by regulators, can have a negative reputational impact and can subject us to large fines and settlements, and potentially significant penalties, including treble damages.

The growth of electronic trading and the introduction of new products and technologies, including trading and distributed ledger technologies, including cryptocurrencies, has increased competition.

Technology is fundamental to our business and our industry. The growth of electronic trading and the introduction of new technologies is changing our businesses and presenting us with new challenges. Securities, futures and options transactions are increasingly occurring electronically, both on our own systems and through other alternative trading systems, and it appears that the trend toward alternative trading systems will continue. Some of these alternative trading systems compete with us, particularly our exchange-based market-making activities, and we may experience continued competitive pressures in these and other areas. In addition, the increased use by our clients of low-cost electronic trading systems and direct electronic access to trading markets has caused and could continue to cause a reduction in commissions and spreads. As our clients increasingly use our systems to trade directly in the markets, we may incur liabilities as a result of their use of our order routing and execution infrastructure.

We have invested significant resources into the development of electronic trading systems and expect to continue to do so, but there is no assurance that the revenues generated by these systems will yield an adequate return, particularly given the generally lower commissions arising from electronic trades.

In addition, the emergence, adoption and evolution of new technologies, including distributed ledgers, such as digital assets and blockchain, and AI, have required us to invest resources to adapt our existing products and services, and we expect to continue to make such investments, which could be material. The adoption and evolution of such new technologies may also increase our compliance and regulatory costs. Further, technologies, such as those based on distributed ledgers, that do not require intermediation could also significantly disrupt payments processing and other financial services. Regulatory limitations on our involvement in products and platforms involving digital assets and distributed ledger technologies may not apply equally or in some cases at all to certain of our competitors. We may not be as timely or successful in developing or integrating, or even able to develop or integrate, new products and technologies, such as those built on distributed ledgers or AI technologies, into our existing products and services, adapting to changes in client preferences or achieving market acceptance of our products and services, any of which could affect our ability to attract or retain clients, cause us to lose market share or result in service disruptions and in turn reduce our revenues or otherwise adversely affect us.

Our businesses would be adversely affected if we are unable to hire and retain qualified employees.

Our performance is largely dependent on the talents and efforts of highly skilled people; therefore, our continued ability to compete effectively in our businesses, to manage our businesses effectively and to expand into new businesses and geographic areas depends on our ability to attract new talented and diverse employees and to retain and motivate our existing employees. Factors that affect our ability to attract and retain such employees include the level and composition of our compensation and benefits, and our reputation as a successful business with a culture of fairly hiring, training and promoting qualified employees. As a significant portion of the compensation that we pay to our employees is in the form of year-end discretionary compensation, a significant portion of which is in the form of deferred equity-related awards, declines in our profitability, or in the outlook for our future profitability, as well as regulatory limitations on compensation levels and terms, can negatively impact our ability to hire and retain highly qualified employees.

Competition from within the financial services industry and from businesses outside the financial services industry, including the technology industry, for qualified employees has often been intense. We have experienced increased competition in hiring and retaining employees to address the demands of our consumer-oriented businesses and our technology initiatives. This is also the case in emerging and growth markets, where we are often competing for qualified employees with entities that have a significantly greater presence or more extensive experience in the region.

Laws or regulations in jurisdictions in which our operations are located that affect taxes on our employees' income or the amount or composition of compensation, or that require us to disclose our or our competitors' compensation practices, may also adversely affect our ability to hire and retain qualified employees in those jurisdictions.

As described further in "Business — Regulation — Compensation Practices" in Part I, Item 1 of this Form 10-K, our compensation practices are subject to review by, and the standards of, the FRB. As a large global financial and banking institution, we are subject to limitations on compensation practices (which may or may not affect the companies with which we compete for talent) by the FRB, the PRA, the FCA, the FDIC and other regulators worldwide. These limitations have shaped our compensation practices, which has, in some cases, adversely affected our ability to attract and retain talented employees, in particular in relation to companies not subject to these limitations, and future legislation or regulation may have similar adverse effects.

Our operating expenses and efficiency ratio depend, in part, on our overall headcount and the proportion of our employees located in strategic locations. Our future human capital resource requirements and the benefits provided by strategic locations are uncertain, and we may not realize the benefits we anticipate.

Market Developments and General Business Environment

Our businesses, financial condition, liquidity and results of operations have been and may in the future be adversely affected by unforeseen or catastrophic events, including pandemics, terrorist attacks, wars, extreme weather events or other natural disasters.

The occurrence of unforeseen or catastrophic events, including pandemics or other widespread health emergencies (or concerns over the possibility of such an emergency), terrorist attacks, wars, extreme weather events, solar events or other natural disasters, could adversely affect our business, financial condition, liquidity and results of operations. These events could have such effects through economic or financial market disruptions or challenging economic or market conditions more generally, the deterioration of our creditworthiness or that of our counterparties, changes in consumer sentiment and consumer borrowing, spending and savings patterns, liquidity stress, or operational difficulties (such as travel limitations and limitations on occupancy in our offices) that impair our ability to manage our businesses.

Climate change could disrupt our businesses and adversely affect client activity levels and the creditworthiness of our clients and counterparties, and our actual or perceived action or inaction relating to climate change could result in damage to our reputation.

Climate change may cause extreme weather events that disrupt operations at one or more of our primary locations, which may negatively affect our ability to service and interact with our clients, adversely affect the value of our investments, including our real estate investments, and reduce the availability or increase the cost of insurance. Climate change and the transition to a less carbon-dependent economy may also have a negative impact on the operations or financial condition of our clients and counterparties, which may decrease revenues from those clients and counterparties and increase the credit risk associated with loans and other credit exposures to those clients and counterparties. In addition, climate change may impact the broader economy.

We are also exposed to risks resulting from changes in public policy, laws and regulations, or market and public perceptions and preferences in connection with the transition to a less carbon-dependent economy. These changes could adversely affect our business, results of operations and reputation. For example, our reputation and client relationships may be damaged as a result of our or our clients' involvement in, or decision not to participate in, certain industries or projects perceived to be associated with causing or exacerbating climate change, as well as any decisions we make to continue to conduct or change our activities in response to considerations relating to climate change. If we are unable to achieve our objectives relating to climate change or our response to climate change is perceived to be ineffective, insufficient or otherwise inappropriate, our business, reputation and efforts to recruit and retain employees may suffer.

New regulations or guidance relating to climate change, as well as the perspectives of government officials, regulators, shareholders, employees and other stakeholders regarding climate change, may affect whether and on what terms and conditions we engage in certain activities or offer certain products. Federal and state, and non-U.S. banking regulators and supervisory authorities, shareholders and other stakeholders have increasingly viewed financial institutions as playing an important role in helping to address risks related to climate change, both directly and with respect to their clients, which may result in financial institutions coming under increased requirements and expectations regarding the disclosure and management of their climate risks and related lending, investment and advisory activities. For example, in 2023 we participated in a pilot climate scenario analysis exercise conducted by the FRB. We are also subject to interagency guidance jointly issued by the FRB, FDIC, and OCC in October 2023 regarding principles for climate-related financial risk management for large financial institutions. In addition, in December 2022, the NYDFS issued proposed guidance on the management of material financial risks from climate change, which would apply to New York State-regulated banking and mortgage institutions, including GS Bank USA. In the E.U., the CSRD will become effective beginning with year-end 2024 reporting. The CSRD expands the scope of ESG disclosure required under E.U. rules. These regulations, guidance and expectations, as well as any additional or heightened requirements, could result in increased regulatory, compliance or other costs or higher capital requirements. The risks associated with, and the perspective of regulators, shareholders, employees and other stakeholders regarding, climate change are continuing to evolve rapidly, which can make it difficult to assess the ultimate impact on us of climate change-related risks and uncertainties, but we expect that climate change-related risks will increase over time.

Our business, financial condition, liquidity and results of operations have been adversely affected by disruptions in the global economy caused by conflicts, and related sanctions and other developments.

The conflict between Russia and Ukraine has negatively affected the global economy. Governments around the world have responded to Russia's invasion by imposing economic sanctions and export controls on certain industry sectors, including price caps on Russian oil, and on Russian businesses and persons. Compliance with economic sanctions and restrictions imposed by governments has increased our costs and otherwise adversely affected our business and may continue to do so. Russia has responded with its own restrictions against investors and countries outside Russia and has proposed additional measures aimed at non-Russian owned businesses. Businesses in the U.S. and globally have experienced shortages in materials and increased costs for transportation, energy, and raw materials due in part to the negative effects of the conflict on the global economy.

The conflicts in the Middle East could also affect and harm our business and increase market uncertainty. The impact of these conflicts on our business and operations is uncertain and therefore cannot be predicted.

The escalation or continuation of these conflicts or other hostilities could result in, among other things, an increased risk of cyber attacks, an increased frequency and volume of failures to settle securities transactions, supply chain disruptions, higher inflation, lower consumer demand and increased volatility in commodity, currency and other financial markets. The extent and duration of the conflicts, sanctions and resulting market disruptions are impossible to predict, and the consequences for our business could be significant. If international political instability and geopolitical tensions continue or increase in any region in which we do business, our business and results of operations could be harmed. See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Risk Management — Credit Risk Management — Selected Exposures — Country Exposures" for further information about our credit exposure to Russia and Ukraine.

Certain of our businesses and our funding instruments may be adversely affected by changes in reference rates, currencies, indexes, baskets or ETFs to which products we offer or funding that we raise are linked.

Many of the products that we own or that we offer, such as structured notes, warrants, swaps or security-based swaps, pay interest or determine the principal amount to be paid at maturity or in the event of default by reference to rates or by reference to an index, currency, basket, ETF or other financial metric (the underlier). In the event that the composition of the underlier is significantly changed, by reference to rules governing such underlier or otherwise, the underlier ceases to exist (for example, in the event that a country withdraws from the Euro or links its currency to or delinks its currency from another currency or benchmark, an index or ETF sponsor materially alters the composition of an index or ETF, or stocks in a basket are delisted or become impermissible to be included in the index or ETF), the underlier ceases to be recognized as an acceptable market benchmark or there are legal or regulatory constraints on linking a financial instrument to the underlier, we may experience adverse effects.

Our business, financial condition, liquidity and results of operations may be adversely affected by disruptions in the global economy caused by escalating tensions between the U.S. and China.

Continued or escalating tensions between the U.S. and China have resulted in and may result in additional changes to U.S. international trade and investment policies, which could disrupt international trade and investment, adversely affect financial markets, including market activity levels, and adversely impact our revenues. Continued or escalating tensions may also lead to the U.S., China or other countries taking other actions, which could include the implementation of sanctions, tariffs or foreign exchange measures, the large-scale sale of U.S. Treasury securities or restrictions on cross-border trade, investment or transfer of information or technology. Any such developments could adversely affect our or our clients' businesses, as well as our financial condition, liquidity and results of operations, possibly materially.

A conflict, or concerns about a potential conflict, involving China and Taiwan, the U.S. or other countries could negatively impact financial markets and our or our clients' businesses. Trade restrictions by the U.S. or other countries in response to a conflict or potential conflict involving China, including financial and economic sanctions and export controls against certain organizations or individuals, or actions taken by China in response to trade restrictions, could negatively impact our or our clients' ability to conduct business in certain countries or with certain counterparties and could negatively impact regional and global financial markets and economic conditions. Any of the foregoing could adversely affect our business, financial condition, liquidity and results of operations, possibly materially.

We face enhanced risks as we operate in new locations and transact with a broader array of clients and counterparties.

Our businesses, have in the past, and may in the future, bring us into contact, directly or indirectly, with individuals and entities that are not within our traditional client and counterparty base, expose us to new asset classes and new markets, and present us with integration challenges. For example, we continue to transact business and invest in new regions, including a wide range of emerging and growth markets, and we expect this trend to continue. Various emerging and growth market countries have experienced severe economic and financial disruptions, including significant devaluations of their currencies, defaults or threatened defaults on sovereign debt, capital and currency exchange controls, and low or negative growth rates in their economies. The possible effects of any of these conditions include an adverse impact on our businesses and increased volatility in financial markets generally.

Furthermore, in a number of our businesses, including where we make markets, invest and lend, we own interests in, or otherwise become affiliated with the ownership and operation of, public services, such as airports, toll roads and shipping ports, as well as physical commodities and commodities infrastructure components, both within and outside the U.S.

In our consumer-oriented activities, we have faced and continue to face, additional compliance, legal and regulatory risk, increased reputational risk and increased operational risk due to, among other things, higher transaction volumes and significantly increased retention and transmission of consumer and client information. We are also subject to additional legal requirements, including with respect to suitability and consumer protection (for example, Regulation Best Interest, fair lending laws and regulations and privacy laws and regulations). Further, identity fraud may increase and credit reporting practices may change in a manner that makes it more difficult for financial institutions, such as us, to evaluate the creditworthiness of consumers.

We have increased and intend to further increase our transaction banking activities. As a result, we face additional compliance, legal and regulatory risk, including with respect to know-your-customer, anti-money laundering and reporting requirements and prohibitions on transfers of property belonging to countries, entities and individuals subject to sanctions by U.S. or other governmental authorities. We are making significant enhancements to existing controls, systems and procedures to manage these risks.

New business initiatives expose us to new and enhanced risks, including risks associated with dealing with governmental entities, reputational concerns arising from dealing with different types of clients, business partners, counterparties and investors, greater regulatory scrutiny of these activities, increased credit-related, market, sovereign and operational risks, risks arising from accidents or acts of terrorism, and reputational concerns with the manner in which certain assets are being operated or held or in which we interact with these clients, business partners, counterparties and investors. Legal, regulatory and reputational risks may also exist in connection with activities and transactions involving new products or markets where there is regulatory uncertainty or where there are different or conflicting regulations depending on the regulator or the jurisdiction involved, particularly where transactions in such products may involve multiple jurisdictions.

We have developed and pursued new business and strategic initiatives, including acquisitions, and may continue to do so. If and to the extent we are unable to successfully execute those initiatives, we may incur unanticipated costs and losses, and face other adverse consequences, such as negative reputational effects. In addition, the actual effects of pursuing those initiatives may differ, possibly materially, from the benefits that we expect to realize from them, such as generating additional revenues, achieving expense savings, reducing operational risk exposures or using capital and funding more efficiently. Engaging in new activities exposes us to a variety of risks, including that we may be unable to successfully develop new, competitive, efficient and effective systems and processes, and hire and retain the necessary personnel. Due to our lack of historical experience with unsecured consumer lending, our loan loss assumptions may prove to be incorrect and we may incur losses significantly above those which we originally anticipated in entering the business or in expanding the product offerings for the business.

In recent years, we have invested, and may continue to invest, more in businesses that we expect will generate a higher level of more consistent revenues. Such investments and acquisitions may not be successful or have returns similar to our other businesses.

We may not be able to fully realize the expected benefits or synergies from acquisitions or other business initiatives in the time frames we expect, or at all.

We have engaged in selective acquisitions and may continue to do so in the future and these acquisitions may, individually or in the aggregate, be material to us. Any future acquisitions could involve the issuance of common stock and/or the payment of cash as consideration. The success of our acquisitions will depend, in part, on our ability to integrate the acquired businesses and realize anticipated synergies, cost savings and growth opportunities. For example, in the fourth quarter of 2023, we entered into an agreement to sell GreenSky and sold PFM, both of which we had previously acquired, and in connection with the GreenSky disposition incurred a write-down of intangible assets and goodwill. We may face numerous risks and uncertainties in combining and integrating the relevant businesses and systems, including the need to combine or separate accounting and data processing systems and management controls and to integrate relationships with clients, counterparties, regulators and others in connection with acquisitions. Integration of acquired businesses is time-consuming and could disrupt our ongoing businesses, produce unforeseen regulatory or operating difficulties, cause us to incur incremental expenses or require incremental financial, management and other resources. It is also possible that an acquisition, once announced, may not close due to the failure to satisfy applicable closing conditions, such as the receipt of necessary shareholder or regulatory approvals.

There is no assurance that any of our acquisitions will be successfully integrated or yield all of the expected benefits and synergies in the time frames that we expect, or at all. If we are not able to integrate our acquisitions successfully, our results of operations, financial condition and cash flows could be adversely affected.

Item 1B. Unresolved Staff Comments

There are no material unresolved written comments that were received from the SEC staff 180 days or more before the end of our fiscal year relating to our periodic or current reports under the Exchange Act.

Item 1C. Cybersecurity

See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Risk Management — Cybersecurity Risk Management" in Part II, Item 7 of this Form 10-K for further information about cybersecurity.

Item 2. Properties

In the U.S. and elsewhere in the Americas, we have offices consisting of approximately 6.6 million square feet of leased and owned space. Our principal executive offices are located at 200 West Street, New York, New York and consist of approximately 2.1 million square feet. The building is located on a parcel leased from Battery Park City Authority pursuant to a ground lease. Under the lease, Battery Park City Authority holds title to all improvements, including the office building, subject to our right of exclusive possession and use until June 2069, the expiration date of the lease. Under the terms of the ground lease, we made a lump sum ground rent payment in June 2007 of $161 million for rent through the term of the lease.

In Europe, the Middle East and Africa, we have offices consisting of approximately 1.9 million square feet of leased and owned space. Our European headquarters is located in London at Plumtree Court, consisting of approximately 826,000 square feet under a lease which can be terminated in 2039.

In Asia, Australia and New Zealand, we have offices consisting of approximately 3.1 million square feet, including our offices in India, and regional headquarters in Tokyo and Hong Kong. In India, we have offices with approximately 1.8 million square feet, the majority of which have leases that will expire starting in 2028.

In the preceding paragraphs, square footage figures are provided only for properties that are used in the operation of our businesses. We regularly evaluate our space capacity in relation to current and projected headcount. We may incur exit costs in the future if we (i) reduce our space capacity or (ii) commit to, or occupy, new properties in locations in which we operate and dispose of existing space that had been held for potential growth. These costs may be material to our operating results in a given period.

Item 3. Legal Proceedings

We are involved in a number of judicial, regulatory and arbitration proceedings concerning matters arising in connection with the conduct of our businesses. Many of these proceedings are in early stages, and many of these cases seek an indeterminate amount of damages. We have estimated the upper end of the range of reasonably possible aggregate loss for matters where we have been able to estimate a range and we believe, based on currently available information, that the results of matters where we have not been able to estimate a range of reasonably possible loss, in the aggregate, will not have a material adverse effect on our financial condition, but may be material to our operating results in a given period. Given the range of litigation and investigations presently under way, our litigation expenses may remain high. See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Use of Estimates" in Part II, Item 7 of this Form 10-K. See Notes 18 and 27 to the consolidated financial statements in Part II, Item 8 of this Form 10-K for information about our reasonably possible aggregate loss estimate and judicial, regulatory and legal proceedings.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

The principal market on which our common stock is traded is the NYSE under the symbol "GS." Information relating to the performance of our common stock from December 31, 2018 through December 31, 2023 is set forth in "Supplemental Financial Information – Common Stock Performance" in Part II, Item 8 of this Form 10-K. As of February 9, 2024, there were 5,543 holders of record of our common stock.

The table below presents purchases made by or on behalf of Group Inc. or any "affiliated purchaser" (as defined in Rule 10b-18(a)(3) under the Exchange Act) of our common stock during the fourth quarter of 2023.

	Total Shares Purchased	Average Price Paid Per Share	Total Shares Purchased as Part of a Publicly Announced Program	Dollar Value of Remaining Authorized Repurchases *($ in millions)*
October	**1,666,259**	**$ 300.07**	**1,666,259**	**$ 24,704**
November	**1,548,116**	**$ 322.97**	**1,548,116**	**$ 24,204**
December	**—**	**—**	**—**	**$ 24,204**
Total	**3,214,375**		**3,214,375**	

In February 2023, our Board approved a share repurchase program authorizing repurchases of up to $30 billion of our common stock. This program replaced our previous share repurchase program and has no set expiration or termination date. The share repurchases are effected primarily through regular open-market purchases (which may include repurchase plans designed to comply with Rule 10b5-1 and accelerated share repurchases), the amounts and timing of which are determined primarily by our current and projected capital position, and capital deployment opportunities, but which may also be influenced by general market conditions and the prevailing price and trading volumes of our common stock. See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Capital Management and Regulatory Capital — Capital Management — Share Repurchase Program" in Part II, Item 7 of this Form 10-K for further information.

Information relating to compensation plans under which our equity securities are authorized for issuance is presented in Part III, Item 12 of this Form 10-K.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Introduction

The Goldman Sachs Group, Inc. (Group Inc. or parent company), a Delaware corporation, together with its consolidated subsidiaries, is a leading global financial institution that delivers a broad range of financial services to a large and diversified client base that includes corporations, financial institutions, governments and individuals. Founded in 1869, we are headquartered in New York and maintain offices in all major financial centers around the world. We manage and report our activities in three business segments: Global Banking & Markets, Asset & Wealth Management and Platform Solutions. See "Results of Operations" for further information about our business segments.

When we use the terms "we," "us" and "our," we mean Group Inc. and its consolidated subsidiaries. When we use the term "our subsidiaries," we mean the consolidated subsidiaries of Group Inc. References to "this Form 10-K" are to our Annual Report on Form 10-K for the year ended December 31, 2023. All references to "the consolidated financial statements" or "Supplemental Financial Information" are to Part II, Item 8 of this Form 10-K. All references to 2023, 2022 and 2021 refer to our years ended, or the dates, as the context requires, December 31, 2023, December 31, 2022 and December 31, 2021, respectively. Any reference to a future year refers to a year ending on December 31 of that year. Certain reclassifications have been made to previously reported amounts to conform to the current presentation.

Group Inc. is a bank holding company and a financial holding company regulated by the Board of Governors of the Federal Reserve System (FRB).

In this discussion and analysis of our financial condition and results of operations, we have included information that constitutes "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are not historical facts or statements of current conditions, but instead represent only our beliefs regarding future events, many of which, by their nature, are inherently uncertain and outside our control.

By identifying these statements for you in this manner, we are alerting you to the possibility that our actual results, financial condition, liquidity and capital actions may differ, possibly materially, from the anticipated results, financial condition, liquidity and capital actions in these forward-looking statements. Important factors that could cause our results, financial condition, liquidity and capital actions to differ from those in these statements include, among others, those described in "Risk Factors" in Part I, Item 1A of this Form 10-K and "Forward-Looking Statements" in Part I, Item 1 of this Form 10-K.

These statements may relate to, among other things, (i) our future plans and results, including our target return on average common shareholders' equity (ROE), return on average tangible common shareholders' equity (ROTE), efficiency ratio, Common Equity Tier 1 (CET1) capital ratio and firmwide assets under supervision (AUS) inflows, and how they can be achieved, (ii) trends in or growth opportunities for our businesses, including the timing, costs, profitability, benefits and other aspects of business and strategic initiatives and their impact on our efficiency ratio, (iii) our level of future compensation expense, including as a percentage of both operating expenses and net revenues, net of provision for credit losses, (iv) our Investment banking fees backlog and future results, (v) our expected interest income and interest expense, (vi) our expense savings and strategic locations initiatives, (vii) expenses we may incur, including future litigation expense, (viii) the projected growth of our deposits and other funding, asset liability management and funding strategies and related interest expense savings, (ix) our business initiatives, including transaction banking, (x) our planned 2024 benchmark debt issuances, (xi) the amount, composition and location of global core liquid assets (GCLA) we expect to hold, (xii) our credit exposures, (xiii) our expected provision for credit losses, (xiv) the adequacy of our allowance for credit losses, (xv) the narrowing of our consumer business, (xvi) the objectives and effectiveness of our business continuity planning (BCP), information security program, risk management and liquidity policies, (xvii) our resolution plan and strategy and their implications for stakeholders, (xviii) the design and effectiveness of our resolution capital and liquidity models and triggers and alerts framework, (xix) the results of stress tests, the effect of changes to regulations, and our future status, activities or reporting under banking and financial regulation, (xx) our expected tax rate, (xxi) the future state of our liquidity and regulatory capital ratios, and our prospective capital distributions (including dividends and repurchases), (xxii) our expected stress capital buffer (SCB) and global systemically important bank (G-SIB) surcharge, (xxiii) legal proceedings, governmental investigations or other contingencies, (xxiv) the asset recovery guarantee and our remediation activities related to our 1Malaysia Development Berhad settlements, (xxv) the effectiveness of our management of our human capital, including our diversity goals, (xxvi) our sustainability and carbon neutrality targets and goals, (xxvii) future inflation, (xxviii) the impact of Russia's invasion of Ukraine and related sanctions and other developments on our business, results and financial position, (xxix) our ability to sell, and the terms of any proposed sales of, Asset & Wealth Management historical principal investments, and pending sale of GreenSky Holdings, LLC (GreenSky), (xxx) an agreement with General Motors (GM) regarding a process to transition their credit card program to another issuer to be selected by GM, (xxxi) the impact of the conflicts in the Middle East, (xxxii) our ability to manage our commercial real estate exposures, (xxxiii) the profitability of Platform Solutions, and (xxxiv) the effectiveness of our cybersecurity risk management process.

Executive Overview

We generated net earnings of $8.52 billion for 2023, compared with $11.26 billion for 2022. Diluted earnings per common share (EPS) was $22.87 for 2023, compared with $30.06 for 2022. ROE was 7.5% for 2023, compared with 10.2% for 2022. Book value per common share was $313.56 as of December 2023, 3.3% higher compared with December 2022.

Net revenues were $46.25 billion for 2023, 2% lower than 2022, reflecting lower net revenues in Global Banking & Markets, largely offset by higher net revenues in Platform Solutions and Asset & Wealth Management. The decrease in net revenues in Global Banking & Markets, compared with a strong prior year, reflected lower net revenues in Fixed Income, Currency and Commodities (FICC) and lower Investment banking fees. The increase in net revenues in Platform Solutions reflected significantly higher net revenues in Consumer platforms. The increase in net revenues in Asset & Wealth Management primarily reflected higher Management and other fees.

Provision for credit losses was $1.03 billion for 2023, compared with $2.72 billion for 2022. Provisions for 2023 reflected net provisions related to both the credit card portfolio (primarily driven by net charge-offs) and wholesale loans (primarily driven by impairments). These net provisions were partially offset by reserve reductions of $637 million related to the transfer of the GreenSky installment loan portfolio to held for sale and $442 million related to the sale of substantially all of the *Marcus by Goldman Sachs* (Marcus) loans portfolio. Provisions for 2022 primarily reflected growth in the credit card portfolio, the impact of macroeconomic and geopolitical concerns and net charge-offs.

Operating expenses were $34.49 billion for 2023, 11% higher than 2022, primarily due to significantly higher impairments related to commercial real estate included in consolidated investment entities (CIEs) ($1.46 billion recognized in 2023), a write-down of identifiable intangible assets of $506 million related to GreenSky and an impairment of goodwill of $504 million related to Consumer platforms, as well as the FDIC special assessment fee of $529 million. Our efficiency ratio (total operating expenses divided by total net revenues) was 74.6% for 2023, compared with 65.8% for 2022.

During 2023, we returned a total of $9.39 billion of capital to common shareholders, including $5.80 billion of common share repurchases and $3.59 billion of common stock dividends. As of December 2023, our CET1 capital ratio was 14.4% under the Standardized Capital Rules and 14.9% under the Advanced Capital Rules. See Note 20 to the consolidated financial statements for further information about our capital ratios.

Business Environment

In 2023, the global economy grew, but was impacted throughout the year by broad macroeconomic and geopolitical concerns. Concerns about persistent inflation and the economic outlook were somewhat eased by improvement in inflationary measures over the course of the year and increased expectations for a soft landing for the U.S. economy amid a slowdown in the pace of monetary policy tightening, both contributing to improved market sentiment. During the early part of the year, momentum was temporarily disrupted by stress in the banking sector, which led to the failure of certain regional banks in the U.S. and the combination of Switzerland's two largest financial institutions, resulting in a period of high interest rate volatility before concerns subsided after regional banks showed stability. Geopolitical stresses that carried over into 2023, including the conflict in Ukraine and ongoing tensions with China, remained elevated. Additionally, the renewed onset of conflict in the Middle East added to the uncertainty of global stability. The above factors contributed to higher global equity prices compared with the end of 2022 and pressure in the commercial real estate market.

There remains uncertainty and concerns about geopolitical risks, global central bank policy, inflation, the commercial real estate sector and potential increases in regulatory capital requirements. See "Results of Operations — Segment Assets and Operating Results — Segment Operating Results" for further information about the operating environment for each of our business segments.

Critical Accounting Policies

Fair Value

Fair Value Hierarchy. Trading assets and liabilities, certain investments and loans, and certain other financial assets and liabilities, are included in our consolidated balance sheets at fair value (i.e., marked-to-market), with related gains or losses generally recognized in our consolidated statements of earnings. The use of fair value to measure financial instruments is fundamental to our risk management practices and is our most critical accounting policy.

The fair value of a financial instrument is the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. We measure certain financial assets and liabilities as a portfolio (i.e., based on its net exposure to market and/or credit risks). In determining fair value, the hierarchy under U.S. generally accepted accounting principles (U.S. GAAP) gives (i) the highest priority to unadjusted quoted prices in active markets for identical, unrestricted assets or liabilities (level 1 inputs), (ii) the next priority to inputs other than level 1 inputs that are observable, either directly or indirectly (level 2 inputs), and (iii) the lowest priority to inputs that cannot be observed in market activity (level 3 inputs). In evaluating the significance of a valuation input, we consider, among other factors, a portfolio's net risk exposure to that input. Assets and liabilities are classified in their entirety based on the lowest level of input that is significant to their fair value measurement.

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

Instruments classified in level 3 of the fair value hierarchy are those which require one or more significant inputs that are not observable. Level 3 financial assets represented 1.5% as of December 2023 and 1.8% as of December 2022 of our total assets. See Notes 4 and 5 to the consolidated financial statements for further information about level 3 financial assets, including changes in level 3 financial assets and related fair value measurements. Absent evidence to the contrary, instruments classified in level 3 of the fair value hierarchy are initially valued at transaction price, which is considered to be the best initial estimate of fair value. Subsequent to the transaction date, we use other methodologies to determine fair value, which vary based on the type of instrument. Estimating the fair value of level 3 financial instruments requires judgments to be made. These judgments include:

- Determining the appropriate valuation methodology and/or model for each type of level 3 financial instrument;
- Determining model inputs based on an evaluation of all relevant empirical market data, including prices evidenced by market transactions, interest rates, credit spreads, volatilities and correlations; and
- Determining appropriate valuation adjustments, including those related to illiquidity or counterparty credit quality.

Regardless of the methodology, valuation inputs and assumptions are only changed when corroborated by substantive evidence.

Controls Over Valuation of Financial Instruments. Market makers and investment professionals in our revenue-producing units are responsible for pricing our financial instruments. Our control infrastructure is independent of the revenue-producing units and is fundamental to ensuring that all of our financial instruments are appropriately valued at market-clearing levels. In the event that there is a difference of opinion in situations where estimating the fair value of financial instruments requires judgment (e.g., calibration to market comparables or trade comparison, as described below), the final valuation decision is made by senior managers in independent risk oversight and control functions. This independent price verification is critical to ensuring that our financial instruments are properly valued.

Price Verification. All financial instruments at fair value classified in levels 1, 2 and 3 of the fair value hierarchy are subject to our independent price verification process. The objective of price verification is to have an informed and independent opinion with regard to the valuation of financial instruments under review. Instruments that have one or more significant inputs which cannot be corroborated by external market data are classified in level 3 of the fair value hierarchy. Price verification strategies utilized by our independent risk oversight and control functions include:

- **Trade Comparison.** Analysis of trade data (both internal and external, where available) is used to determine the most relevant pricing inputs and valuations.
- **External Price Comparison.** Valuations and prices are compared to pricing data obtained from third parties (e.g., brokers or dealers, S&P Global Services, Bloomberg, ICE Data Services, Pricing Direct, TRACE). Data obtained from various sources is compared to ensure consistency and validity. When broker or dealer quotations or third-party pricing vendors are used for valuation or price verification, greater priority is generally given to executable quotations.
- **Calibration to Market Comparables.** Market-based transactions are used to corroborate the valuation of positions with similar characteristics, risks and components.
- **Relative Value Analyses.** Market-based transactions are analyzed to determine the similarity, measured in terms of risk, liquidity and return, of one instrument relative to another or, for a given instrument, of one maturity relative to another.
- **Collateral Analyses.** Margin calls on derivatives are analyzed to determine implied values, which are used to corroborate our valuations.
- **Execution of Trades.** Where appropriate, market-making desks are instructed to execute trades in order to provide evidence of market-clearing levels.
- **Backtesting.** Valuations are corroborated by comparison to values realized upon sales.

See Note 4 to the consolidated financial statements for further information about fair value measurements.

Review of Net Revenues. Independent risk oversight and control functions ensure adherence to our pricing policy through a combination of daily procedures, including the explanation and attribution of net revenues based on the underlying factors. Through this process, we independently validate net revenues, identify and resolve potential fair value or trade booking issues on a timely basis and seek to ensure that risks are being properly categorized and quantified.

Review of Valuation Models. Our independent model risk management group (Model Risk), consisting of quantitative professionals who are separate from model developers, performs an independent model review and validation process of our valuation models. New or changed models are reviewed and approved prior to implementation. Models are reviewed annually to assess the impact of any changes in the product or market and any market developments in pricing theories. See "Risk Management — Model Risk Management" for further information about the review and validation of our valuation models.

Allowance for Credit Losses

We estimate and record an allowance for credit losses related to our loans held for investment that are accounted for at amortized cost. To determine the allowance for credit losses, we classify our loans accounted for at amortized cost into wholesale and consumer portfolios. These portfolios represent the level at which we have developed and documented our methodology to determine the allowance for credit losses. The allowance for credit losses is measured on a collective basis for loans that exhibit similar risk characteristics using a modeled approach and on an asset-specific basis for loans that do not share similar risk characteristics.

The allowance for credit losses takes into account the weighted average of a range of forecasts of future economic conditions over the expected life of the loans and lending commitments. The expected life of each loan or lending commitment is determined based on the contractual term adjusted for extension options or demand features, or is modeled in the case of revolving credit card loans. The forecasts include baseline, favorable and adverse economic scenarios over a three-year period. For loans with expected lives beyond three years, the model reverts to historical loss information based on a non-linear modeled approach. We apply judgment in weighting individual scenarios each quarter based on a variety of factors, including our internally derived economic outlook, market consensus, recent macroeconomic conditions and industry trends. The forecasted economic scenarios consider a number of risk factors relevant to the wholesale and consumer portfolios. Risk factors for wholesale loans include internal credit ratings, industry default and loss data, expected life, macroeconomic indicators (e.g., unemployment rates and GDP), the borrower's capacity to meet its financial obligations, the borrower's country of risk and industry, loan seniority and collateral type. In addition, for loans backed by real estate, risk factors include the loan-to-value ratio, debt service ratio and home price index. The allowance for loan losses for wholesale loans that do not share similar risk characteristics, such as nonaccrual loans, is calculated using the present value of expected future cash flows discounted at the loan's effective rate, the observable market price of the loan, or, in the case of collateral dependent loans, the fair value of the collateral less estimated costs to sell, if applicable. Risk factors for installment and credit card loans include Fair Isaac Corporation (FICO) credit scores, delinquency status, loan vintage and macroeconomic indicators.

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

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

We also record an allowance for credit losses on lending commitments which are held for investment that are accounted for at amortized cost. Such allowance is determined using the same methodology as the allowance for loan losses, while also taking into consideration the probability of drawdowns or funding, and whether such commitments are cancellable by us.

To estimate the potential impact of an adverse macroeconomic environment on our allowance for credit losses, we, among other things, compared the expected credit losses under the weighted average forecast used in the calculation of allowance for credit losses as of December 2023 (which was weighted towards the baseline and adverse economic scenarios) to the expected credit losses under a 100% weighted adverse economic scenario. The adverse economic scenario of the forecast model reflects a global recession in the first quarter of 2024 through the first quarter of 2025, resulting in an economic contraction and rising unemployment rates. A 100% weighting to the adverse economic scenario would have resulted in an approximate $0.7 billion increase in our allowance for credit losses as of December 2023. This hypothetical increase does not take into consideration any potential adjustments to qualitative reserves. The forecasts of macroeconomic conditions are inherently uncertain and do not take into account any other offsetting or correlated effects. The actual credit loss in an adverse macroeconomic environment may differ significantly from this estimate. See Note 9 to the consolidated financial statements for further information about the allowance for credit losses.

Use of Estimates

U.S. GAAP requires us to make certain estimates and assumptions. In addition to the estimates we make in connection with fair value measurements and the allowance for credit losses on loans and lending commitments held for investment and accounted for at amortized cost, the use of estimates and assumptions is also important in determining the accounting for goodwill and identifiable intangible assets, provisions for losses that may arise from litigation and regulatory proceedings (including governmental investigations), and accounting for income taxes.

Goodwill is assessed for impairment annually in the fourth quarter or more frequently if events occur or circumstances change that indicate an impairment may exist. When assessing goodwill for impairment, first, a qualitative assessment can be made to determine whether it is more likely than not that the estimated fair value of a reporting unit is less than its carrying value. If the results of the qualitative assessment are not conclusive, a quantitative goodwill test is performed. Alternatively, a quantitative goodwill test can be performed without performing a qualitative assessment. Estimating the fair value of our reporting units requires judgment. Critical inputs to the fair value estimates include projected earnings, allocated equity, price-to-earnings multiples and price-to-book multiples. There is inherent uncertainty in the projected earnings. The carrying value of each reporting unit reflects an allocation of total shareholders' equity and represents the estimated amount of total shareholders' equity required to support the activities of the reporting unit under currently applicable regulatory capital requirements. During the second quarter of 2023, in connection with the exploration of a potential sale of GreenSky, we performed a quantitative goodwill test and determined that the goodwill associated with Consumer platforms was impaired, and accordingly, recorded a $504 million impairment. In the fourth quarter of 2023, we performed our annual assessment of goodwill for impairment, for each of our reporting units with goodwill, by performing a qualitative assessment. Multiple factors were assessed with respect to each of these reporting units to determine whether it was more likely than not that the estimated fair value of any of these reporting units was less than its carrying value. The qualitative assessment also considered changes since a quantitative test across all of our reporting units was last performed in 2022. As a result of the qualitative assessment, we determined that it was more likely than not that the estimated fair value of each reporting unit with goodwill exceeded its respective carrying value. Therefore, we determined that goodwill for each reporting unit was not impaired and that a quantitative goodwill test was not required. See Note 12 to the consolidated financial statements for further information about our annual assessment of goodwill for impairment. If we experience a prolonged or severe period of weakness in the business environment, financial markets, the performance of one or more of our reporting units or our common stock price, or additional increases in capital requirements, our goodwill could be impaired in the future.

Identifiable intangible assets are tested for impairment when events or changes in circumstances suggest that an asset's or asset group's carrying value may not be fully recoverable. Judgment is required to evaluate whether indications of potential impairment have occurred, and to test identifiable intangible assets for impairment, if required. An impairment is recognized if the estimated undiscounted cash flows relating to the asset or asset group is less than the corresponding carrying value.

In the third quarter of 2023, in connection with the planned sale of GreenSky, we classified the related identifiable intangible assets, loans and other assets and associated liabilities as held for sale and recognized a $506 million write-down. See Note 12 to the consolidated financial statements for further information about identifiable intangible assets.

We also estimate and provide for potential losses that may arise out of litigation and regulatory proceedings to the extent that such losses are probable and can be reasonably estimated. In addition, we estimate the upper end of the range of reasonably possible aggregate loss in excess of the related reserves for litigation and regulatory proceedings where we believe the risk of loss is more than slight. See Notes 18 and 27 to the consolidated financial statements for information about certain judicial, litigation and regulatory proceedings. Significant judgment is required in making these estimates and our final liabilities may ultimately be materially different. Our total estimated liability in respect of litigation and regulatory proceedings is determined on a case-by-case basis and represents an estimate of probable losses after considering, among other factors, the progress of each case, proceeding or investigation, our experience and the experience of others in similar cases, proceedings or investigations, and the opinions and views of legal counsel.

In accounting for income taxes, we recognize tax positions in the financial statements only when it is more likely than not that the position will be sustained on examination by the relevant taxing authority based on the technical merits of the position. As of December 2023, our liability for unrecognized tax benefits was $1.73 billion. We use estimates to recognize current and deferred income taxes in the U.S. federal, state and local and non-U.S. jurisdictions in which we operate. The income tax laws in these jurisdictions are complex and can be subject to different interpretations between taxpayers and taxing authorities. Disputes may arise over these interpretations and can be settled by audit, administrative appeals or judicial proceedings. Our interpretations are reevaluated quarterly based on guidance currently available, tax examination experience and the opinions of legal counsel, among other factors. We recognize deferred taxes based on the amount that will more likely than not be realized in the future based on enacted income tax laws. As of December 2023, we had $10.19 billion of deferred tax assets with a related valuation allowance of $1.98 billion. Our estimate for deferred taxes includes estimates for future taxable earnings, including the level and character of those earnings, and various tax planning strategies. See Note 24 to the consolidated financial statements for further information about income taxes.

Recent Accounting Developments

See Note 3 to the consolidated financial statements for information about Recent Accounting Developments.

Results of Operations

The composition of our net revenues has varied over time as financial markets and the scope of our operations have changed. The composition of net revenues can also vary over the shorter term due to fluctuations in U.S. and global economic and market conditions. See "Risk Factors" in Part I, Item 1A of this Form 10-K for further information about the impact of economic and market conditions on our results of operations. For a discussion of our 2022 financial results compared with 2021, see Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the year ended December 31, 2022.

Financial Overview

The table below presents an overview of our financial results and selected financial ratios.

	Year Ended December		
$ in millions, except per share amounts	**2023**	2022	2021
Net revenues	**$ 46,254**	$ 47,365	$ 59,339
Pre-tax earnings	**$ 10,739**	$ 13,486	$ 27,044
Net earnings	**$ 8,516**	$ 11,261	$ 21,635
Net earnings to common	**$ 7,907**	$ 10,764	$ 21,151
Diluted EPS	**$ 22.87**	$ 30.06	$ 59.45
ROE	**7.5 %**	10.2 %	23.0 %
ROTE	**8.1 %**	11.0 %	24.3 %
Net earnings to average assets	**0.5 %**	0.7 %	1.6 %
Return on shareholders' equity	**7.3 %**	9.7 %	21.3 %
Average equity to average assets	**7.5 %**	7.5 %	7.4 %
Dividend payout ratio	**45.9 %**	29.9 %	10.9 %

Our target (through-the-cycle) is to achieve ROE within a range of 14% to 16% and ROTE within a range of 15% to 17%.

In the table above:

- Net earnings to common represents net earnings applicable to common shareholders, which is calculated as net earnings less preferred stock dividends.
- ROE is calculated by dividing net earnings to common by average monthly common shareholders' equity.
- ROTE is calculated by dividing net earnings to common by average monthly tangible common shareholders' equity.

The table below presents our average equity and the reconciliation of average common shareholders' equity to average tangible common shareholders' equity.

	Average for the Year Ended December		
$ in millions	**2023**	2022	2021
Total shareholders' equity	**$ 116,699**	$ 115,990	$ 101,705
Preferred stock	**(10,895)**	(10,703)	(9,876)
Common shareholders' equity	**105,804**	105,287	91,829
Goodwill	**(6,147)**	(5,726)	(4,327)
Identifiable intangible assets	**(1,736)**	(1,583)	(536)
Tangible common shareholders' equity	**$ 97,921**	$ 97,978	$ 86,966

- Net earnings to average assets is calculated by dividing net earnings by average total assets.
- Return on shareholders' equity is calculated by dividing net earnings by average monthly shareholders' equity.
- Average equity to average assets is calculated by dividing average total shareholders' equity by average total assets.
- Dividend payout ratio is calculated by dividing dividends declared per common share by diluted EPS.

Net Revenues

The table below presents our net revenues by line item.

	Year Ended December		
$ in millions	**2023**	2022	2021
Investment banking	**$ 6,218**	$ 7,360	$ 14,136
Investment management	**9,532**	9,005	8,171
Commissions and fees	**3,789**	4,034	3,590
Market making	**18,238**	18,634	15,357
Other principal transactions	**2,126**	654	11,615
Total non-interest revenues	**39,903**	39,687	52,869
Interest income	**68,515**	29,024	12,120
Interest	**62,164**	21,346	5,650

- Market making consists of revenues (excluding net interest) from client execution activities related to making markets in interest rate products, credit products, mortgages, currencies, commodities and equity products. These activities are included in Global Banking & Markets.
- Other principal transactions consists of revenues (excluding net interest) from our equity investing activities, including revenues related to our consolidated investments (included in Asset & Wealth Management), and debt investing and lending activities (included across our three segments).

Operating Environment. During 2023, the operating environment continued to be generally characterized by continued broad macroeconomic concerns, including the outlook for economic growth and inflation, and elevated geopolitical tensions. These factors weighed on industry-wide investment banking activity levels and market-making activity levels, and contributed to pressure in the commercial real estate market. However, improvements in the outlook for economic conditions contributed to generally higher global equity and bond prices compared with the end of 2022. In the U.S., inflationary measures improved, the rate of unemployment remained low and the pace of growth in consumer spending declined slightly compared with 2022.

If uncertainty and concerns about geopolitical tensions and the economic outlook remain elevated or grow, including those about global central bank policy, inflation, the commercial real estate sector, and potential increases in regulatory capital requirements, it may lead to a decline in asset prices, a further decline in market-making activity levels, or a further decline in investment banking activity levels, and net revenues and provision for credit losses would likely be negatively impacted. See "Segment Assets and Operating Results — Segment Operating Results" for information about the operating environment and material trends and uncertainties that may impact our results of operations.

2023 versus 2022

Net revenues in the consolidated statements of earnings were $46.25 billion for 2023, 2% lower than 2022, primarily reflecting lower net interest income and lower investment banking revenues, partially offset by significantly higher net revenues in other principal transactions.

Non-Interest Revenues. Investment banking revenues in the consolidated statements of earnings were $6.22 billion for 2023, 16% lower than 2022, primarily due to significantly lower revenues in advisory, reflecting a significant decline in industry-wide completed mergers and acquisitions transactions, partially offset by significantly higher revenues in equity underwriting, primarily reflecting increased activity from secondary offerings.

Investment management revenues in the consolidated statements of earnings were $9.53 billion for 2023, 6% higher than 2022, due to higher management and other fees, primarily reflecting the impact of higher average AUS, including the impact of acquiring NN Investment Partners (NNIP).

Commissions and fees in the consolidated statements of earnings were $3.79 billion for 2023, 6% lower than 2022, primarily reflecting the impact of GreenSky in the prior year period.

Market making revenues in the consolidated statements of earnings were $18.24 billion for 2023, 2% lower than 2022, reflecting significantly lower revenues in FICC and Equities intermediation, largely offset by significantly higher revenues in FICC and Equities financing. The decrease from intermediation activities reflected significantly lower revenues in equity derivatives, commodities and currencies, partially offset by significantly improved results in mortgages. The increase from financing activities primarily reflected significantly higher revenues from equity financing.

Other principal transactions revenues in the consolidated statements of earnings were $2.13 billion for 2023, 225% higher than 2022, primarily reflecting net gains from derivatives related to our borrowings.

Net Interest Income. Net interest income in the consolidated statements of earnings was $6.35 billion for 2023, 17% lower than 2022, reflecting a significant increase in interest expense primarily related to other interest-bearing liabilities, deposits, collateralized financings, and borrowings, each reflecting the impact of higher average interest rates. The increase in interest expense was partially offset by a significant increase in interest income primarily related to collateralized agreements, other interest-earning assets, deposits with banks, and loans, each reflecting the impact of higher average interest rates. See "Supplemental Financial Information — Statistical Disclosures — Distribution of Assets, Liabilities and Shareholders' Equity" for further information about our sources of net interest income.

Provision for Credit Losses

Provision for credit losses consists of provision for credit losses on financial assets and commitments accounted for at amortized cost, including loans and lending commitments held for investment. See Note 9 to the consolidated financial statements for further information about the provision for credit losses on loans and lending commitments.

The table below presents our provision for credit losses.

	Year Ended December		
$ in millions	**2023**	2022	2021
Provision for credit losses	**$ 1,028**	$ 2,715	$ 357

2023 versus 2022. Provision for credit losses in the consolidated statements of earnings was $1.03 billion for 2023, compared with $2.72 billion for 2022. Provisions for 2023 reflected net provisions related to both the credit card portfolio (primarily driven by net charge-offs) and wholesale loans (primarily driven by impairments). These net provisions were partially offset by reserve reductions of $637 million related to the transfer of the GreenSky installment loan portfolio to held for sale and $442 million related to the sale of substantially all of the Marcus loans portfolio. Provisions for 2022 primarily reflected growth in the credit card portfolio, the impact of macroeconomic and geopolitical concerns and net charge-offs.

Operating Expenses

Our operating expenses are primarily influenced by compensation, headcount and levels of business activity. Compensation and benefits includes salaries, year-end discretionary compensation, amortization of equity awards and other items such as benefits. Discretionary compensation is significantly impacted by, among other factors, the level of net revenues, net of provision for credit losses, overall financial performance, prevailing labor markets, business mix, the structure of our share-based compensation programs and the external environment.

The table below presents our operating expenses by line item and headcount.

	Year Ended December		
$ in millions	**2023**	2022	2021
Compensation and benefits	**$ 15,499**	$ 15,148	$ 17,719
Transaction based	**5,698**	5,312	4,710
Market development	**629**	812	553
Communications and technology	**1,919**	1,808	1,573
Depreciation and amortization	**4,856**	2,455	2,015
Occupancy	**1,053**	1,026	981
Professional f	**1,623**	1,887	1,648

2023 versus 2022. Operating expenses in the consolidated statements of earnings were $34.49 billion for 2023, 11% higher than 2022. Our efficiency ratio was 74.6% for 2023, compared with 65.8% for 2022.

The increase in operating expenses compared with 2022 primarily reflected significantly higher impairments related to commercial real estate within CIEs ($1.46 billion recognized in 2023), a write-down of identifiable intangible assets of $506 million related to GreenSky and an impairment of goodwill of $504 million related to Consumer platforms (all in depreciation and amortization), as well as the FDIC special assessment fee of $529 million (in other expenses). Net provisions for litigation and regulatory proceedings were $115 million for 2023 compared with $576 million for 2022.

As of December 2023, headcount decreased 7% compared with December 2022, primarily reflecting a headcount reduction initiative during the year.

Provision for Taxes

The effective income tax rate for 2023 was 20.7%, up from the full year income tax rate of 16.5% for 2022, primarily resulting from an increase in taxes on non-U.S. earnings in 2023, partially offset by an increase in the impact of permanent tax benefits for 2023 compared with 2022.

In May 2023, the New York State fiscal year 2024 budget was enacted. The legislation extends the temporary increase in the New York State corporate income tax rate from 6.5% to 7.25% through calendar year 2026. In December 2023, the New York State Department of Taxation and Finance published final regulations that implemented comprehensive franchise tax reform for corporations, banks and insurance companies, which was enacted in 2014. The legislation and final regulations did not have a material impact on our 2023 annual effective tax rate and are not expected to have a material impact on our 2024 annual effective tax rate.

The Organisation for Economic Co-operation and Development (OECD) Global Anti-Base Erosion Model Rules (Pillar II) aim to ensure that multinationals with revenues in excess of EUR 750 million pay a minimum effective corporate tax rate of 15% in each jurisdiction in which they operate. The U.K. and other jurisdictions in which we operate have adopted certain portions of the OECD directive (Pillar II legislation) effective beginning in calendar year 2024. In February 2023, the U.S. Financial Accounting Standards Board released guidance that it believes Pillar II is an alternative minimum tax, and therefore deferred tax assets and liabilities should not be remeasured for its estimated future effects and any additional tax should be recognized in the period incurred. We do not expect the impact on our 2024 annual effective tax rate to be material.

We expect our 2024 tax rate to be approximately 22%, including the impact of any Pillar II taxes, based on our current interpretation of the guidance published by the OECD and enacted legislation.

Segment Assets and Operating Results

Segment Assets. The table below presents assets by segment.

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

The allocation process for segment assets is based on the activities of these segments. The allocation of assets includes allocation of GCLA (which consists of unencumbered, highly liquid securities and cash), which is generally included within cash and cash equivalents, collateralized agreements and trading assets on our balance sheet. Due to the integrated nature of these segments, estimates and judgments are made in allocating these assets. See "Risk Management — Liquidity Risk Management" for further information about our GCLA.

Segment Operating Results. The table below presents our segment operating results.

	Year Ended December		
$ in millions	**2023**	2022	2021
Global Banking & Markets			
Net revenues	**$ 29,996**	$ 32,487	$ 36,734
Provision for credit losses	**401**	468	(171)
Operating expenses	**18,040**	17,851	19,542
Pre-tax earnings	**$ 11,555**	$ 14,168	$ 17,363
Net earnings to common	**$ 8,703**	$ 11,458	$ 13,535
Average common equity	**$ 71,863**	$ 69,951	$ 60,064
Return on average common equity	**12.1 %**	16.4 %	22.5 %
Asset & Wealth Management			
Net revenues	**$ 13,880**	$ 13,376	$ 21,965
Provision for credit losses	**(508)**	519	(169)
Operating expenses	**13,029**	11,550	11,406
Pre-tax earnings	**$ 1,359**	$ 1,307	$ 10,728
Net earnings to common	**$ 952**	$ 979	$ 8,459
Average common equity	**$ 30,078**	$ 31,762	$ 29,988
Return on average common equity	**3.2 %**	3.1 %	28.2 %
Platform Solutions			
Net revenues	**$ 2,378**	$ 1,502	$ 640

Global Banking & Markets

Global Banking & Markets generates revenues from the following:

Investment banking fees. We provide advisory and underwriting services and help companies raise capital to strengthen and grow their businesses. Investment banking fees includes the following:

- **Advisory.** Includes strategic advisory assignments with respect to mergers and acquisitions, divestitures, corporate defense activities, restructurings and spin-offs.
- **Underwriting.** Includes public offerings and private placements in both local and cross-border transactions of a wide range of securities and other financial instruments, including acquisition financing.

FICC. FICC generates revenues from intermediation and financing activities.

- **FICC intermediation.** Includes client execution activities related to making markets in both cash and derivative instruments, as detailed below.

  Interest Rate Products. Government bonds (including inflation-linked securities) across maturities, other government-backed securities, and interest rate swaps, options and other derivatives.

  Credit Products. Investment-grade and high-yield corporate securities, credit derivatives, exchange-traded funds (ETFs), bank and bridge loans, municipal securities, distressed debt and trade claims.

  Mortgages. Commercial mortgage-related securities, loans and derivatives, residential mortgage-related securities, loans and derivatives (including U.S. government agency-issued collateralized mortgage obligations and other securities and loans), and other asset-backed securities, loans and derivatives.

  Currencies. Currency options, spot/forwards and other derivatives on G-10 currencies and emerging-market products.

  Commodities. Commodity derivatives and, to a lesser extent, physical commodities, involving crude oil and petroleum products, natural gas, agricultural, base, precious and other metals, electricity, including renewable power, environmental products and other commodity products.

- **FICC financing.** Includes (i) secured lending to our clients through structured credit and asset-backed lending, including warehouse loans backed by mortgages (including residential and commercial mortgage loans), corporate loans and consumer loans (including auto loans and private student loans), (ii) financing through securities purchased under agreements to resell (resale agreements) and (iii) commodity financing to clients through structured transactions.

Equities. Equities generates revenues from intermediation and financing activities.

- **Equities intermediation.** We make markets in equity securities and equity-related products, including ETFs, convertible securities, options, futures and OTC derivative instruments. We also structure and make markets in derivatives on indices, industry sectors, financial measures and individual company stocks. Our exchange-based market-making activities include making markets in stocks and ETFs, futures and options on major exchanges worldwide. In addition, we generate commissions and fees from executing and clearing institutional client transactions on major stock, options and futures exchanges worldwide, as well as OTC transactions.
- **Equities financing.** Includes prime financing, which provides financing to our clients for their securities trading activities through margin loans that are collateralized by securities, cash or other collateral. Prime financing also includes services which involve lending securities to cover institutional clients' short sales and borrowing securities to cover our short sales and to make deliveries into the market. We are also an active participant in broker-to-broker securities lending and third-party agency lending activities. In addition, we execute swap transactions to provide our clients with exposure to securities and indices. Financing activities also include portfolio financing, which clients can utilize to manage their investment portfolios, and other equity financing activities, including securities-based loans to individuals.

Market-Making Activities

As a market maker, we facilitate transactions in both liquid and less liquid markets, primarily for institutional clients, such as corporations, financial institutions, investment funds and governments, to assist clients in meeting their investment objectives and in managing their risks. In this role, we seek to earn the difference between the price at which a market participant is willing to sell an instrument to us and the price at which another market participant is willing to buy it from us, and vice versa (i.e., bid/offer spread). In addition, we maintain (i) market-making positions, typically for a short period of time, in response to, or in anticipation of, client demand, and (ii) positions to actively manage our risk exposures that arise from these market-making activities (collectively, inventory). Our inventory is recorded in trading assets (long positions) or trading liabilities (short positions) in our consolidated balance sheets.

Our results are influenced by a combination of interconnected drivers, including (i) client activity levels and transactional bid/offer spreads (collectively, client activity), and (ii) changes in the fair value of our inventory and interest income and interest expense related to the holding, hedging and funding of our inventory (collectively, market-making inventory changes). Due to the integrated nature of our market-making activities, disaggregation of net revenues into client activity and market-making inventory changes is judgmental and has inherent complexities and limitations.

The amount and composition of our net revenues vary over time as these drivers are impacted by multiple interrelated factors affecting economic and market conditions, including volatility and liquidity in the market, changes in interest rates, currency exchange rates, credit spreads, equity prices and commodity prices, investor confidence, and other macroeconomic concerns and uncertainties.

In general, assuming all other market-making conditions remain constant, increases in client activity levels or bid/offer spreads tend to result in increases in net revenues, and decreases tend to have the opposite effect. However, changes in market-making conditions can materially impact client activity levels and bid/offer spreads, as well as the fair value of our inventory. For example, a decrease in liquidity in the market could have the impact of (i) increasing our bid/offer spread, (ii) decreasing investor confidence and thereby decreasing client activity levels, and (iii) widening of credit spreads on our inventory positions.

Other. We lend to corporate clients, including through relationship lending and acquisition financing. The hedges related to this lending and financing activity are also reported as part of Other. Other also includes equity and debt investing activities related to our Global Banking & Markets activities.

The table below presents our Global Banking & Markets assets.

	As of December	
$ in millions	**2023**	2022
Cash and cash equivalents	**$ 168,857**	$ 167,203
Collateralized agreements	**401,554**	380,157
Customer and other receivables	**117,633**	122,037
Trading assets	**435,275**	272,788
Investments	**122,350**	103,229
Loans	**117,464**	107,648
Other assets	**18,114**	16,477
Total	**$ 1,381,247**	$ 1,169,539

The table below presents details about our Global Banking & Markets loans.

	As of December	
$ in millions	**2023**	2022
Corporate	**$ 24,159**	$ 25,776
Real estate	**34,813**	33,215
Securities-based	**3,758**	3,857
Other collateralized	**55,527**	45,407
Installment	**173**	–
Other	**475**	561
Loans, gross	**118,905**	108,816
Allowance for loan losses	**(1,441)**	(1,168)
Total loans	**$ 117,464**	$ 107,648

Our average Global Banking & Markets gross loans were $112.07 billion for 2023 and $105.11 billion for 2022.

The table below presents our Global Banking & Markets operating results.

	Year Ended December		
$ in millions	**2023**	2022	2021
Advisory	**$ 3,299**	$ 4,704	$ 5,654
Equity underwriting	**1,153**	848	4,985
Debt underwriting	**1,764**	1,808	3,497
Investment banking fees	**6,216**	7,360	14,136
FICC intermediation	**9,318**	11,890	8,714
FICC financing	**2,742**	2,786	1,897
FICC	**12,060**	14,676	10,611
Equities intermediation	**6,489**	6,662	7,707
Equities financing	**5,060**	4,326	4,015
Equities	**11,549**	10,988	11,722
Other	**171**	(537)	265
Net revenues	**29,996**	32,487	36,734
Provision for credit losses	**401**	468	(171)
Operating expenses	**18,040**	17,851	19,542
Pre-tax earnings	**11,555**	14,168	17,363
Provision for taxes	**2,392**	2,338	3,473
Net earnings	**9,163**	11,830	13,890
Preferred stock	**460**	372	355

The table below presents our FICC and Equities net revenues by line item in the consolidated statements of earnings.

$ in millions	FICC	Equities
Year Ended December 2023		
Market making	**$ 10,632**	**$ 7,606**
Commissions and fees	**–**	**3,736**
Other principal transactions	**656**	**81**
Net interest income	**772**	**126**
Total	**$ 12,060**	**$ 11,549**
Year Ended December 2022		
Market making	$ 12,422	$ 6,212
Commissions and fees	–	3,791
Other principal transactions	377	41
Net interest income	1,877	944
Total	$ 14,676	$ 10,988
Year Ended December 2021		
Market making	$ 7,690	$ 7,667
Commissions and fees	–	3,514
Other principal transactions	362	72
Net interest income	2,559	469
Total	$ 10,611	$ 11,722

In the table above:

- See "Net Revenues" for information about market making revenues, commissions and fees, other principal transactions revenues and net interest income. See Note 25 to the consolidated financial statements for net interest income by segment.
- The primary driver of net revenues for FICC intermediation for all periods was client activity.

The table below presents our financial advisory and underwriting transaction volumes.

	Year Ended December		
$ in billions	**2023**	2022	2021
Announced mergers and acquisitions	**$ 923**	$ 1,209	$ 1,770
Completed mergers and acquisitions	**$ 1,008**	$ 1,357	$ 1,588
Equity and equity-related offerings	**$ 43**	$ 33	$ 140
Debt offerings	**$ 209**	$ 222	$ 341

In the table above:

- Volumes are per Dealogic.
- Announced and completed mergers and acquisitions

- Debt offerings includes non-convertible preferred stock, mortgage-backed securities, asset-backed securities and taxable municipal debt. It also includes publicly registered and Rule 144A issues and excludes leveraged loans.

Operating Environment. During 2023, Global Banking & Markets operated in an environment generally characterized by continued broad macroeconomic concerns, including the outlook for economic growth and inflation, and elevated geopolitical stresses. These factors weighed on industry-wide investment banking activity levels and market-making activity levels.

In investment banking, industry-wide completed mergers and acquisitions transactions declined compared with elevated levels in the prior year, while industry-wide equity and debt underwriting volumes remained below historical averages.

In interest rates, the yields on 10-year U.S. and U.K government bonds increased during the middle of the year before declining to yields near where they ended in 2022. In equities, the S&P 500 Index increased by 24% and the MSCI World Index increased by 20% compared with the end of 2022.

In the future, if market and economic conditions deteriorate, and market-making activity levels decline further or investment banking activity levels decline further, or credit spreads related to hedges on our relationship lending portfolio tighten, net revenues in Global Banking & Markets would likely be negatively impacted. In addition, if economic conditions deteriorate further or if the creditworthiness of borrowers deteriorates, provision for credit losses would likely be negatively impacted.

2023 versus 2022. Net revenues in Global Banking & Markets were $30.00 billion for 2023, 8% lower than a strong 2022.

Investment banking fees were $6.22 billion, 16% lower than 2022, due to significantly lower net revenues in Advisory, reflecting a significant decline in industry-wide completed mergers and acquisitions transactions, and slightly lower net revenues in Debt underwriting, partially offset by significantly higher net revenues in Equity underwriting, primarily reflecting increased activity from secondary offerings.

As of December 2023, our Investment banking fees backlog decreased compared with the end of 2022, due to significantly lower estimated net revenues from both potential equity underwriting transactions (primarily from initial public offerings) and potential debt underwriting transactions (primarily from structured finance offerings).

Our backlog represents an estimate of our net revenues from future transactions where we believe that future revenue realization is more likely than not. We believe changes in our backlog may be a useful indicator of client activity levels which, over the long term, impact our net revenues. However, the time frame for completion and corresponding revenue recognition of transactions in our backlog varies based on the nature of the assignment, as certain transactions may remain in our backlog for longer periods of time. In addition, our backlog is subject to certain limitations, such as assumptions about the likelihood that individual client transactions will occur in the future. Transactions may be cancelled or modified, and transactions not included in the estimate may also occur.

Net revenues in FICC were $12.06 billion, 18% lower than a strong 2022, reflecting significantly lower net revenues in FICC intermediation, driven by significantly lower net revenues in currencies and commodities and slightly lower net revenues in interest rate products, partially offset by significantly higher net revenues in mortgages and higher net revenues in credit products. Net revenues in FICC financing were slightly lower.

The decrease in FICC intermediation net revenues reflected significantly lower client activity (as activity in the prior year benefited from volatility in the macroeconomic environment). The following provides information about our FICC intermediation net revenues by business, compared with results for 2022:

- Net revenues in currencies, commodities and interest rate products primarily reflected lower client activity.
- Net revenues in mortgages and credit products primarily reflected the impact of improved market-making conditions on our inventory.

Net revenues in Equities were $11.55 billion, 5% higher than 2022, due to higher net revenues in Equities financing (reflecting significantly higher net revenues in prime financing), partially offset by slightly lower net revenues in Equities intermediation (reflecting lower net revenues in cash products).

Net revenues in Other were $171 million, compared with $(537) million for 2022, reflecting the absence of net mark-downs on acquisition financing activities included in the prior year and net gains from direct investments compared with net losses in the prior year. These improvements were partially offset by significantly higher net losses on hedges.

Provision for credit losses was $401 million for 2023, compared with $468 million for 2022. Provisions for 2023 primarily reflected net provisions related to the commercial real estate portfolio. Provisions for 2022 primarily reflected the impact of broad macroeconomic and geopolitical concerns.

Operating expenses were $18.04 billion for 2023, essentially unchanged compared with 2022. Pre-tax earnings were $11.56 billion for 2023, 18% lower than 2022.

Asset & Wealth Management

Asset & Wealth Management provides investment services to help clients preserve and grow their financial assets and achieve their financial goals. We provide these services to our clients, both institutional and individuals, including investors who primarily access our products through a network of third-party distributors around the world.

We manage client assets across a broad range of investment strategies and asset classes, including equity, fixed income and alternative investments. We provide investment solutions, including those managed on a fiduciary basis by our portfolio managers, as well as those managed by third-party managers. We offer our investment solutions in a variety of structures, including separately managed accounts, mutual funds, private partnerships and other commingled vehicles.

We also provide tailored wealth advisory services to clients across the wealth spectrum. We operate globally, serving individuals, families, family offices, and foundations and endowments. Our relationships are established directly or introduced through companies that sponsor financial wellness or financial planning programs for their employees, as well as through corporate referrals. During 2023, we sold our Personal Financial Management (PFM) business.

We offer personalized financial planning to individuals and also provide customized investment advisory solutions, and offer structuring and execution capabilities in securities and derivative products across all major global markets. In addition, we offer clients a full range of private banking services, including a variety of deposit alternatives and loans that our clients use to finance investments in both financial and nonfinancial assets, bridge cash flow timing gaps or provide liquidity and flexibility for other needs.

We invest alongside our clients that invest in investment funds that we raise or manage. We also have investments in alternative assets across a range of asset classes. Our investing activities, which are typically longer-term, include investments in corporate equity, credit, real estate and infrastructure assets.

We also raise deposits and have issued unsecured loans to consumers through Marcus. During 2023, we completed the sale of substantially all of the Marcus loans portfolio.

Asset & Wealth Management generates revenues from the following:

- **Management and other fees.** We receive fees related to managing assets for institutional and individual clients, providing investing and wealth advisory solutions, providing financial planning and counseling services, and executing brokerage transactions for wealth management clients. The vast majority of revenues in management and other fees consists of asset-based fees on client assets that we manage. For further information about assets under supervision, see “Assets Under Supervision” below. The fees that we charge vary by asset class, client channel and the types of services provided, and are affected by investment performance, as well as asset inflows and redemptions.
- **Incentive fees.** In certain circumstances, we also receive incentive fees based on a percentage of a fund’s or a separately managed account’s return, or when the return exceeds a specified benchmark or other performance targets. Such fees include overrides, which consist of the increased share of the income and gains derived primarily from our private equity and credit funds when the return on a fund’s investments over the life of the fund exceeds certain threshold returns.
- **Private banking and lending.** Our private banking and lending activities include issuing loans to our wealth management clients. We also accept deposits from wealth management clients, including through Marcus. We also issued unsecured loans to consumers through Marcus. During the first half of 2023, we completed the sale of substantially all of this portfolio. Additionally, we provide investing services through *Marcus Invest* to U.S. customers. Private banking and lending revenues include net interest income allocated to deposits and net interest income earned on loans to individual clients.
- **Equity investments.** Includes investing activities related to our asset management activities primarily related to public and private equity investments in corporate, real estate and infrastructure assets. We also make investments through CIEs, substantially all of which are engaged in real estate investment activities. In addition, we make investments in connection with our activities to satisfy requirements under the Community Reinvestment Act, primarily through our Urban Investment Group.
- **Debt investments.** Includes lending activities related to our asset management activities, including investing in corporate debt, lending to middle-market clients, and providing financing for real estate and other assets. These activities include investments in mezzanine debt, senior debt and distressed debt securities.

The table below presents our Asset & Wealth Management assets.

	As of December	
$ in millions	**2023**	2022
Cash and cash equivalents	**$ 48,677**	$ 54,065
Collateralized agreements	**14,020**	23,723
Customer and other receivables	**14,859**	13,409
Trading assets	**27,324**	19,860
Investments	**24,487**	27,400
Loans	**45,866**	56,338
Other assets	**16,630**	20,175
Total	**$ 191,863**	$ 214,970

The table below presents details about our Asset & Wealth Management loans.

	As of December	
$ in millions	**2023**	2022
Corporate	**$ 11,715**	$ 14,359
Real estate	**16,603**	18,699
Securities-based	**10,863**	12,814
Other collateralized	**6,698**	6,295
Installment	**–**	4,474
Other	**1,121**	1,700
Loans, gross	**47,000**	58,341
Allowance for loan losses	**(1,134)**	(2,003)
Total loans	**$ 45,866**	$ 56,338

The average Asset & Wealth Management gross loans were $51.98 billion for 2023 and $59.35 billion for 2022.

The table below presents our Asset & Wealth Management operating results.

	Year Ended December		
$ in millions	**2023**	2022	2021
Management and other fees	**$ 9,486**	$ 8,781	$ 7,750
Incentive fees	**161**	359	616
Private banking and lending	**2,576**	2,458	1,661
Equity investments	**342**	610	8,794

Our target is to achieve pre-tax margins in the mid-twenties and ROE in the mid-teens within the medium term (three to five year time horizon from year-end 2022) for Asset & Wealth Management.

The table below presents our Asset management and Wealth management net revenues by line item in Asset & Wealth Management.

$ in millions	Asset management	Wealth management	Asset & Wealth Management
Year Ended December 2023			
Management and other fees	**$ 4,207**	**$ 5,279**	**$ 9,486**
Incentive fees	**161**	**–**	**161**
Private banking and lending	**–**	**2,576**	**2,576**
Equity investments	**(7)**	**349**	**342**
Debt investments	**1,315**	**–**	**1,315**
Total	**$ 5,676**	**$ 8,204**	**$ 13,880**
Year Ended December 2022			
Management and other fees	$ 3,817	$ 4,964	$ 8,781
Incentive fees	359	–	359
Private banking and lending	–	2,458	2,458
Equity investments	610	–	610
Debt investments	1,168	–	1,168
Total	$ 5,954	$ 7,422	$ 13,376
Year Ended December 2021			
Management and other fees	$ 2,918	$ 4,832	$ 7,750
Incentive fees	616	–	616
Private banking and lending	–	1,661	1,661
Equity investments	8,794	–	8,794
Debt investments	3,144	–	3,144
Total	$ 15,472	$ 6,493	$ 21,965

The table below presents our Equity investments net revenues by equity type and asset class.

	Year Ended December		
$ in millions	**2023**	2022	2021
Equity Type			
Private equity	**$ 361**	$ 2,078	$ 8,826
Public equity	**(19)**	(1,468)	(32)
Total	**$ 342**	$ 610	$ 8,794
Asset Class			

Operating Environment. During 2023, Asset & Wealth Management operated in an environment generally characterized by continued broad macroeconomic concerns, including pressure in the commercial real estate market. However, improvements in the outlook for economic conditions contributed to generally higher global equity and bond prices compared with the end of 2022, positively affecting assets under supervision.

In the future, if market and economic conditions deteriorate, it may lead to a decline in asset prices, or investors transitioning to asset classes that typically generate lower fees or withdrawing their assets, and net revenues in Asset & Wealth Management would likely be negatively impacted.

2023 versus 2022. Net revenues in Asset & Wealth Management were $13.88 billion for 2023, 4% higher than 2022, reflecting higher Management and other fees and higher net revenues in Debt investments and Private banking and lending, partially offset by significantly lower net revenues in Equity investments and significantly lower Incentive fees.

The increase in Management and other fees primarily reflected the impact of higher average assets under supervision, including the impact of acquiring NNIP. The increase in Debt investments net revenues reflected significantly lower net mark-downs compared with the prior year (despite a challenging environment for real estate investments in the current year), partially offset by lower net interest income due to a reduction in the debt investments balance sheet. The increase in Private banking and lending net revenues primarily reflected higher deposit spreads and balances, partially offset by the impact of the sale of substantially all of the Marcus loans portfolio in the year. The decrease in Equity investments net revenues reflected significantly lower net gains from investments in private equities, primarily due to net losses from real estate investments, partially offset by significantly lower net losses from investments in public equities. The decrease in Incentive fees was driven by more significant harvesting in the prior year.

Provision for credit losses was a net benefit of $508 million for 2023, compared with a provision of $519 million for 2022. The net benefit for 2023 primarily reflected a reserve reduction of $442 million related to the sale of substantially all of the Marcus loans portfolio and lower balances in corporate loans due to sales and paydowns, partially offset by impairments. Provisions for 2022 primarily reflected the impact of macroeconomic and geopolitical concerns.

Operating expenses were $13.03 billion for 2023, 13% higher than 2022, largely due to significantly higher impairments related to commercial real estate within CIEs. Pre-tax earnings were $1.36 billion for 2023, 4% higher than 2022.

Assets Under Supervision. AUS includes our institutional clients' assets, assets sourced through third-party distributors and high-net-worth clients' assets where we earn a fee for managing assets on a discretionary basis. This includes net assets in our mutual funds, hedge funds, credit funds, private equity funds, real estate funds, and separately managed accounts for institutional and individual investors. AUS also includes client assets invested with third-party managers, private bank deposits and advisory relationships where we earn a fee for advisory and other services, but do not have investment discretion. AUS does not include the self-directed brokerage assets of our clients.

The table below presents information about our firmwide period-end AUS by asset class, client channel, region and vehicle.

	As of December		
$ in billions	**2023**	2022	2021
Asset Class			
Alternative investments	**$ 295**	$ 263	$ 236
Equity	**658**	563	613
Fixed income	**1,122**	1,010	940
Total long-term AUS	**2,075**	1,836	1,789
Liquidity products	**737**	711	681
Total AUS	**$ 2,812**	$ 2,547	$ 2,470
Client Channel			
Institutional	**$ 1,033**	$ 905	$ 824
Wealth management	**798**	712	751
Third-party distributed	**981**	930	895
Total AUS	**$ 2,812**	$ 2,547	$ 2,470
Region			
Americas	**$ 1,951**	$ 1,806	$ 1,930
EMEA	**653**	548	354
Asia	**208**	193	186
Total AUS	**$ 2,812**	$ 2,547	$ 2,470
Vehicle			
Separate accounts	**$ 1,557**	$ 1,388	$ 1,347
Public funds	**901**	862	811
Private funds and other	**354**	297	312
Total AUS	**$ 2,812**	$ 2,547	$ 2,470

In the table above:

- Liquidity products includes money market funds and private bank deposits.
- EMEA represents Europe, Middle East and Africa.

The table below presents changes in our AUS.

	Year Ended December		
$ in billions	**2023**	2022	2021

In the table above, dispositions for 2023 included outflows from the disposition of PFM, with substantially all of the outflows in equity and fixed income assets. Acquisitions for 2022 included inflows from the acquisitions of NNIP and NextCapital Group, Inc., and from the acquisition of the assets of Bombardier Global Pension Asset Management Inc. For each, substantially all of the inflows were in fixed income and equity assets.

The table below presents information about our average monthly firmwide AUS by asset class.

	Average for the Year Ended December		
$ in billions	**2023**	2022	2021
Asset Class			
Alternative investments	**$ 269**	$ 253	$ 211
Equity	**610**	581	547
Fixed income	**1,050**	992	919
Total long-term AUS	**1,929**	1,826	1,677
Liquidity products	**749**	693	625
Total AUS	**$ 2,678**	$ 2,519	$ 2,302

In addition to our AUS, we have discretion over alternative investments where we currently do not earn management fees (non-fee-earning alternative assets).

We earn management fees on client assets that we manage and also receive incentive fees based on a percentage of a fund's or a separately managed account's return, or when the return exceeds a specified benchmark or other performance targets. These incentive fees are recognized when it is probable that a significant reversal of such fees will not occur. Our estimated unrecognized incentive fees were $3.77 billion as of December 2023, $3.33 billion as of December 2022 and $3.39 billion as of December 2021. Such amounts are based on the completion of the funds' financial statements, which is generally one quarter in arrears. These fees will be recognized, assuming no decline in fair value, if and when it is probable that a significant reversal of such fees will not occur, which is generally when such fees are no longer subject to fluctuations in the market value of the assets.

The table below presents our average effective management fee (which excludes non-asset-based fees) earned on our firmwide AUS by asset class.

	Year Ended December		
Effective fees (bps)	**2023**	2022	2021
Alternative investments	**64**	64	63
Equity	**57**	57	60
Fixed income	**17**	17	17
Liquidity products	**15**	14	5

The table below presents details about our monthly average AUS for alternative investments and the average effective management fee we earned on such assets.

$ in billions	Direct strategies	Fund of funds	Total
Year Ended December 2023			
Average AUS			
Corporate equity	**$ 29**	**$ 70**	**$ 99**
Credit	**44**	**2**	**46**
Real estate	**11**	**9**	**20**
Hedge funds and other	**42**	**22**	**64**
Funds and discretionary accounts	**$ 126**	**$ 103**	**$ 229**
Advisory accounts			**40**
Total average AUS for alternative investments			**$ 269**
Effective Fees (bps)			
Corporate equity	**125**	**61**	**80**
Credit	**80**	**37**	**78**
Real estate	**82**	**42**	**64**
Hedge funds and other	**67**	**53**	**62**
Funds and discretionary accounts	**86**	**57**	**73**
Advisory accounts			**16**
Total average effective fee			**64**
Year Ended December 2022			
Average AUS			
Corporate equity	$ 27	$ 61	$ 88
Credit	36	2	38
Real estate	10	8	18
Hedge funds and other	45	22	67
Funds and discretionary accounts	$ 118	$ 93	$ 211
Advisory accounts			42
Total average AUS for alternative investments			$ 253
Effective Fees (bps)			
Corporate equity	133	61	83
Credit	81	51	80
Real estate	87	50	70
Hedge funds and other	64	49	59
Funds and discretionary accounts	87	57	74
Advisory accounts			16
Total average effective fee			64
Year Ended December 2021			

In the table above, direct strategies primarily includes our private equity, growth equity, private credit, liquid alternatives and real estate strategies. Fund of funds primarily includes our business which invests in leading private equity, hedge fund, real estate and credit third-party managers as a limited partner, secondary-market investor, co-investor or management company partner.

The table below presents information about our period-end AUS for alternative investments, non-fee-earning alternative investments and total alternative investments.

$ in billions	AUS	Non-fee-earning alternative assets	Total alternative assets
As of December 2023			
Corporate equity	**$ 109**	**$ 77**	**$ 186**
Credit	**55**	**75**	**130**
Real estate	**22**	**32**	**54**
Hedge funds and other	**66**	**3**	**69**
Funds and discretionary accounts	**252**	**187**	**439**
Advisory accounts	**43**	**3**	**46**
Total alternative investments	**$ 295**	**$ 190**	**$ 485**
As of December 2022			
Corporate equity	$ 94	$ 76	$ 170
Credit	44	73	117
Real estate	18	36	54
Hedge funds and other	65	2	67
Funds and discretionary accounts	221	187	408
Advisory accounts	42	–	42
Total alternative investments	$ 263	$ 187	$ 450
As of December 2021			
Corporate equity	$ 87	$ 78	$ 165
Credit	25	79	104
Real estate	16	39	55
Hedge funds and other	70	2	72
Funds and discretionary accounts	198	198	396
Advisory accounts	38	2	40
Total alternative investments	$ 236	$ 200	$ 436

In the table above:

- Corporate equity primarily includes private equity.
- Total alternative assets included uncalled capital that is available for future investing of $58 billion as of December 2023, $54 billion as of December 2022 and $42 billion as of December 2021.

We announced a strategic objective of growing our third-party alternatives business and established a target of achieving gross inflows of $225 billion for alternative investments from 2020 through the end of 2024. We surpassed this target in 2023.

The table below presents information about third-party commitments raised in our alternatives business from 2020 through 2023.

		As of
$ in billions		**December 2023**
Included in AUS	**$**	**176**
Included in non-fee-earning alternative assets		**75**
Third-party commitments raised	**$**	**251**

In the table above, commitments included in non-fee-earning alternative assets included approximately $56 billion, which will begin to earn fees (and become AUS) if and when the commitments are drawn and assets are invested.

The table below presents information about alternative investments in Asset & Wealth Management that we hold on our balance sheet by asset type.

	As of December			
$ in billions		**2023**		2022
Loans	**$**	**12.9**	$	19.0
Debt securities		**10.8**		12.3
Equity securities		**13.2**		14.7
CIE investments and other		**9.3**		12.6
Total	**$**	**46.2**	$	58.6

The table below presents further information about our alternative investments in Asset & Wealth Management that we hold on our balance sheet.

	As of December			
$ in billions		**2023**		2022
Client co-invest	**$**	**21.3**	$	23.0
Firmwide initiatives		**8.6**		5.9
Historical principal investments:				
Loans		**3.5**		8.4
Debt securities		**3.6**		5.0
Equity securities		**4.0**		5.6
CIE investments and other		**5.2**		10.7
Total historical principal investments		**16.3**		29.7
Total	**$**	**46.2**	$	58.6

In the table above:

The table below presents the rollforward of our alternative investments categorized as historical principal investments for 2023.

		Historical principal investments
$ in billions		
Beginning balance	**$**	**29.7**
Additions		**1.9**
Dispositions		**(12.9)**
Net markdowns		**(2.4)**
Ending balance	**$**	**16.3**

In the table above, dispositions included approximately $1.2 billion of investments that were transferred out of historical principal investments, primarily to Global Banking & Markets.

The table below presents the commercial real estate investments in Asset & Wealth Management that we hold on our balance sheet.

		As of
$ in billions		**December 2023**
Loans	**$**	**1.8**
Debt securities		**0.5**
Equity securities		**3.8**
CIE investments, net of financings		**2.3**
Total	**$**	**8.4**

In the table above:

- Office-related investments included in loans were $0.2 billion, in debt securities were $0.1 billion, in equity securities were $0.3 billion, and in CIE investments, net of financings, were $0.6 billion.
- Office-related equity securities and CIE investments, net of financings, were marked down or impaired by approximately 50% during 2023 and non-office-related equity securities and CIE investments, net of financings, were marked down or impaired by approximately 15% during 2023.
- Commercial real estate investments consisted of approximately 38% of historical principal investments, which we intend to exit over the medium term (three to five year time horizon from year-end 2022).

Loans and Debt Securities. The table below presents the concentration of loans and debt securities within our alternative investments by accounting classification, region and industry.

	As of December			
$ in billions	**2023**		2022	
Loans	**$12.9**		$19.0	
Debt securities	**10.8**		12.3	
Total	**$23.7**		$31.3	
Accounting Classification				
Debt securities at fair value	**45**	**%**	39	%
Loans at amortized cost	**49**	**%**	49	%
Loans at fair value	**3**	**%**	6	%
Loans held for sale	**3**	**%**	6	%
Total	**100**	**%**	100	%
Region				
Americas	**52**	**%**	51	%
EMEA	**37**	**%**	35	%
Asia	**11**	**%**	14	%
Total	**100**	**%**	100	%
Industry				
Consumer & Retail	**11**	**%**	10	%
Financial Institutions	**6**	**%**	7	%
Healthcare	**15**	**%**	13	%
Industrials	**18**	**%**	16	%
Natural Resources & Utilities	**2**	**%**	2	%
Real Estate	**11**	**%**	20	%
Technology, Media & Telecommunications	**28**	**%**	25	%
Other	**9**	**%**	7	%
Total	**100**	**%**	100	%

Equity Securities. The table below presents the concentration of equity securities within our alternative investments by region and industry.

	As of December			
$ in billions	**2023**		2022	
Equity securities	**$13.2**		$14.7	
Region				
Americas	**70**	**%**	67	%
EMEA	**15**	**%**	15	%
Asia	**15**	**%**	18	%
Total	**100**	**%**	100	%
Industry				
Consumer & Retail	**6**	**%**	6	%
Financial Institutions	**11**	**%**	10	%

- The concentrations for real estate equity securities as of December 2023 were 13% for multifamily (9% as of December 2022), 2% for office (5% as of December 2022), 8% for mixed use (8% as of December 2022) and 7% for other real estate equity securities (8% as of December 2022).

The table below presents the concentration of equity securities within our alternative investments by vintage.

	Vintage	
As of December 2023		
2016 or earlier	**25**	**%**
2017 - 2019	**26**	**%**
2020 - thereafter	**49**	**%**
Total	**100**	**%**
As of December 2022		
2015 or earlier	26	%
2016 - 2018	26	%
2019 - thereafter	48	%
Total	100	%

CIE Investments and Other. CIE investments and other included assets held by CIEs of $5.9 billion as of December 2023 and $11.8 billion as of December 2022, which were funded with liabilities of approximately $3.5 billion as of December 2023 and $6.3 billion as of December 2022. Substantially all such liabilities were nonrecourse, thereby reducing our equity at risk.

The table below presents the concentration of CIE assets, net of financings, within our alternative investments by region and asset class.

	As of December			
$ in billions	**2023**		2022	
CIE assets, net of financings	**$2.4**		$5.5	
Region				
Americas	**61**	**%**	65	%
EMEA	**25**	**%**	25	%
Asia	**14**	**%**	10	%
Total	**100**	**%**	100	%
Asset Class				
Hospitality	**6**	**%**	4	%
Industrials	**16**	**%**	15	%
Multifamily	**13**	**%**	23	%
Office	**24**	**%**	22	%
Retail	**7**	**%**	3	%
Senior Housing	**15**	**%**	14	%
Student Housing	**7**	**%**	7	%
Other	**12**	**%**	12	%
Total	**100**	**%**	100	%

The table below presents the concentration of CIE assets, net of financings, within our alternative investments by vintage.

	Vintage
As of December 2023	
2016 or earlier	**12 %**
2017 - 2019	**57 %**
2020 - thereafter	**31 %**
Total	**100 %**
As of December 2022	
2015 or earlier	5 %
2016 - 2018	45 %
2019 - thereafter	50 %
Total	100 %

Platform Solutions

Platform Solutions includes our consumer platforms, such as partnerships offering credit cards and point-of-sale financing, and transaction banking and other platform businesses.

Platform Solutions generates revenues from the following:

Consumer platforms. Our Consumer platforms business issues credit cards and provides point-of-sale financing through GreenSky to consumers to finance the purchases of goods or services. Consumer platforms revenues primarily includes net interest income earned on credit card lending and point-of-sale financing activities. We also accept deposits from Apple Card customers. In the fourth quarter of 2023, we entered into an agreement to sell GreenSky, which is expected to close in the first quarter of 2024, and also completed the sale of a majority of the GreenSky installment loan portfolio. In the fourth quarter of 2023, we also entered into an agreement with GM regarding a process to transition their credit card program to another issuer to be selected by GM.

Transaction banking and other. We provide transaction banking and other services, including cash management services, such as deposit-taking and payment solutions for corporate and institutional clients. Transaction banking revenues include net interest income attributed to transaction banking deposits.

The table below presents our Platform Solutions assets.

	As of December	
$ in millions	**2023**	2022
Cash and cash equivalents	**$ 24,043**	$ 20,557
Collateralized agreements	**7,651**	10,278
Customer and other receivables	**3**	2
Trading assets	**14,911**	8,597
Investments	**2**	–
Loans	**20,028**	15,300
Other assets	**1,846**	2,556
Total	**$ 68,484**	$ 57,290

The table below presents details about our Platform Solutions loans.

	As of December	
$ in millions	**2023**	2022
Installment	**$ 3,125**	$ 1,852
Credit cards	**19,361**	15,820
Other	**17**	–
Loans, gross	**22,503**	17,672
Allowance for loan losses	**(2,475)**	(2,372)
Total loans	**$ 20,028**	$ 15,300

The average Platform Solutions gross loans were $21.48 billion for 2023 and $12.43 billion for 2022.

The table below presents our Platform Solutions operating results.

	Year Ended December		
$ in millions	**2023**	2022	2021
Consumer platforms	**$ 2,072**	$ 1,176	$ 424
Transaction banking and other	**306**	326	216
Net revenues	**2,378**	1,502	640
Provision for credit losses	**1,135**	1,728	697
Operating expenses	**3,418**	1,763	990
Pre-tax earnings/(loss)	**(2,175)**	(1,989)	(1,047)
Provision/(benefit) for taxes	**(450)**	(328)	(210)
Net earnings/(loss)	**(1,725)**	(1,661)	(837)
Preferred stock dividends	**23**	12	6
Net earnings/(loss) to common	**$ (1,748)**	$ (1,673)	$ (843)
Average common equity	**$ 3,863**	$ 3,574	$ 1,777
Return on average common equity	**(45.2) %**	(46.8) %	(47.4) %

Provision for credit losses was $1.14 billion for 2023, compared with $1.73 billion for 2022. The net provision for 2023 reflected net provisions related to the credit card portfolio (primarily driven by net charge-offs), partially offset by a net release related to the GreenSky installment loan portfolio (including a reserve reduction of $637 million related to the transfer of the portfolio to held for sale). Provisions for 2022 primarily reflected growth in the credit card portfolio and net charge-offs.

Operating expenses were $3.42 billion for 2023, 94% higher than 2022, primarily due to a write-down of identifiable intangible assets of $506 million related to GreenSky and an impairment of goodwill of $504 million related to Consumer platforms. Pre-tax loss was $2.18 billion for 2023 compared with $1.99 billion for 2022.

Geographic Data

See Note 25 to the consolidated financial statements for a summary of our total net revenues, pre-tax earnings and net earnings by geographic region.

Balance Sheet and Funding Sources

Balance Sheet Management

One of our risk management disciplines is our ability to manage the size and composition of our balance sheet. While our asset base changes due to client activity, market fluctuations and business opportunities, the size and composition of our balance sheet also reflects factors, including (i) our overall risk tolerance, (ii) the amount of capital we hold and (iii) our funding profile, among other factors. See "Capital Management and Regulatory Capital — Capital Management" for information about our capital management process.

Although our balance sheet fluctuates on a day-to-day basis, our total assets at quarter-end are generally not materially different from those occurring within our reporting periods.

In order to ensure appropriate risk management, we seek to maintain a sufficiently liquid balance sheet and have processes in place to dynamically manage our assets and liabilities, which include (i) balance sheet planning, (ii) balance sheet limits, (iii) monitoring of key metrics and (iv) scenario analyses.

Balance Sheet Planning. We prepare a balance sheet plan that combines our projected total assets and composition of assets with our expected funding sources over a three-year time horizon. This plan is reviewed quarterly and may be adjusted in response to changing business needs or market conditions. The objectives of this planning process are:

- To develop our balance sheet projections, taking into account the general state of the financial markets and expected business activity levels, as well as regulatory requirements;
- To allow Treasury and our independent risk oversight and control functions to objectively evaluate balance sheet limit requests from our revenue-producing units in the context of our overall balance sheet constraints, including our liability profile and capital levels, and key metrics; and
- To inform the target amount, tenor and type of funding to raise, based on our projected assets and contractual maturities.

Treasury and our independent risk oversight and control functions, along with our revenue-producing units, review current and prior period information and expectations for the year to prepare our balance sheet plan. The specific information reviewed includes asset and liability size and composition, limit utilization, risk and performance measures, and capital usage.

Our consolidated balance sheet plan, including our balance sheets by business, funding projections and projected key metrics, is reviewed and approved by the Firmwide Asset Liability Committee and the Firmwide Risk Appetite Committee. See "Risk Management — Overview and Structure of Risk Management" for an overview of our risk management structure.

Balance Sheet Limits. The Firmwide Asset Liability Committee and the Firmwide Risk Appetite Committee have the responsibility to review and approve balance sheet limits. These limits are set at levels which are close to actual operating levels, rather than at levels which reflect our maximum risk appetite, in order to ensure prompt escalation and discussion among our revenue-producing units, Treasury and our independent risk oversight and control functions on a routine basis. Requests for changes in limits are evaluated after giving consideration to their impact on our key metrics. Compliance with limits is monitored by our revenue-producing units and Treasury, as well as our independent risk oversight and control functions.

Monitoring of Key Metrics. We monitor key balance sheet metrics both by business and on a consolidated basis, including asset and liability size and composition, limit utilization and risk measures. We attribute assets to businesses and review and analyze movements resulting from new business activity, as well as market fluctuations.

Scenario Analyses. We conduct various scenario analyses, including as part of the Comprehensive Capital Analysis and Review (CCAR) and U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act Stress Tests (DFAST), as well as our resolution and recovery planning. See "Capital Management and Regulatory Capital — Capital Management" for further information about these scenario analyses. These scenarios cover short- and long-term time horizons using various macroeconomic and firm-specific assumptions, based on a range of economic scenarios. We use these analyses to assist us in developing our longer-term balance sheet management strategy, including the level and composition of assets, funding and capital. Additionally, these analyses help us develop approaches for maintaining appropriate funding, liquidity and capital across a variety of situations, including a severely stressed environment.

Balance Sheet Analysis and Metrics

As of December 2023, total assets in our consolidated balance sheets were $1.64 trillion, an increase of $199.80 billion from December 2022, reflecting increases in trading assets of $176.27 billion (due to increases in equity securities and government obligations, reflecting the impact of our and our clients' activities, partially offset by decreases in derivative instruments due to commodity derivatives), investments of $16.21 billion (primarily due to an increase in U.S. government obligations accounted for as held-to-maturity) and collateralized agreements of $9.07 billion (reflecting the impact of our and our clients' activities).

As of December 2023, total liabilities in our consolidated balance sheets were $1.52 trillion, an increase of $200.08 billion from December 2022, reflecting increases in collateralized financings of $168.54 billion (reflecting our and our clients' activities), deposits of $41.75 billion (primarily due to increases in consumer deposits, brokered certificates of deposits and other deposits, partially offset by decreases in deposit sweep program balances and private bank deposits), borrowings of $9.72 billion (driven by increases in fair value, partially offset by net maturities) and trading liabilities of $9.03 billion (primarily due to an increase in government obligations, partially offset by a decrease in equity securities, reflecting the impact of our and our clients' activities), offset by a decrease in customer and other payables of $31.32 billion (primarily reflecting our clients' activities).

Our total securities sold under agreements to repurchase (repurchase agreements), accounted for as collateralized financings, were $249.89 billion as of December 2023 and $110.35 billion as of December 2022, which were 21% higher as of December 2023 and 15% lower as of December 2022 than the average daily amount of repurchase agreements over the respective quarters, and 26% higher as of December 2023 and 27% lower as of December 2022 than the average daily amount of repurchase agreements over the respective years. As of December 2023, the increase in our repurchase agreements relative to the average daily amount of repurchase agreements during the quarter and year resulted from higher levels of our and our clients' activities at the end of the period.

The level of our repurchase agreements fluctuates between and within periods, primarily due to providing clients with access to highly liquid collateral, such as certain government and agency obligations, through collateralized financing activities.

The table below presents information about our balance sheet and leverage ratios.

	As of December	
$ in millions	**2023**	2022
Total assets	**$ 1,641,594**	$ 1,441,799
Unsecured long-term borrowings	**$ 241,877**	$ 247,138
Total shareholders' equity	**$ 116,905**	$ 117,189
Leverage ratio	**14.0x**	12.3x
Debt-to-equity ratio	**2.1x**	2.1x

In the table above:

- The leverage ratio equals total assets divided by total shareholders' equity and measures the proportion of equity and debt we use to finance assets. This ratio is different from the leverage ratios included in Note 20 to the consolidated financial statements.
- The debt-to-equity ratio equals unsecured long-term borrowings divided by total shareholders' equity.

The table below presents information about our shareholders' equity and book value per common share, including the reconciliation of common shareholders' equity to tangible common shareholders' equity.

	As of December	
$ in millions, except per share amounts	**2023**	2022
Total shareholders' equity	**$ 116,905**	$ 117,189
Preferred stock	**(11,203)**	(10,703)
Common shareholders' equity	**105,702**	106,486
Goodwill	**(5,916)**	(6,374)
Identifiable intangible assets	**(1,177)**	(2,009)
Tangible common shareholders' equity	**$ 98,609**	$ 98,103

In the table above:

- Tangible common shareholders' equity is calculated as total shareholders' equity less preferred stock, goodwill and identifiable intangible assets. We believe that tangible common shareholders' equity is meaningful because it is a measure that we and investors use to assess capital adequacy. Tangible common shareholders' equity is a non-GAAP measure and may not be comparable to similar non-GAAP measures used by other companies.

- Book value per common share and tangible book value per common share are based on common shares outstanding and restricted stock units granted to employees with no future service requirements and not subject to performance or market conditions (collectively, basic shares) of 337.1 million as of December 2023 and 350.8 million as of December 2022. We believe that tangible book value per common share (tangible common shareholders' equity divided by basic shares) is meaningful because it is a measure that we and investors use to assess capital adequacy. Tangible book value per common share is a non-GAAP measure and may not be comparable to similar non-GAAP measures used by other companies.

Funding Sources

Our primary sources of funding are deposits, collateralized financings, unsecured short- and long-term borrowings, and shareholders' equity. We seek to maintain broad and diversified funding sources globally across products, programs, markets, currencies and creditors to avoid funding concentrations.

The table below presents information about our funding sources.

	As of December			
$ in millions	**2023**		2022	
Deposits	**$ 428,417**	**36 %**	$ 386,665	40 %
Collateralized financings	**323,564**	**27 %**	155,022	16 %
Unsecured short-term borrowings	**75,945**	**6 %**	60,961	6 %
Unsecured long-term borrowings	**241,877**	**21 %**	247,138	26 %
Total shareholders' equity	**116,905**	**10 %**	117,189	12 %
Total	**$ 1,186,708**	**100 %**	$ 966,975	100 %

Our funding is primarily raised in U.S. dollar, Euro, British pound and Japanese yen. We generally distribute our funding products through our own sales force and third-party distributors to a large, diverse creditor base in a variety of markets in the Americas, Europe and Asia. We believe that our relationships with our creditors are critical to our liquidity. Our creditors include banks, governments, securities lenders, corporations, pension funds, insurance companies, mutual funds and individuals. We have imposed

Deposits. Our deposits provide us with a diversified source of funding and reduce our reliance on wholesale funding. We raise deposits, including savings, demand and time deposits, from private bank clients, consumers, transaction banking clients, other institutional clients, and through internal and third-party broker-dealers. Substantially all of our deposits are raised through Goldman Sachs Bank USA (GS Bank USA), Goldman Sachs International Bank (GSIB) and Goldman Sachs Bank Europe SE (GSBE). See Note 13 to the consolidated financial statements for further information about our deposits, including a maturity profile of our time deposits.

Secured Funding. We fund a significant amount of inventory and a portion of investments on a secured basis. Secured funding includes collateralized financings in the consolidated balance sheets. See Note 11 to the consolidated financial statements for further information about our collateralized financings, including its maturity profile. We may also pledge our inventory and investments as collateral for securities borrowed under a securities lending agreement. We also use our own inventory and investments to cover transactions in which we or our clients have sold securities that have not yet been purchased. Secured funding is less sensitive to changes in our credit quality than unsecured funding, due to our posting of collateral to our lenders. Nonetheless, we analyze the refinancing risk of our secured funding activities, taking into account trade tenors, maturity profiles, counterparty concentrations, collateral eligibility and counterparty rollover probabilities. We seek to mitigate our refinancing risk by executing term trades with staggered maturities, diversifying counterparties, raising excess secured funding and pre-funding residual risk through our GCLA.

We seek to raise secured funding with a term appropriate for the liquidity of the assets that are being financed, and we seek longer maturities for secured funding collateralized by asset classes that may be harder to fund on a secured basis, especially during times of market stress. Our secured funding, excluding funding collateralized by liquid government and agency obligations, is primarily executed for tenors of one month or greater and is primarily executed through term repurchase agreements and securities loaned contracts.

Assets that may be harder to fund on a secured basis during times of market stress include certain financial instruments in the following categories: mortgage- and other asset-backed loans and securities, non-investment-grade corporate debt securities, equity securities and emerging market securities.

We also raise financing through other types of collateralized financings, such as secured loans and notes. GS Bank USA has access to funding from the Federal Home Loan Bank. We had no outstanding borrowings from the Federal Home Loan Bank as of both December 2023 and December 2022. Additionally, we have access to funding through the Federal Reserve discount window, but we do not rely on this funding in our liquidity planning and stress testing.

Unsecured Short-Term Borrowings. A significant portion of our unsecured short-term borrowings was originally long-term debt that is scheduled to mature within one year of the reporting date. We use unsecured short-term borrowings, including U.S. and non-U.S. hybrid financial instruments and commercial paper, to finance liquid assets and for other cash management purposes. In accordance with regulatory requirements, Group Inc. does not issue debt with an original maturity of less than one year, other than to its subsidiaries. See Note 14 to the consolidated financial statements for further information about our unsecured short-term borrowings.

Unsecured Long-Term Borrowings. Unsecured long-term borrowings, including structured notes, are raised through syndicated U.S. registered offerings, U.S. registered and Rule 144A medium-term note programs, offshore medium-term note offerings and other debt offerings. We issue in different tenors, currencies and products to maximize the diversification of our investor base.

The table below presents our quarterly unsecured long-term borrowings maturity profile.

$ in millions	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
As of December 2023					
2025	$ 15,074	$ 12,446	$ 7,099	$ 13,213	$ 47,832
2026	$ 6,702	$ 4,928	$ 7,966	$ 10,551	30,147
2027	$ 8,989	$ 3,332	$ 6,981	$ 16,790	36,092
2028	$ 11,505	$ 6,345	$ 4,790	$ 5,388	28,028
2029 - thereafter					99,778
Total					$ 241,877

The weighted average maturity of our unsecured long-term borrowings as of December 2023 was approximately six years. To mitigate refinancing risk, we seek to limit the principal amount of debt maturing over the course of any monthly, quarterly, semi-annual or annual time horizon. We enter into interest rate swaps to convert a portion of our unsecured long-term borrowings into floating-rate obligations to manage our exposure to interest rates. See Note 14 to the consolidated financial statements for further information about our unsecured long-term borrowings.

Shareholders' Equity. Shareholders' equity is a stable and perpetual source of funding. See Note 19 to the consolidated financial statements for further information about our shareholders' equity.

Capital Management and Regulatory Capital

Capital adequacy is of critical importance to us. We have in place a comprehensive capital management policy that provides a framework, defines objectives and establishes guidelines to assist us in maintaining the appropriate level and composition of capital in both business-as-usual and stressed conditions.

Capital Management

We determine the appropriate amount and composition of our capital by considering multiple factors, including our current and future regulatory capital requirements, the results of our capital planning and stress testing process, the results of resolution capital models and other factors, such as rating agency guidelines, subsidiary capital requirements, the business environment and conditions in the financial markets.

We manage our capital requirements and the levels of our capital usage principally by setting limits on the balance sheet and/or limits on risk, in each case at both the firmwide and business levels.

We principally manage the level and composition of our capital through issuances and repurchases of our common stock.

We may issue, redeem or repurchase our preferred stock and subordinated debt or other forms of capital as business conditions warrant. Prior to such redemptions or repurchases, we must receive approval from the FRB. See Notes 14 and 19 to the consolidated financial statements for further information about our subordinated debt and preferred stock.

Capital Planning and Stress Testing Process. As part of capital planning, we project sources and uses of capital given a range of business environments, including stressed conditions. Our stress testing process is designed to identify and measure material risks associated with our business activities, including market risk, credit risk, operational risk and liquidity risk, as well as our ability to generate revenues.

Our capital planning process incorporates an internal capital adequacy assessment with the objective of ensuring that we are appropriately capitalized relative to the risks in our businesses. We incorporate stress scenarios into our capital planning process with a goal of holding sufficient capital to ensure we remain adequately capitalized after experiencing a severe stress event. Our assessment of capital adequacy is viewed in tandem with our assessment of liquidity adequacy and is integrated into our overall risk management structure, governance and policy framework.

Our stress tests incorporate our internally designed stress scenarios, including our internally developed severely adverse scenario, and those required by the FRB, and are designed to capture our specific vulnerabilities and risks. We provide further information about our stress test processes and a summary of the results on our website as described in "Business — Available Information" in Part I, Item 1 of this Form 10-K.

As required by the FRB's CCAR rules, we submit an annual capital plan for review by the FRB. The purpose of the FRB's review is to ensure that we have a robust, forward-looking capital planning process that accounts for our unique risks and that permits continued operation during times of economic and financial stress.

The FRB evaluates us based, in part, on whether we have the capital necessary to continue operating under the baseline and severely adverse scenarios provided by the FRB and those developed internally. This evaluation also takes into account our process for identifying risk, our controls and governance for capital planning, and our guidelines for making capital planning decisions. In addition, the FRB evaluates our plan to make capital distributions (i.e., dividend payments and repurchases or redemptions of stock, subordinated debt or other capital securities) and issue capital, across the range of macroeconomic scenarios and firm-specific assumptions. The FRB determines the SCB applicable to us based on its own annual stress test. The SCB under the Standardized approach is calculated as (i) the difference between our starting and minimum projected CET1 capital ratios under the supervisory severely adverse scenario and (ii) our planned common stock dividends for each of the fourth through seventh quarters of the planning horizon, expressed as a percentage of risk-weighted assets (RWAs).

Based on our 2023 CCAR submission, the FRB reduced our SCB from 6.3% to 5.5%, resulting in a Standardized CET1 capital ratio requirement of 13.0% for the period from October 1, 2023 through September 30, 2024. See "Share Repurchase Program" for further information about common stock repurchases and dividends and "Consolidated Regulatory Capital" for further information about the G-SIB surcharge. We published a summary of our annual DFAST results in June 2023. See "Business — Available Information" in Part I, Item 1 of this Form 10-K.

GS Bank USA is required to conduct stress tests on an annual basis and publish a summary of certain results. GS Bank USA published a summary of its annual DFAST results in June 2023. See "Business — Available Information" in Part I, Item 1 of this Form 10-K.

Goldman Sachs International (GSI), GSIB and GSBE also have their own capital planning and stress testing processes, which incorporate internally designed stress tests developed in accordance with the guidelines of their respective regulators.

Contingency Capital Plan. As part of our comprehensive capital management policy, we maintain a contingency capital plan. Our contingency capital plan provides a framework for analyzing and responding to a perceived or actual capital deficiency, including, but not limited to, identification of drivers of a capital deficiency, as well as mitigants and potential actions. It outlines the appropriate communication procedures to follow during a crisis period, including internal dissemination of information, as well as timely communication with external stakeholders.

Capital Attribution. We assess the capital usage of each of our businesses based on our attributed equity framework. This framework considers many factors, including our internal assessment of risks as well as the regulatory capital requirements related to our business activities, which take into consideration our binding capital constraints. Our binding capital constraints include our CET1 capital ratio requirement under the Standardized Capital Rules, which incorporates the SCB as determined by the FRB based on its own annual stress test.

We review and make any necessary adjustments to our attributed equity in January each year, to reflect, among other things, our most recent stress test results and changes to our regulatory capital requirements. On January 1, 2024, our allocation of attributed equity changed (relative to the allocation as of December 2023) as follows: attributed equity increased by approximately $1.6 billion for Platform Solutions, while attributed equity decreased by approximately $1.2 billion for Asset & Wealth Management and approximately $0.4 billion for Global Banking & Markets. See "Results of Operations — Segment Assets and Operating Results — Segment Operating Results" for information about our average quarterly attributed equity by segment.

Share Repurchase Program. We use our share repurchase program to help maintain the appropriate level of common equity. On an annual basis, we submit a Board of Directors of Group Inc. (Board) approved capital plan to the Federal Reserve, which includes planned share repurchases for each quarter. The share repurchases are effected primarily through regular open-market purchases (which may include repurchase plans designed to comply with Rule 10b5-1 and accelerated share repurchases), the amounts and timing of which are determined primarily by our current and projected capital position, and capital deployment opportunities, but which may also be influenced by general market conditions and the prevailing price and trading volumes of our common stock.

In February 2023, the Board approved a share repurchase program authorizing repurchases of up to $30 billion of our common stock. The program has no set expiration or termination date. See "Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities" in Part II, Item 5 of this Form 10-K and Note 19 to the consolidated financial statements for further information about our share repurchase program, and see above for information about our capital planning and stress testing process.

During 2023, we returned a total of $9.39 billion of capital to common shareholders, including $5.80 billion of common share repurchases and $3.59 billion of common stock dividends. Consistent with our capital management philosophy, we will continue prioritizing deployment of capital for our clients where returns are attractive and distribute any excess capital to shareholders through dividends and share repurchases.

Effective January 1, 2023, a one percent non-deductible federal excise tax (buyback tax) applies to the fair market value of certain corporate share repurchases. The fair market value of share repurchases subject to the tax is reduced by the fair market value of any stock issued during the calendar year, including stock issued to employees. The buyback tax did not have a material impact on our financial condition, results of operations or cash flows for 2023.

Resolution Capital Models. In connection with our resolution planning efforts, we have established a Resolution Capital Adequacy and Positioning framework, which is designed to ensure that our major subsidiaries (GS Bank USA, Goldman Sachs & Co. LLC (GS&Co.), GSI, GSIB, GSBE, Goldman Sachs Japan Co., Ltd. (GSJCL), Goldman Sachs Asset Management, L.P. and Goldman Sachs Asset Management International) have access to sufficient loss-absorbing capacity (in the form of equity, subordinated debt and unsecured senior debt) so that they are able to wind down following a Group Inc. bankruptcy filing in accordance with our preferred resolution strategy.

In addition, we have established a triggers and alerts framework, which is designed to provide the Board with information needed to make an informed decision on whether and when to commence bankruptcy proceedings for Group Inc.

We submitted our 2023 resolution plan in June 2023. See "Business — Available Information" in Part I, Item 1 of this Form 10-K for information about the public portion of our resolution plan submission. GS Bank USA submitted its 2023 resolution plan in December 2023.

Rating Agency Guidelines

The credit rating agencies assign credit ratings to the obligations of Group Inc., which directly issues or guarantees substantially all of our senior unsecured debt obligations. GS&Co. and GSI have been assigned long- and short-term issuer ratings by certain credit rating agencies. GS Bank USA, GSIB and GSBE have also been assigned long- and short-term issuer ratings, as well as ratings on their long- and short-term bank deposits. In addition, credit rating agencies have assigned ratings to debt obligations of certain other subsidiaries of Group Inc.

The level and composition of our capital are among the many factors considered in determining our credit ratings. Each agency has its own definition of eligible capital and methodology for evaluating capital adequacy, and assessments are generally based on a combination of factors rather than a single calculation. See "Risk Management — Liquidity Risk Management — Credit Ratings" for further information about credit ratings of Group Inc., GS Bank USA, GSIB, GSBE, GS&Co. and GSI.

Consolidated Regulatory Capital

We are subject to consolidated regulatory capital requirements which are calculated in accordance with the regulations of the FRB (Capital Framework). Under the Capital Framework, we are an "Advanced approaches" banking organization and have been designated as a G-SIB.

The capital requirements calculated under the Capital Framework include the capital conservation buffer requirements, which are comprised of a 2.5% buffer (under the Advanced Capital Rules), the SCB (under the Standardized Capital Rules), a countercyclical capital buffer (under both Capital Rules) and the G-SIB surcharge (under both Capital Rules). Our G-SIB surcharge is 3.0% for both 2023 and 2024. The G-SIB surcharge and countercyclical capital buffer in the future may differ due to additional guidance from our regulators and/or positional changes, and our SCB is likely to change from year to year based on the results of the annual supervisory stress tests. Our target is to maintain capital ratios equal to the regulatory requirements plus a buffer of 50 to 100 basis points.

See Note 20 to the consolidated financial statements for further information about our risk-based capital ratios and leverage ratios, and the Capital Framework.

Total Loss-Absorbing Capacity (TLAC)

We are also subject to the FRB's TLAC and related requirements. Failure to comply with the TLAC and related requirements would result in restrictions being imposed by the FRB and could limit our ability to repurchase shares, pay dividends and make certain discretionary compensation payments.

The table below presents TLAC and external long-term debt requirements.

	As of December	
	2023	2022
TLAC to RWAs	**22.0 %**	21.5 %
TLAC to leverage exposure	**9.5 %**	9.5 %
External long-term debt to RWAs	**9.0 %**	8.5 %
External long-term debt to leverage exposure	**4.5 %**	4.5 %

In the table above:

- The TLAC to RWAs requirement included (i) the 18% minimum, (ii) the 2.5% buffer, (iii) the countercyclical capital buffer, which the FRB has set to zero percent and (iv) the G-SIB surcharge (Method 1). The G-SIB surcharge (Method 1) was 1.5% as of December 2023 and 1.0% as of December 2022.
- The TLAC to leverage exposure requirement includes (i) the 7.5% minimum and (ii) the 2.0% leverage exposure buffer.
- The external long-term debt to RWAs requirement includes (i) the 6% minimum and (ii) the G-SIB surcharge (Method 2). The G-SIB surcharge (Method 2) was 3.0% as of December 2023 and 2.5% as of December 2022.
- The external long-term debt to total leverage exposure is the 4.5% minimum.

The table below presents information about our TLAC and external long-term debt ratios.

	For the Three Months Ended or as of December	
$ in millions	**2023**	2022
TLAC	**$ 278,188**	$ 297,100
External long-term debt	**$ 154,300**	$ 172,845
RWAs	**$ 692,737**	$ 679,450
Leverage exposure	**$ 1,995,756**	$ 1,867,358
TLAC to RWAs	**40.2 %**	43.7 %
TLAC to leverage exposure	**13.9 %**	15.9 %
External long-term debt to RWAs	**22.3 %**	25.4 %
External long-term debt to leverage exposure	**7.7 %**	9.3 %

In the table above:

- TLAC includes common and preferred stock, and eligible long-term debt issued by Group Inc. Eligible long-term debt represents unsecured debt, which has a remaining maturity of at least one year and satisfies additional requirements.
- External long-term debt consists of eligible long-term debt subject to a haircut if it is due to be paid between one and

See "Business — Regulation" in Part I, Item 1 of this Form 10-K for further information about TLAC.

Subsidiary Capital Requirements

Many of our subsidiaries, including our bank and broker-dealer subsidiaries, are subject to separate regulation and capital requirements of the jurisdictions in which they operate.

Bank Subsidiaries. GS Bank USA is our primary U.S. banking subsidiary and GSIB and GSBE are our primary non-U.S. banking subsidiaries. These entities are subject to regulatory capital requirements. See Note 20 to the consolidated financial statements for further information about the regulatory capital requirements for GS Bank USA.

- **GSIB.** GSIB is our U.K. bank subsidiary regulated by the Prudential Regulation Authority (PRA) and the Financial Conduct Authority (FCA). GSIB is subject to the U.K. capital framework, which is largely based on the Basel Committee on Banking Supervision's (Basel Committee) capital framework for strengthening international capital standards (Basel III). The eligible retail deposits of GSIB are covered by the U.K. Financial Services Compensation Scheme to the extent provided by law.

  The table below presents GSIB's risk-based capital requirements.

	As of December	
	2023	2022
Risk-based capital requirements		
CET1 capital ratio	**10.1 %**	9.7 %
Tier 1 capital ratio	**12.4 %**	11.9 %
Total capital ratio	**15.4 %**	14.9 %

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

	As of December	
$ in millions	**2023**	2022
Risk-based capital and risk-weighted assets		
CET1 capital	**$ 3,936**	$ 3,395
Tier 1 capital	**$ 3,936**	$ 3,395
Tier 2 capital	**$ 826**	$ 828
Total capital	**$ 4,762**	$ 4,223
RWAs	**$ 16,546**	$ 15,766
Risk-based capital ratios		
CET1 capital ratio	**23.8 %**	21.5 %
Tier 1 capital ratio	**23.8 %**	21.5 %
Total capital ratio	**28.8 %**	26.8 %

In the table above, the risk-based capital ratios as of December 2023 reflected profits after foreseeable charges

The table below presents GSIB's leverage ratio requirement which became effective in January 2023 and the leverage ratio.

	As of December 2023
Leverage ratio requirement	**3.6 %**
Leverage ratio	**7.4 %**

In the table above, the leverage ratio as of December 2023 reflected profits after foreseeable charges that are still subject to audit by GSIB's external auditors and approval by GSIB's Board of Directors for inclusion in risk-based capital. These profits contributed 101 basis points to the leverage ratio as of December 2023.

GSIB is subject to minimum reserve requirements at central banks in certain of the jurisdictions in which it operates. As of both December 2023 and December 2022, GSIB was in compliance with these requirements.

- **GSBE.** GSBE is our German bank subsidiary supervised by the European Central Bank, BaFin and Deutsche Bundesbank. GSBE is a non-U.S. banking subsidiary of GS Bank USA and is also subject to standalone regulatory capital requirements noted below. GSBE is subject to the capital requirements prescribed in the amended E.U. Capital Requirements Directive (CRD) and E.U. Capital Requirements Regulation (CRR), which are largely based on Basel III. The deposits of GSBE are covered by the German statutory deposit protection program to the extent provided by law. In addition, GSBE has elected to participate in the German voluntary deposit protection program which provides further insurance for certain eligible deposits beyond the coverage of the German statutory deposit program.

The table below presents GSBE's risk-based capital requirements.

	As of December	
	2023	2022
Risk-based capital requirements		
CET1 capital ratio	**10.0 %**	9.2 %
Tier 1 capital ratio	**12.1 %**	11.3 %
Total capital ratio	**14.8 %**	14.0 %

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

	As of December	
$ in millions	**2023**	2022
Risk-based capital and risk-weighted assets		
CET1 capital	**$ 14,143**	$ 9,536
Tier 1 capital	**$ 14,143**	$ 9,536
Tier 2 capital	**$ 22**	$ 21
Total capital	**$ 14,165**	$ 9,557
RWAs	**$ 39,746**	$ 30,154
Risk-based capital ratios		
CET1 capital ratio	**35.6 %**	31.6 %
Tier 1 capital ratio	**35.6 %**	31.6 %
Total capital ratio	**35.6 %**	31.7 %

In the table above, the risk-based capital ratios as of December 2023 reflected profits after foreseeable charges that are still subject to audit by GSBE's external auditors and approval by GSBE's shareholder (GS Bank USA) for inclusion in risk-based capital. These profits contributed 97 basis points to the CET1 capital ratio as of December 2023.

The table below presents GSBE's leverage ratio requirement and leverage ratio.

	As of December	
	2023	2022
Leverage ratio requirement	**3.0 %**	3.0 %
Leverage ratio	**11.3 %**	10.6 %

In the table above, the leverage ratio as of December 2023 reflected profits after foreseeable charges that are still subject to audit by GSBE's external auditors and approval by GSBE's shareholder (GS Bank USA) for inclusion in risk-based capital. These profits contributed 58 basis points to the leverage ratio as of December 2023.

GSBE is subject to minimum reserve requirements at central banks in certain of the jurisdictions in which it operates. As of both December 2023 and December 2022, GSBE was in compliance with these requirements.

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

U.S. Regulated Broker-Dealer Subsidiaries. GS&Co., our primary U.S. regulated broker-dealer subsidiary, is also a registered futures commission merchant and a registered swap dealer with the CFTC, and a registered security-based swap dealer with the SEC, and therefore is subject to regulatory capital requirements imposed by the SEC, the Financial Industry Regulatory Authority, Inc., the CFTC, the Chicago Mercantile Exchange and the National Futures Association. Rule 15c3-1 of the SEC and Rules 1.17 and Part 23 Subpart E of the CFTC specify uniform minimum net capital requirements, as defined, for their registrants, and also effectively require that a significant part of the registrants' assets be kept in relatively liquid form. GS&Co. has elected to calculate its SEC minimum capital requirements in accordance with the "Alternative Net Capital Requirement" as permitted by Rule 15c3-1 of the SEC.

GS&Co. had regulatory net capital, as defined by Rule 15c3-1 of the SEC, of $20.25 billion as of December 2023 and $22.21 billion as of December 2022, which exceeded the greater of the minimum amounts required under Rule 15c3-1 of the SEC and Rules 1.17 and Part 23 Subpart E of the CFTC by $15.07 billion as of December 2023 and $17.46 billion as of December 2022. In addition to its alternative minimum net capital requirements, GS&Co. is also required to hold tentative net capital in excess of $5 billion and net capital in excess of $1 billion in accordance with Rule 15c3-1. GS&Co. is also required to notify the SEC in the event that its tentative net capital is less than $6 billion. As of both December 2023 and December 2022, GS&Co. had tentative net capital and net capital in excess of both the minimum and the notification requirements.

Non-U.S. Regulated Broker-Dealer Subsidiaries. Our principal non-U.S. regulated broker-dealer subsidiaries include GSI and GSJCL.

GSI, our U.K. broker-dealer, is regulated by the PRA and the FCA. GSI is subject to the U.K. capital framework, which is largely based on Basel III.

The table below presents GSI's risk-based capital requirements.

	As of December	
	2023	2022
Risk-based capital requirements		
CET1 capital ratio	**9.1 %**	8.7 %
Tier 1 capital ratio	**11.0 %**	10.7 %
Total capital ratio	**13.7 %**	13.3 %

In the table above, the risk-based capital requirements incorporate capital guidance received from the PRA and could change in the future.

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

	As of December	
$ in millions	**2023**	2022
Risk-based capital and risk-weighted assets		
CET1 capital	**$ 32,403**	$ 31,780
Tier 1 capital	**$ 37,903**	$ 40,080
Tier 2 capital	**$ 6,877**	$ 5,377
Total capital	**$ 44,780**	$ 45,457
RWAs	**$ 257,956**	$ 247,653
Risk-based capital ratios		
CET1 capital ratio	**12.6 %**	12.8%
Tier 1 capital ratio	**14.7 %**	16.2%
Total capital ratio	**17.4 %**	18.4%

In the table above, the risk-based capital ratios as of December 2023 reflected profits after dividends paid and foreseeable charges that are still subject to verification by GSI's external auditors and approval by GSI's Board of Directors for inclusion in risk-based capital. These profits contributed 18 basis points to the CET1 capital ratio as of December 2023.

The table below presents GSI's leverage ratio requirement which became effective in January 2023 and the leverage ratio.

	As of December 2023
Leverage ratio requirement	**3.5 %**
Leverage ratio	**4.9 %**

In the table above, the leverage ratio as of December 2023 reflected profits after dividends paid and foreseeable charges that are still subject to verification by GSI's external auditors and approval by GSI's Board of Directors for inclusion in risk-based capital. These profits contributed 7 basis points to the leverage ratio as of December 2023.

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

GSI is also subject to a minimum requirement for own funds and eligible liabilities issued to affiliates. As of both December 2023 and December 2022, GSI was in compliance with this requirement.

GSJCL, our Japanese broker-dealer, is regulated by Japan's Financial Services Agency. GSJCL and certain other non-U.S. subsidiaries are also subject to capital requirements promulgated by authorities of the countries in which they operate. As of both December 2023 and December 2022, these subsidiaries were in compliance with their local capital

Regulatory and Other Matters

Our businesses are subject to extensive regulation and supervision worldwide. Regulations have been adopted or are being considered by regulators and policy makers worldwide. Given that many of the new and proposed rules are highly complex, the full impact of regulatory reform will not be known until the rules are implemented and market practices develop under the final regulations.

See "Business — Regulation" in Part I, Item 1 of this Form 10-K for further information about the laws, rules and regulations and proposed laws, rules and regulations that apply to us and our operations.

Off-Balance Sheet Arrangements

In the ordinary course of business, we enter into various types of off-balance sheet arrangements. Our involvement in these arrangements can take many different forms, including:

- Purchasing or retaining residual and other interests in special purpose entities, such as mortgage-backed and other asset-backed securitization vehicles;
- Holding senior and subordinated debt, interests in limited and general partnerships, and preferred and common stock in other nonconsolidated vehicles;
- Entering into interest rate, foreign currency, equity, commodity and credit derivatives, including total return swaps; and
- Providing guarantees, indemnifications, commitments, letters of credit and representations and warranties.

We enter into these arrangements for a variety of business purposes, including securitizations. The securitization vehicles that purchase mortgages, corporate bonds and other types of financial assets are critical to the functioning of several significant investor markets, including the mortgage-backed and other asset-backed securities markets, since they offer investors access to specific cash flows and risks created through the securitization process.

We also enter into these arrangements to underwrite client securitization transactions; provide secondary market liquidity; make investments in performing and nonperforming debt, distressed loans, power-related assets, equity securities, real estate and other assets; and provide investors with credit-linked and asset-repackaged notes.

The table below presents where information about our various off-balance sheet arrangements may be found in this Form 10-K. In addition, see Note 3 to the consolidated financial statements for information about our consolidation policies.

Off-Balance Sheet Arrangement		**Disclosure in Form 10-K**
Variable interests and other obligations, including contingent obligations, arising from variable interests in nonconsolidated variable interest entities		See Note 17 to the consolidated financial statements.
Guarantees, and lending and other commitments		See Note 18 to the consolidated financial statements.
Derivatives		See "Risk Management — Credit Risk Management — Credit Exposures — OTC Derivatives" and Notes 4, 5, 7 and 18 to the consolidated financial statements.

Risk Management

Risks are inherent in our businesses and include liquidity, market, credit, operational, cybersecurity, model, legal, compliance, conduct, regulatory and reputational risks. For further information about our risk management processes, see "Overview and Structure of Risk Management," and for information about our areas of risk, see "Liquidity Risk Management," "Market Risk Management," "Credit Risk Management," "Operational Risk Management," "Cybersecurity Risk Management," "Model Risk Management" and "Other Risk Management," as well as "Risk Factors" in Part I, Item 1A of this Form 10-K.

Overview and Structure of Risk Management

Overview

We believe that effective risk management is critical to our success. Accordingly, we have established an enterprise risk management framework that employs a comprehensive, integrated approach to risk management and is designed to enable comprehensive risk management processes through which we identify, assess, monitor and manage the risks we assume in conducting our activities. Our risk management structure is built around three core components: governance, processes and people.

Governance. Risk management governance starts with the Board, which both directly and through its committees, including its Risk Committee, oversees our risk management policies and practices implemented through the enterprise risk management framework. The Board is also responsible for the annual review and approval of our risk appetite statement. The risk appetite statement describes the levels and types of risk we are willing to accept or to avoid in order to achieve our objectives included in our strategic business plan, while remaining in compliance with regulatory requirements. The Board reviews our strategic business plan and is ultimately responsible for overseeing and providing direction about our strategy and risk appetite.

The Board, including through its committees, receives regular briefings on firmwide risks, including liquidity risk, market risk, credit risk, operational risk, cybersecurity risk, model risk and climate risk, from our independent risk oversight and control functions, including our chief risk officer, on cybersecurity threats and risks from our chief information security officer (CISO), on compliance risk and conduct risk from our chief compliance officer, on legal and regulatory enforcement matters from our chief legal officer, and on other matters impacting our reputation from the chair and/or vice-chairs of our Firmwide Reputational Risk Committee. The chief risk officer reports to our chief executive officer and to the Risk Committee of the Board. As part of the review of the firmwide risk portfolio, the chief risk officer regularly advises the Risk Committee of the Board of relevant risk metrics and material exposures, including risk limits and thresholds established in our risk appetite statement.

The implementation of our risk governance structure and core risk management processes is overseen by Enterprise Risk, which reports to our chief risk officer, and is responsible for ensuring that our enterprise risk management framework provides the Board, our risk committees and senior management with a consistent and integrated approach to managing our various risks in a manner consistent with our risk appetite.

Our revenue-producing units, as well as Treasury, Engineering, Human Capital Management, Operations, and Corporate and Workplace Solutions, are considered our first line of defense. They are accountable for the outcomes of our risk-generating activities, as well as for assessing and managing those risks within our risk appetite.

Our independent risk oversight and control functions are considered our second line of defense and provide independent assessment, oversight and challenge of the risks taken by our first line of defense, as well as lead and participate in risk committees. Independent risk oversight and control functions include Compliance, Conflicts Resolution, Controllers, Legal, Risk and Tax.

Internal Audit is considered our third line of defense, and our director of Internal Audit reports to the Audit Committee of the Board and administratively to our chief executive officer. Internal Audit includes professionals with a broad range of audit and industry experience, including risk management expertise. Internal Audit is responsible for independently assessing and validating the effectiveness of key controls, including those within the risk management framework, and providing timely reporting to the Audit Committee of the Board, senior management and regulators.

The three lines of defense structure promotes the accountability of first line risk takers, provides a framework for effective challenge by the second line and empowers independent review from the third line.

Processes. We maintain various processes that are critical components of our risk management framework, including (i) risk identification and control assessment, (ii) risk appetite, limits, thresholds and alerts setting, (iii) risk metrics, reporting and monitoring, and (iv) risk decision-making.

- **Risk Identification and Control Assessment.** We believe the identification of our risks and related control assessment is a critical step in providing our Board and senior management transparency and insight into the range and materiality of our risks. We have a comprehensive data collection process, including firmwide policies and procedures that require all employees to report and escalate risk events. Our approach for risk identification and control assessment is comprehensive across all risk types, is dynamic and forward-looking to reflect and adapt to our changing risk profile and business environment, leverages subject matter expertise, and allows for prioritization of our most critical risks. This approach also encompasses our control assessment, led by our second line of defense, to review and challenge the control environment to help ensure it supports our strategic business plan.

  To effectively assess our risks, we maintain a daily discipline of marking substantially all of our inventory to current market levels. We carry our inventory at fair value, with changes in valuation reflected immediately in our risk management systems and in net revenues. We do so because we believe this discipline is one of the most effective tools for assessing and managing risk and that it provides transparent and realistic insight into our inventory exposures.

  An important part of our risk management process is firmwide stress testing. It allows us to quantify our exposure to tail risks, highlight potential loss concentrations, undertake risk/reward analysis, and assess and mitigate our risk positions. Firmwide stress tests are performed on a regular basis and are designed to ensure a comprehensive analysis of our vulnerabilities and idiosyncratic risks combining financial and nonfinancial risks, including, but not limited to, credit, market, liquidity and funding, operational and compliance, climate, strategic, systemic and emerging risks into a single combined scenario. We also perform ad hoc stress tests in anticipation of market events or conditions. Stress tests are also used to assess capital adequacy as part of our capital planning and stress testing process. See "Capital Management and Regulatory Capital — Capital Management" for further information.

- **Risk Appetite, Limits, Thresholds and Alerts Setting.** We apply a framework of limits and thresholds to control and monitor risk across transactions, products, businesses and markets. The Board, directly or indirectly through its Risk Committee, approves limits, thresholds and alerts included in our risk appetite statement at firmwide, business and product levels. In addition, the Firmwide Risk Appetite Committee, through delegated authority from the Firmwide Enterprise Risk Committee, is responsible for approving our risk limits, thresholds and alerts policy, subject to the overall limits approved by the Risk Committee of the Board, and monitoring these limits.

  The Firmwide Risk Appetite Committee is responsible for approving limits at firmwide, business and product levels. Certain limits may be set at levels that will require periodic adjustment, rather than at levels that reflect our maximum risk appetite. This fosters an ongoing dialogue about risk among our first and second lines of defense, committees and senior management, as well as rapid escalation of risk-related matters. Additionally, through delegated authority from the Firmwide Risk Appetite Committee, Market Risk sets limits at certain product and desk levels, and Credit Risk sets limits for individual counterparties and their subsidiaries, industries and countries. Limits are reviewed regularly and amended on a permanent or temporary basis to reflect changes to our strategic business plan, as well as changing market conditions, business conditions or risk tolerance.

- **Risk Metrics, Reporting and Monitoring.** Effective risk reporting and risk decision-making depends on our ability to get the right information to the right people at the right time. As such, we focus on the rigor and effectiveness of our risk systems, with the objective of ensuring that our risk management technology systems provide us with complete, accurate and timely information. Our risk metrics, reporting and monitoring processes are designed to take into account information about both existing and emerging risks, thereby enabling our risk committees and senior management to perform their responsibilities with the appropriate level of insight into risk exposures. Furthermore, our limit and threshold breach processes provide means for timely escalation. We evaluate changes in our risk profile and our businesses, including changes in business mix or jurisdictions in which we operate, by monitoring risk factors at a firmwide level.

- **Risk Decision-Making.** Our governance structure provides the protocol and responsibility for decision-making on risk management issues and is designed to ensure implementation of those decisions. We make extensive use of risk committees that meet regularly and serve as an important means to facilitate and foster ongoing discussions to manage and mitigate risks.

  We maintain strong and proactive communication about risk and we have a culture of collaboration in decision-making among our first and second lines of defense, committees and senior management. While our first line of defense is responsible for management of their risk, we dedicate extensive resources to our second line of defense in order to ensure a strong oversight structure and an appropriate segregation of duties. We regularly reinforce our strong culture of escalation and accountability across all functions.

People. Even the best technology serves only as a tool for helping to make informed decisions in real time about the risks we are taking. Ultimately, effective risk management requires our people to interpret our risk data on an ongoing and timely basis and adjust risk positions accordingly. The experience of our professionals, and their understanding of the nuances and limitations of each risk measure, guides us in assessing exposures and maintaining them within prudent levels.

We reinforce a culture of effective risk management, consistent with our risk appetite, in our training and development programs, as well as in the way we evaluate performance, and recognize and reward our people. Our training and development programs, including certain sessions led by our most senior leaders, are focused on the importance of risk management, client relationships and reputational excellence. As part of our performance review process, we assess reputational excellence, including how an employee exercises good risk management and reputational judgment, and adheres to our code of conduct and compliance policies. Our review and reward processes are designed to communicate and reinforce to our professionals the link between behavior and how people are recognized, the need to focus on our clients and our reputation, and the need to always act in accordance with our highest standards.

Structure

Ultimate oversight of risk is the responsibility of our Board. The Board oversees risk both directly and through its committees, including its Risk Committee. We also have a series of committees that generally consist of senior managers from both our first and second lines of defense, with specific risk management mandates that have oversight or decision-making responsibilities for risk management activities. We have established procedures for these committees so that appropriate information barriers are in place. Our primary risk committees, most of which also have additional sub-committees, councils or working groups, are described below. In addition to these committees, we have other risk committees that provide oversight for different businesses, activities, products, regions and entities. All of our committees have responsibility for considering the impact on our reputation of the transactions and activities that they oversee.

Membership of our risk committees is reviewed regularly and updated to reflect changes in the responsibilities of the committee members. Accordingly, the length of time that members serve on the respective committees varies as determined by the committee chairs and based on the responsibilities of the members.

The chart below presents an overview of our risk management governance structure.

Governance Chart.jpg

Management Committee. The Management Committee oversees our global activities. It provides this oversight directly and through authority delegated to committees it has established. This committee consists of our most senior leaders, and is chaired by our chief executive officer. Most members of the Management Committee are also members of other committees. The following are the committees that are principally involved in firmwide risk management.

Firmwide Enterprise Risk Committee. The Firmwide Enterprise Risk Committee is responsible for overseeing all of our financial and nonfinancial risks. As part of such oversight, the committee is responsible for the ongoing review, approval and monitoring of our enterprise risk management framework, as well as our risk limits, and thresholds and alerts policy, through delegated authority to the Firmwide Risk Appetite Committee. The Firmwide Enterprise Risk Committee also reviews new significant strategic business initiatives to determine whether they are consistent with our risk appetite and risk management capabilities. Additionally, the Firmwide Enterprise Risk Committee performs enhanced reviews of significant risk events, the top residual and emerging risks, and the overall risk and control environment in each of our business units in order to propose uplifts, identify elements that are common to all business units and analyze the consolidated residual risks that we face. This committee, which reports to the Management Committee, is co-chaired by our president and chief operating officer and our chief risk officer, who are appointed as chairs by our chief executive officer, and the vice-chair is our chief financial officer, who is appointed as vice-chair by the chairs of the Firmwide Enterprise Risk Committee. The Firmwide Enterprise Risk Committee also periodically provides updates to, and receives guidance from, the Risk Committee of the Board. The following are the primary committees or councils that report to the Firmwide Enterprise Risk Committee (unless otherwise noted):

- **Firmwide Risk Council.** The Firmwide Risk Council is responsible for the ongoing monitoring of relevant financial risks at the firmwide, business and product levels. This council is co-chaired by our chief financial officer and our chief risk officer.
- **Firmwide New Activity Committee.** The Firmwide New Activity Committee is responsible for reviewing new activities and for establishing a process to identify and review previously approved activities that are significant and that have changed in complexity and/or structure or present different reputational and suitability concerns over time to consider whether these activities remain appropriate. This committee is chaired by our controller and chief accounting officer, who is appointed as chair by the chairs of the Firmwide Enterprise Risk Committee.
- **Firmwide Operational Risk and Resilience Committee.** The Firmwide Operational Risk and Resilience Committee is responsible for overseeing operational risk, and seeks to ensure our business and operational resilience. To assist the Firmwide Operational Risk and Resilience Committee in carrying out its mandate, other risk committees with dedicated oversight for technology-related risks, including cybersecurity matters and artificial intelligence (AI), report into the Firmwide Operational Risk and Resilience Committee. This committee is co-chaired by our chief administrative officer for EMEA and our head of Operational Risk, who are appointed as chairs by the chairs of the Firmwide Enterprise Risk Committee.
- **Firmwide Conduct Committee.** The Firmwide Conduct Committee is responsible for the ongoing approval and monitoring of the frameworks and policies which govern our conduct risks. Conduct risk is the risk that our people fail to act in a manner consistent with our Business Principles and related core values, policies or codes, or applicable laws or regulations, thereby falling short in fulfilling their responsibilities to us, our clients, colleagues, other market participants or the broader community. This committee is chaired by our chief legal officer, who is appointed as chair by the chairs of the Firmwide Enterprise Risk Committee.
- **Firmwide Risk Appetite Committee.** The Firmwide Risk Appetite Committee (through delegated authority from the Firmwide Enterprise Risk Committee) is responsible for the ongoing approval and monitoring of risk frameworks, policies and parameters related to our core risk management processes, as well as limits, thresholds and alerts, at firmwide, business and product levels. In addition, this committee is responsible for overseeing our financial risks and reviews the results of stress tests and scenario analyses. To assist the Firmwide Risk Appetite Committee in carrying out its mandate, a number of other risk committees with dedicated oversight for stress testing, model risks, Volcker Rule compliance, as well as our investments or other capital commitments that may give rise to financial risk, report into the Firmwide Risk Appetite Committee. This committee is chaired by our chief risk officer, who is appointed as chair by the chairs of the Firmwide Enterprise Risk Committee. The Firmwide Capital Committee and Firmwide Commitments Committee report to the Firmwide Risk Appetite Committee.

  Firmwide Capital Committee. The Firmwide Capital Committee provides approval and oversight of debt-related transactions, including principal commitments of our capital. This committee aims to ensure that business, reputational and suitability standards for underwritings and capital commitments are maintained on a global basis. This committee is co-chaired by our head of Credit Risk and a co-head of our Global Financing Group, who are appointed as chairs by the chair of the Firmwide Risk Appetite Committee.

Firmwide Commitments Committee. The Firmwide Commitments Committee reviews our underwriting and distribution activities with respect to equity and equity-related product offerings, and sets and maintains policies and procedures designed to ensure that legal, reputational, regulatory and business standards are maintained on a global basis. In addition to reviewing specific transactions, this committee periodically conducts general strategic reviews of sectors and products and establishes policies in connection with transaction practices. This committee is co-chaired by our chief equity underwriting officer for the Americas, a co-chairman of our Global Financial Institutions Group, and a co-head of our Global Investment Grade Capital Markets and Risk Management Group in Global Banking & Markets, who are appointed as chairs by the chair of the Firmwide Risk Appetite Committee.

- **Firmwide Reputational Risk Committee.** The Firmwide Reputational Risk Committee is responsible for assessing reputational risks arising from opportunities that have been identified as having potential heightened reputational risk, including transactions identified pursuant to the criteria established by the Firmwide Reputational Risk Committee and as determined by committee leadership. This committee is also responsible for overseeing client-related business standards and addressing client-related reputational risk. This committee is chaired by our president and chief operating officer, who is appointed as chair by our chief executive officer, and the vice-chairs are our chief legal officer and the head of Conflicts Resolution, who are appointed as vice-chairs by the chair of the Firmwide Reputational Risk Committee. This committee periodically provides updates to, and receives guidance from, the Public Responsibilities Committee of the Board. The Firmwide Suitability Committee reports to the Firmwide Reputational Risk Committee.

  Firmwide Suitability Committee. The Firmwide Suitability Committee is responsible for setting standards and policies for product, transaction and client suitability and providing a forum for consistency across functions, regions and products on suitability assessments. This committee also reviews suitability matters escalated from other committees. This committee is co-chaired by our chief compliance officer and an advisory director, who are appointed as chairs by the chair of the Firmwide Reputational Risk Committee.

- **Firmwide Data Governance Committee.** The Firmwide Data Governance Committee is responsible for overseeing the firmwide data governance framework, and its implementation, to help ensure that data governance and data quality are appropriate. This committee is co-chaired by our chief information officer and our chief risk officer, who are appointed as chairs by the chairs of the Firmwide Enterprise Risk Committee.

Firmwide Asset Liability Committee. The Firmwide Asset Liability Committee reviews and approves the strategic direction for our financial resources, including capital, liquidity, funding and balance sheet. This committee has oversight responsibility for asset liability management, including interest rate and currency risk, funds transfer pricing, capital allocation and incentives, and credit ratings. This committee makes recommendations as to any adjustments to asset liability management and financial resource allocation in light of current events, risks, exposures, and regulatory requirements and approves related policies. This committee is co-chaired by our chief financial officer and our global treasurer, who are appointed as chairs by our chief executive officer, and reports to the Management Committee.

Liquidity Risk Management

Overview

Liquidity risk is the risk that we will be unable to fund ourselves or meet our liquidity needs in the event of firm-specific, broader industry or market liquidity stress events. We have in place a comprehensive and conservative set of liquidity and funding policies. Our principal objective is to be able to fund ourselves and to enable our core businesses to continue to serve clients and generate revenues, even under adverse circumstances.

Treasury, which reports to our chief financial officer, has primary responsibility for developing, managing and executing our liquidity and funding strategy within our risk appetite.

Liquidity Risk, which is independent of our revenue-producing units and Treasury, and reports to our chief risk officer, has primary responsibility for identifying, monitoring and managing our liquidity risk through firmwide oversight across our global businesses and the establishment of stress testing and limits frameworks.

Liquidity Risk Management Principles

We manage liquidity risk according to three principles: (i) hold sufficient excess liquidity in the form of GCLA to cover outflows during a stressed period, (ii) maintain appropriate Asset-Liability Management and (iii) maintain a viable Contingency Funding Plan.

GCLA. GCLA is liquidity that we maintain to meet a broad range of potential cash outflows and collateral needs in a stressed environment. A primary liquidity principle is to pre-fund our estimated potential cash and collateral needs during a liquidity crisis and hold this liquidity in the form of unencumbered, highly liquid securities and cash. We believe that the securities held in our GCLA would be readily convertible to cash in a matter of days, through liquidation, by entering into repurchase agreements or from maturities of resale agreements, and that this cash would allow us to meet immediate obligations without needing to sell other assets or depend on additional funding from credit-sensitive markets.

Our GCLA reflects the following principles:

- The first days or weeks of a liquidity crisis are the most critical to a company's survival;
- Focus must be maintained on all potential cash and collateral outflows, not just disruptions to financing flows. Our businesses are diverse, and our liquidity needs are determined by many factors, including market movements, collateral requirements and client commitments, all of which can change dramatically in a difficult funding environment;
- During a liquidity crisis, credit-sensitive funding, including unsecured debt, certain deposits and some types of secured financing agreements, may be unavailable, and the terms (e.g., interest rates, collateral provisions and tenor) or availability of other types of secured financing may change and certain deposits may be withdrawn; and
- As a result of our policy to pre-fund liquidity that we estimate may be needed in a crisis, we hold more unencumbered securities and have larger funding balances than our businesses would otherwise require. We believe that our liquidity is stronger with greater balances of highly liquid unencumbered securities, even though it increases our total assets and our funding costs.

We maintain our GCLA across Group Inc., Goldman Sachs Funding LLC (Funding IHC) and Group Inc.'s major broker-dealer and bank subsidiaries, asset types and clearing agents with the goal of providing us with sufficient operating liquidity to ensure timely settlement in all major markets, even in a difficult funding environment. In addition to the GCLA, we maintain cash balances and securities in several of our other entities, primarily for use in specific currencies, entities or jurisdictions where we do not have immediate access to parent company liquidity.

Asset-Liability Management. Our liquidity risk management policies are designed to ensure we have a sufficient amount of financing, even when funding markets experience persistent stress. We manage the maturities and diversity of our funding across markets, products and counterparties, and seek to maintain a diversified funding profile with an appropriate tenor, taking into consideration the characteristics and liquidity profile of our assets.

Our approach to asset-liability management includes:

- Conservatively managing the overall characteristics of our funding book, with a focus on maintaining long-term, diversified sources of funding in excess of our current requirements. See "Balance Sheet and Funding Sources — Funding Sources" for further information;
- Actively managing and monitoring our asset base, with particular focus on the liquidity, holding period and ability to fund assets on a secured basis. We assess our funding requirements and our ability to liquidate assets in a stressed environment while appropriately managing risk. This enables us to determine the most appropriate funding products and tenors. See "Balance Sheet and Funding Sources — Balance Sheet Management" for further information about our balance sheet management process and "— Funding Sources — Secured Funding" for further information about asset classes that may be harder to fund on a secured basis; and
- Raising secured and unsecured financing that has a long tenor relative to the liquidity profile of our assets. This reduces the risk that our liabilities will come due in advance of our ability to generate liquidity from the sale of our assets. Because we maintain a highly liquid balance sheet, the holding period of certain of our assets may be materially shorter than their contractual maturity dates.

Our goal is to ensure that we maintain sufficient liquidity to fund our assets and meet our contractual and contingent obligations in normal times, as well as during periods of market stress. Through our dynamic balance sheet management process, we use actual and projected asset balances to determine secured and unsecured funding requirements. Funding plans are reviewed and approved by the Firmwide Asset Liability Committee. In addition, our independent risk oversight and control functions analyze, and the Firmwide Asset Liability Committee reviews, our total unsecured long-term borrowings and total shareholders' equity to help ensure that we maintain a level of long-term funding that is sufficient to meet our long-term financing requirements. In a liquidity crisis, we would begin by liquidating and monetizing our GCLA before selling other assets. However, we recognize that orderly asset sales may be prudent or necessary in a severe or persistent liquidity crisis.

Subsidiary Funding Policies

The majority of our unsecured borrowings is raised by Group Inc., which provides the necessary funds to Funding IHC and other subsidiaries, some of which are regulated, to meet their asset financing, liquidity and capital requirements. In addition, Group Inc. provides its regulated subsidiaries with the necessary capital to meet their regulatory requirements. The benefits of this approach to subsidiary funding are enhanced control and greater flexibility to meet the funding requirements of our subsidiaries. Funding is also raised at the subsidiary level through a variety of products, including deposits, secured funding and unsecured borrowings.

Our intercompany funding policies assume that a subsidiary's funds or securities are not freely available to its parent, Funding IHC or other subsidiaries unless (i) legally provided for and (ii) there are no additional regulatory, tax or other restrictions. In particular, many of our subsidiaries are subject to laws that authorize regulatory bodies to block or reduce the flow of funds from those subsidiaries to Group Inc. or Funding IHC. Regulatory action of that kind could impede access to funds that Group Inc. needs to make payments on its obligations. Accordingly, we assume that the capital provided to our regulated subsidiaries is not available to Group Inc. or other subsidiaries and any other financing provided to our regulated subsidiaries is not available to Group Inc. or Funding IHC until the maturity of such financing.

Group Inc. has provided substantial amounts of equity and subordinated indebtedness, directly or indirectly, to its regulated subsidiaries. For example, as of December 2023, Group Inc. had $36.58 billion of equity and subordinated indebtedness invested in GS&Co., its principal U.S. registered broker-dealer; $47.17 billion invested in GSI, a regulated U.K. broker-dealer; $2.44 billion invested in GSJCL, a regulated Japanese broker-dealer; $56.91 billion invested in GS Bank USA, a regulated New York State-chartered bank; and $4.80 billion invested in GSIB, a regulated U.K. bank. Group Inc. also provides financing, directly or indirectly, in the form of: $137.58 billion of unsubordinated loans (including secured loans of $40.47 billion) and $35.60 billion of collateral and cash deposits to these entities as of December 2023. In addition, as of December 2023, Group Inc. had significant amounts of capital invested in and loans to its other regulated subsidiaries.

Contingency Funding Plan. We maintain a contingency funding plan to provide a framework for analyzing and responding to a liquidity crisis situation or periods of market stress. Our contingency funding plan outlines a list of potential risk factors, key reports and metrics that are reviewed on an ongoing basis to assist in assessing the severity of, and managing through, a liquidity crisis and/or market dislocation. The contingency funding plan also describes in detail our potential responses if our assessments indicate that we have entered a liquidity crisis, which include pre-funding for what we estimate will be our potential cash and collateral needs, as well as utilizing secondary sources of liquidity. Mitigants and action items to address specific risks which may arise are also described and assigned to individuals responsible for execution.

The contingency funding plan identifies key groups of individuals and their responsibilities, which include fostering effective coordination, control and distribution of information, implementing liquidity maintenance activities and managing internal and external communication, all of which are critical in the management of a crisis or period of market stress.

Stress Tests

In order to determine the appropriate size of our GCLA, we model liquidity outflows over a range of scenarios and time horizons. One of our primary internal liquidity risk models, referred to as the Modeled Liquidity Outflow, quantifies our liquidity risks over a 30-day stress scenario. We also consider other factors, including, but not limited to, an assessment of our potential intraday liquidity needs through an additional internal liquidity risk model, referred to as the Intraday Liquidity Model, the results of our long-term stress testing models, our resolution liquidity models and other applicable regulatory requirements and a qualitative assessment of our condition, as well as the financial markets. The results of the Modeled Liquidity Outflow, the Intraday Liquidity Model, the long-term stress testing models and the resolution liquidity models are reported to senior management on a regular basis. We also perform firmwide stress tests. See "Overview and Structure of Risk Management" for information about firmwide stress tests.

Modeled Liquidity Outflow. Our Modeled Liquidity Outflow is based on conducting multiple scenarios that include combinations of market-wide and firm-specific stress. These scenarios are characterized by the following qualitative elements:

- Severely challenged market environments, which include low consumer and corporate confidence, financial and political instability, and adverse changes in market values, including potential declines in equity markets and widening of credit spreads; and
- A firm-specific crisis potentially triggered by material losses, reputational damage (including, as a result of, the dissemination of negative information through social media), litigation and/or a ratings downgrade.

The following are key modeling elements of our Modeled Liquidity Outflow:

- Liquidity needs over a 30-day scenario;
- A two-notch downgrade of our long-term senior unsecured credit ratings;
- Changing conditions in funding markets, which limit our access to unsecured and secured funding;
- No support from additional government funding facilities. Although we have access to various central bank funding programs, we do not assume reliance on additional sources of funding in a liquidity crisis; and
- A combination of contractual outflows and contingent outflows arising from both our on- and off-balance sheet arrangements. Contractual outflows include, among other things, upcoming maturities of unsecured debt, term deposits and secured funding. Contingent outflows include, among other things, the withdrawal of customer credit balances in our prime brokerage business, increase in variation margin requirements due to adverse changes in the value of our exchange-traded and OTC-cleared derivatives, draws on unfunded commitments and withdrawals of deposits that have no contractual maturity. See notes to the consolidated financial statements for further information about contractual outflows, including Note 11 for collateralized financings, Note 13 for deposits, Note 14 for unsecured long-term borrowings and Note 15 for operating lease payments, and "Off-Balance Sheet Arrangements" for further information about our various types of off-balance sheet arrangements.

Intraday Liquidity Model. Our Intraday Liquidity Model measures our intraday liquidity needs in a scenario where access to sources of intraday liquidity may become constrained. The intraday liquidity model considers a variety of factors, including historical settlement activity.

Long-Term Stress Testing. We utilize longer-term stress tests to take a forward view on our liquidity position through prolonged stress periods in which we experience a severe liquidity stress and recover in an environment that continues to be challenging. We are focused on ensuring conservative asset-liability management to prepare for a prolonged period of potential stress, seeking to maintain a diversified funding profile with an appropriate tenor, taking into consideration the characteristics and liquidity profile of our assets.

Resolution Liquidity Models. In connection with our resolution planning efforts, we have established our Resolution Liquidity Adequacy and Positioning framework, which estimates liquidity needs of our major subsidiaries in a stressed environment. The liquidity needs are measured using our Modeled Liquidity Outflow assumptions and include certain additional inter-affiliate exposures. We have also established our Resolution Liquidity Execution Need framework, which measures the liquidity needs of our major subsidiaries to stabilize and wind down following a Group Inc. bankruptcy filing in accordance with our preferred resolution strategy.

In addition, we have established a triggers and alerts framework, which is designed to provide the Board with information needed to make an informed decision on whether and when to commence bankruptcy proceedings for Group Inc.

Limits

We use liquidity risk limits at various levels and across liquidity risk types to manage the size of our liquidity exposures. Limits are measured relative to acceptable levels of risk given our liquidity risk tolerance. See "Overview and Structure of Risk Management" for information about the limit approval process.

Limits are monitored by Treasury and Liquidity Risk. Liquidity Risk is responsible for identifying and escalating to senior management and/or the appropriate risk committee, on a timely basis, instances where limits have been exceeded.

GCLA and Unencumbered Metrics

GCLA. Based on the results of our internal liquidity risk models, described above, as well as our consideration of other factors, including, but not limited to, a qualitative assessment of our condition, as well as the financial markets, we believe our liquidity position as of both December 2023 and December 2022 was appropriate. We strictly limit our GCLA to a narrowly defined list of securities and cash because they are highly liquid, even in a difficult funding environment. We do not include other potential sources of excess liquidity in our GCLA, such as less liquid unencumbered securities or committed credit facilities.

The table below presents information about our GCLA.

	Average for the			
	Three Months Ended December		Year Ended December	
$ in millions	**2023**	2022	**2023**	2022
Denomination				
U.S. dollar	**$ 282,414**	$ 312,414	**$ 282,307**	$ 281,427
Non-U.S. dollar	**131,176**	96,404	**124,691**	116,655
Total	**$ 413,590**	$ 408,818	**$ 406,998**	$ 398,082
Asset Class				
Overnight cash deposits	**$ 204,929**	$ 217,141	**$ 231,066**	$ 228,203
U.S. government obligations	**150,806**	149,519	**133,000**	126,349
U.S. agency obligations	**22,895**	12,789	**16,387**	11,007
Non-U.S. government obligations	**34,960**	29,369	**26,545**	32,523
Total	**$ 413,590**	$ 408,818	**$ 406,998**	$ 398,082
Entity Type				
Group Inc. and Funding IHC	**$ 65,952**	$ 69,386	**$ 66,803**	$ 64,579
Major broker-dealer subsidiaries	**117,818**	109,502	**114,824**	113,887
Major bank subsidiaries	**229,820**	229,930	**225,371**	219,616
Total	**$ 413,590**	$ 408,818	**$ 406,998**	$ 398,082

In the table above:

- The U.S. dollar-denominated GCLA consists of (i) unencumbered U.S. government and agency obligations (including highly liquid U.S. agency mortgage-backed obligations), all of which are eligible as collateral in Federal Reserve open market operations and (ii) certain overnight U.S. dollar cash deposits.
- The non-U.S. dollar-denominated GCLA consists of non-U.S. government obligations (only unencumbered German, French, Japanese and U.K. government obligations) and certain overnight cash deposits in highly liquid currencies.

We maintain our GCLA to enable us to meet current and potential liquidity requirements of our parent company, Group Inc., and its subsidiaries. Our Modeled Liquidity Outflow and Intraday Liquidity Model incorporate a requirement for Group Inc., as well as a standalone requirement for each of our major broker-dealer and bank subsidiaries. Funding IHC is required to provide the necessary liquidity to Group Inc. during the ordinary course of business, and is also obligated to provide capital and liquidity support to major subsidiaries in the event of our material financial distress or failure. Liquidity held directly

Other Unencumbered Assets. In addition to our GCLA, we have a significant amount of other unencumbered cash and financial instruments, including other government obligations, high-grade money market securities, corporate obligations, marginable equities, loans and cash deposits not included in our GCLA. The fair value of our unencumbered assets averaged $286.51 billion for the three months ended December 2023, $273.49 billion for the three months ended December 2022, $281.95 billion for the year ended December 2023 and $275.69 billion for the year ended December 2022. We do not consider these assets liquid enough to be eligible for our GCLA.

Liquidity Regulatory Framework

We are subject to a minimum Liquidity Coverage Ratio (LCR) under the LCR rule approved by the U.S. federal bank regulatory agencies. The LCR rule requires organizations to maintain an adequate ratio of eligible high-quality liquid assets (HQLA) to expected net cash outflows under an acute, short-term liquidity stress scenario. Eligible HQLA excludes HQLA held by subsidiaries that is in excess of their minimum requirement and is subject to transfer restrictions. We are required to maintain a minimum LCR of 100%. We expect that fluctuations in client activity, business mix and the market environment will impact our LCR.

The table below presents information about our average daily LCR.

	Average for the Three Months Ended		
	December	September	December
$ in millions	**2023**	2023	2022
Total HQLA	**$ 401,721**	$ 397,758	$ 401,836
Eligible HQLA	**$ 326,181**	$ 316,291	$ 291,118
Net cash outflows	**$ 255,106**	$ 253,238	$ 226,532
LCR	**128 %**	125 %	129 %

In the table above, our average quarterly LCR represents the average of our daily LCRs during the quarter.

We are also subject to a minimum Net Stable Funding Ratio (NSFR) under the NSFR rule approved by the U.S. federal bank regulatory agencies. The NSFR rule requires large U.S. banking organizations to maintain available stable funding (ASF) above their required stable funding (RSF) over a one-year time horizon. Total ASF excludes ASF held by subsidiaries that is in excess of their minimum requirement and is subject to transfer restrictions. We are required to maintain a minimum NSFR of 100%. We expect that fluctuations in client activity, business mix and the market environment will impact our NSFR.

The table below presents information about our average daily NSFR.

	Average for the

The following provides information about our subsidiary liquidity regulatory requirements:

- **GS Bank USA.** GS Bank USA is subject to a minimum LCR of 100% under the LCR rule approved by the U.S. federal bank regulatory agencies. As of December 2023, GS Bank USA's LCR exceeded the minimum requirement. The NSFR requirement described above also applies to GS Bank USA. As of December 2023, GS Bank USA's NSFR exceeded the minimum requirement.

- **GSI and GSIB.** GSI and GSIB are subject to a minimum LCR of 100% under the LCR rule approved by the U.K. regulatory authorities. GSI's and GSIB's average monthly LCR for the trailing twelve-month period ended December 2023 exceeded the minimum requirement. GSI and GSIB are subject to the applicable NSFR requirement in the U.K. As of December 2023, both GSI's and GSIB's NSFR exceeded the minimum requirement.

- **GSBE.** GSBE is subject to a minimum LCR of 100% under the LCR rule approved by the European Parliament and Council. GSBE's average monthly LCR for the trailing twelve-month period ended December 2023 exceeded the minimum requirement. GSBE is subject to the applicable NSFR requirement in the E.U. As of December 2023, GSBE's NSFR exceeded the minimum requirement.

- **Other Subsidiaries.** We monitor local regulatory liquidity requirements of our subsidiaries to ensure compliance. For many of our subsidiaries, these requirements either have changed or are likely to change in the future due to the implementation of the Basel Committee's framework for liquidity risk measurement, standards and monitoring, as well as other regulatory developments.

The implementation of these rules and any amendments adopted by the regulatory authorities could impact our liquidity and funding requirements and practices in the future.

Credit Ratings

We rely on the short- and long-term debt capital markets to fund a significant portion of our day-to-day operations, and the cost and availability of debt financing is influenced by our credit ratings. Credit ratings are also important when we are competing in certain markets, such as OTC derivatives, and when we seek to engage in longer-term transactions. See "Risk Factors" in Part I, Item 1A of this Form 10-K for information about the risks associated with a reduction in our credit ratings.

The table below presents the unsecured credit ratings and outlook of Group Inc.

	As of December 2023				
	DBRS	**Fitch**	**Moody's**	**R&I**	**S&P**
Short-term debt	**R-1 (middle)**	**F1**	**P-1**	**a-1**	**A-2**
Long-term debt	**A (high)**	**A**	**A2**	**A**	**BBB+**
Subordinated debt	**A**	**BBB+**	**Baa2**	**A-**	**BBB**
Trust preferred	**A**	**BBB-**	**Baa3**	**N/A**	**BB+**
Preferred stock	**BBB (high)**	**BBB-**	**Ba1**	**N/A**	**BB+**
Ratings outlook	**Stable**	**Stable**	**Stable**	**Stable**	**Stable**

In the table above:

- The ratings and outlook are by DBRS, Inc. (DBRS), Fitch, Inc. (Fitch), Moody's Investors Service (Moody's), Rating and Investment Information, Inc. (R&I), and Standard & Poor's Ratings Services (S&P).

- The ratings for trust preferred relate to the guaranteed preferred beneficial interests issued by Goldman Sachs Capital I.

- The DBRS, Fitch, Moody's and S&P ratings for preferred stock include the APEX issued by Goldman Sachs Capital II and Goldman Sachs Capital III.

The table below presents the unsecured credit ratings and outlook of GS Bank USA, GSIB, GSBE, GS&Co. and GSI.

	As of December 2023		
	Fitch	**Moody's**	**S&P**
GS Bank USA			
Short-term debt	**F1**	**P-1**	**A-1**
Long-term debt	**A+**	**A1**	**A+**
Short-term bank deposits	**F1+**	**P-1**	**N/A**
Long-term bank deposits	**AA-**	**A1**	**N/A**
Ratings outlook	**Stable**	**Stable**	**Stable**
GSIB			
Short-term debt	**F1**	**P-1**	**A-1**
Long-term debt	**A+**	**A1**	**A+**
Short-term bank deposits	**F1**	**P-1**	**N/A**
Long-term bank deposits	**A+**	**A1**	**N/A**
Ratings outlook	**Stable**	**Stable**	**Stable**
GSBE			
Short-term debt	**F1**	**P-1**	**A-1**
Long-term debt	**A+**	**A1**	**A+**
Short-term bank deposits	**N/A**	**P-1**	**N/A**
Long-term bank deposits	**N/A**	**A1**	**N/A**

We believe our credit ratings are primarily based on the credit rating agencies' assessment of:

- Our liquidity, market, credit and operational risk management practices;
- Our level and variability of earnings;
- Our capital base;
- Our franchise, reputation and management;
- Our corporate governance; and
- The external operating and economic environment, including, in some cases, the assumed level of government support or other systemic considerations, such as potential resolution.

Certain of our derivatives have been transacted under bilateral agreements with counterparties who may require us to post collateral or terminate the transactions based on changes in our credit ratings. We manage our GCLA to ensure we would, among other potential requirements, be able to make the additional collateral or termination payments that may be required in the event of a two-notch reduction in our long-term credit ratings, as well as collateral that has not been called by counterparties, but is available to them. See Note 7 to the consolidated financial statements for further information about derivatives with credit-related contingent features and the additional collateral or termination payments related to our net derivative liabilities under bilateral agreements that could have been called by counterparties in the event of a one- or two-notch downgrade in our credit ratings.

Cash Flows

As a global financial institution, our cash flows are complex and bear little relation to our net earnings and net assets. Consequently, we believe that traditional cash flow analysis is less meaningful in evaluating our liquidity position than the liquidity and asset-liability management policies described above. Cash flow analysis may, however, be helpful in highlighting certain macro trends and strategic initiatives in our businesses.

Year Ended December 2023. Our cash and cash equivalents decreased by $248 million to $241.58 billion at the end of 2023, due to net cash used for investing and operating activities, partially offset by net cash provided by financing activities and the effect of exchange rate changes on cash and cash equivalents. The net cash used for investing activities primarily reflected net purchases of investments (primarily U.S. government obligations accounted for as held-to-maturity securities). The net cash used for operating activities primarily reflected cash outflows from trading assets and customer and other receivables and payables, net (reflecting a decrease in customer and other payables, partially offset by a decrease in customer and other receivables), partially offset by cash inflows from collateralized transactions (reflecting an increase in collateralized financings, partially offset by an increase in collateralized agreements), net earnings and trading liabilities. The net cash provided by financing activities primarily reflected cash inflows from deposits (reflecting increases in consumer deposits, brokered certificates of deposits and other deposits, partially offset by decreases in deposits sweep program balances and private bank deposits), partially offset by net repayments of unsecured long-term borrowings. The increase in cash and cash equivalents as a result of changes in foreign exchange rates was due to the U.S. dollar weakening during 2023.

Year Ended December 2022. Our cash and cash equivalents decreased by $19.21 billion to $241.83 billion at the end of 2022, due to net cash used for investing activities and the effect of exchange rate changes on cash and cash equivalents, partially offset by net cash provided by financing and operating activities. The net cash used for investing activities primarily reflected purchases of investments (primarily U.S. government obligations accounted for as held-to-maturity) and an increase in net lending activities (reflecting increases in other collateralized and consumer loans). The net cash provided by financing activities primarily reflected cash inflows from net issuances of unsecured long-term borrowings and deposits (reflecting increases in transaction banking and private bank and consumer deposits, partially offset by a decrease in other deposits). The net cash provided by operating activities primarily reflected cash inflows from trading assets and liabilities, customer and other receivables and payables, net (reflecting both a decrease in customer and other receivables and an increase in customer and other payables), net earnings and loans held for sale, net, partially offset by cash outflows from collateralized transactions (reflecting both a decrease in collateralized financings and an increase in collateralized agreements). The decrease in cash and cash equivalents as a result of changes in foreign exchange rates was due to the U.S. dollar strengthening during 2022.

For an analysis of cash flows for the year ended December 2021, see Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the year ended December 31, 2022.

Market Risk Management

Overview

Market risk is the risk of an adverse impact to our earnings due to changes in market conditions. Our assets and liabilities that give rise to market risk primarily include positions held for market making for our clients and for our investing and financing activities, and these positions change based on client demands and our investment opportunities. We employ a variety of risk measures, each described in the respective sections below, to monitor market risk. Categories of market risk include the following:

- Interest rate risk: results from exposures to changes in the level, slope and curvature of yield curves, the volatilities of interest rates, prepayment speeds and credit spreads;
- Equity price risk: results from exposures to changes in prices and volatilities of individual equities, baskets of equities and equity indices;
- Currency rate risk: results from exposures to changes in spot prices, forward prices and volatilities of currency rates; and
- Commodity price risk: results from exposures to changes in spot prices, forward prices and volatilities of commodities, such as crude oil, petroleum products, natural gas, electricity, and precious and base metals.

Market Risk, which is independent of our revenue-producing units and reports to our chief risk officer, has primary responsibility for assessing, monitoring and managing our market risk through firmwide oversight across our global businesses.

Managers in revenue-producing units, Treasury and Market Risk discuss market information, positions and estimated loss scenarios on an ongoing basis. Managers in revenue-producing units and Treasury are accountable for managing risk within prescribed limits. These managers have in-depth knowledge of their positions, markets and the instruments available to hedge their exposures.

Market Risk Management Process

Our process for managing market risk includes the critical components of our risk management framework described in the "Overview and Structure of Risk Management," as well as the following:

- Monitoring compliance with established market risk limits and reporting our exposures;
- Diversifying exposures;
- Controlling position sizes; and
- Evaluating mitigants, such as economic hedges in related securities or derivatives.

Our market risk management systems enable us to perform an independent calculation of Value-at-Risk (VaR), Earnings-at-Risk (EaR) and other stress measures, capture risk measures at individual position levels, attribute risk measures to individual risk factors of each position, report many different views of the risk measures (e.g., by desk, business, product type or entity) and produce ad hoc analyses in a timely manner.

Risk Measures

We produce risk measures and monitor them against established market risk limits. These measures reflect an extensive range of scenarios and the results are aggregated at product, business and firmwide levels.

We use a variety of risk measures to estimate the size of potential losses for both moderate and more extreme market moves over both short- and long-term time horizons. Our primary risk measures are VaR, EaR and other stress tests.

Our risk reports detail key risks, drivers and changes for each desk and business, and are distributed daily to senior management of both our revenue-producing units and our independent risk oversight and control functions.

Value-at-Risk. VaR is the potential loss in value due to adverse market movements over a defined time horizon with a specified confidence level. For assets and liabilities included in VaR, see "Financial Statement Linkages to Market Risk Measures." We typically employ a one-day time horizon with a 95% confidence level. We use a single VaR model, which captures risks, including those related to interest rates, equity prices, currency rates and commodity prices. As such, VaR facilitates comparison across portfolios of different risk characteristics. VaR also captures the diversification of aggregated risk at the firmwide level.

We are aware of the inherent limitations to VaR and therefore use a variety of risk measures in our market risk management process. Inherent limitations to VaR include:

- VaR does not estimate potential losses over longer time horizons where moves may be extreme;
- VaR does not take account of the relative liquidity of different risk positions; and
- Previous moves in market risk factors may not produce accurate predictions of all future market moves.

To comprehensively capture our exposures and relevant risks in our VaR calculation, we use historical simulations with full valuation of market factors at the position level by simultaneously shocking the relevant market factors for that position. These market factors include spot prices, credit spreads, funding spreads, yield curves, volatility and correlation, and are updated periodically based on changes in the composition of positions, as well as variations in market conditions. We sample from five years of historical data to generate the scenarios for our VaR calculation. The historical data is weighted so that the relative importance of the data reduces over time. This gives greater importance to more recent observations and reflects current asset volatilities, which improves the accuracy of our estimates of potential loss. As a result, even if our positions included in VaR were unchanged, our VaR would increase with increasing market volatility and vice versa.

Given its reliance on historical data, VaR is most effective in estimating risk exposures in markets in which there are no sudden fundamental changes or shifts in market conditions.

Our VaR measure does not include:

- Positions that are not accounted for at fair value, such as held-to-maturity securities and loans, deposits and unsecured borrowings that are accounted for at amortized cost;
- Available-for-sale securities for which the related unrealized fair value gains and losses are included in accumulated other comprehensive income/(loss);
- Positions that are best measured and monitored using sensitivity measures; and
- The impact of changes in counterparty and our own credit spreads on derivatives, as well as changes in our own credit spreads on financial liabilities for which the fair value option was elected.

We perform daily backtesting of our VaR model (i.e., comparing daily net revenues for positions included in VaR to the VaR measure calculated as of the prior business day) at the firmwide level and for each of our businesses and major regulated subsidiaries.

Earnings-at-Risk. We manage our interest rate risk using the EaR metric. EaR measures the estimated impact of changes in interest rates to our net revenues and preferred stock dividends over a defined time horizon. EaR complements the VaR metric, which measures the impact of interest rate changes that have an immediate impact on the fair values of our assets and liabilities (i.e., mark-to-market changes). Our exposure to interest rate risk occurs due to a variety of factors, including, but not limited to:

- Differences in maturity or repricing dates of assets, liabilities, preferred stock and certain off-balance sheet instruments.
- Differences in the amounts of assets, liabilities, preferred stock and certain off-balance sheet instruments with the same maturity or repricing dates.
- Certain interest rate sensitive fees.

Treasury manages the aggregated interest rate risk from all businesses using our investment securities portfolio and interest rate derivatives. We measure EaR over a one-year time horizon following a 100- and 200-basis point instantaneous parallel shock in both short- and long-term interest rates. This sensitivity is calculated relative to a baseline market scenario, which takes into consideration, among other things, the market's expectation of forward rates, as well as our expectation of future business activity. These scenarios include contractual elements of assets, liabilities, preferred stock, and certain off-balance sheet instruments, such as rates of interest, principal repayment schedules, maturity and reset dates, and any interest rate ceilings or floors, as well as assumptions with respect to our balance sheet size and composition, prepayment behavior and deposit repricing. Deposit repricing is captured by evaluating the change in deposit rate paid relative to the change in market rates (deposit beta) and we calibrate the deposit betas used in our models by using a number of factors, including observed historical behavior, future expectations, funding needs and the competitive landscape. We continuously monitor the performance of our key assumptions against observed behavior and regularly review their sensitivity on our risk metrics.

We manage EaR with a goal to reduce potential volatility resulting from changes in interest rates so it remains within our EaR risk appetite. Our EaR scenario is regularly evaluated and updated, if necessary, to reflect changes in our business plans, market conditions and other macroeconomic factors. While management uses the best information available to estimate EaR, actual results may differ materially as a result of, among other things, changes in the economic environment or assumptions used in the process. We also measure the sensitivity of the economic value of our equity (EVE) to changes in interest rates. Compared to EaR, EVE provides a longer-term measurement of the interest rate risk exposure, primarily on non-trading assets and liabilities, by capturing the net impact of changes in interest rates to the present value of their cash flows.

Risk, which is independent of our revenue-producing units, and Treasury, have primary responsibility for assessing and monitoring EaR and EVE sensitivity through firmwide oversight, including oversight of interest rate risk stress testing and assumptions, and the establishment of our risk appetite.

Stress Testing. Stress testing is a method of determining the effect of various hypothetical stress scenarios. In addition to EaR, we use other stress tests to examine risks of specific portfolios, as well as the potential impact of our significant risk exposures. We use a variety of stress testing techniques to calculate the potential loss from a wide range of market moves on our portfolios, including firmwide stress tests, sensitivity analysis and scenario analysis. The results of our various stress tests are analyzed together for risk management purposes. See "Overview and Structure of Risk Management" for information about firmwide stress tests.

Sensitivity analysis is used to quantify the impact of a market move in a single risk factor across all positions (e.g., equity prices or credit spreads) using a variety of defined market shocks, ranging from those that could be expected over a one-day time horizon up to those that could take many months to occur. We also use sensitivity analysis to quantify the impact of the default of any single entity, which captures the risk of large or concentrated exposures.

Scenario analysis is used to quantify the impact of a specified event, including how the event impacts multiple risk factors simultaneously. For example, for sovereign stress testing we calculate potential direct exposure associated with our sovereign positions, as well as the corresponding debt, equity and currency exposures associated with our non-sovereign positions that may be impacted by the sovereign distress. When conducting scenario analysis, we often consider a number of possible outcomes for each scenario, ranging from moderate to severely adverse market impacts. In addition, these stress tests are constructed using both historical events and forward-looking hypothetical scenarios.

Unlike VaR measures, which have an implied probability because they are calculated at a specified confidence level, there may not be an implied probability that our stress testing scenarios will occur. Instead, stress testing is used to model both moderate and more extreme moves in underlying market factors. When estimating potential loss, we generally assume that our positions cannot be reduced or hedged (although experience demonstrates that we are generally able to do so).

Limits

We use market risk limits at various levels to manage the size of our market exposures. These limits are set based on VaR, EaR and on a range of stress tests relevant to our exposures. See "Overview and Structure of Risk Management" for information about the limit approval process.

Limits are monitored by Treasury and Risk. Risk is responsible for identifying and escalating to senior management and/or the appropriate risk committee, on a timely basis, instances where limits have been exceeded (e.g., due to positional changes or changes in market conditions, such as increased volatilities or changes in correlations). Such instances are remediated by a reduction in the positions we hold and/or a temporary or permanent increase to the limit, if warranted.

Metrics

We analyze VaR at the firmwide level and a variety of more detailed levels, including by risk category, business and region. Diversification effect in the tables below represents the difference between total VaR and the sum of the VaRs for the four risk categories. This effect arises because the four market risk categories are not perfectly correlated.

During the first quarter of 2023, we added the currency exposure on certain debt and equity positions to VaR and removed certain debt and equity positions (and related hedges) from VaR as our management believes that the risk of these positions is more appropriately measured and monitored using 10% sensitivity measures. Prior period amounts for average daily VaR, period end VaR and high and low VaR have been conformed to the current presentation. The impact of such changes to prior period total VaR was not material. Substantially all positions in VaR are included within Global Banking & Markets.

The table below presents our average daily VaR.

	Year Ended December	
$ in millions	**2023**	2022
Categories		
Interest rates	**$ 96**	$ 96
Equity prices	**29**	35
Currency rates	**24**	32
Commodity prices	**19**	47
Diversification effect	**(69)**	(97)
Total	**$ 99**	$ 113

Our average daily VaR decreased to $99 million in 2023 from $113 million in 2022, due to lower levels of volatility, partially offset by increased exposures. The total decrease was driven by decreases in the commodity prices, currency rates and equity prices categories, partially offset by a decrease in the diversification effect.

The table below presents our period-end VaR.

	As of December	
$ in millions	**2023**	2022
Categories		
Interest rates	**$ 93**	$ 104
Equity prices	**25**	28
Currency rates	**15**	36
Commodity prices	**14**	18
Diversification effect	**(54)**	(84)
Total	**$ 93**	$ 102

Our period-end VaR decreased to $93 million as of December 2023 from $102 million as of December 2022, due to lower levels of volatility, partially offset by increased exposures. The total decrease was driven by decreases in the currency rates, interest rates, commodity prices and equity prices categories, partially offset by a decrease in the diversification effect.

During 2023, the firmwide VaR risk limit was not exceeded and there were no permanent changes to the firmwide VaR risk limit. However, the firmwide VaR risk limit was temporarily changed on four occasions as a result of changes in the market environment in the first half of 2023. During 2022, the firmwide VaR risk limit was exceeded on six occasions, primarily due to higher levels of volatility generally resulting from broad macroeconomic and geopolitical concerns. These limit breaches were resolved by temporary increases in the firmwide VaR risk limit and subsequent risk reductions. During this period, the firmwide VaR risk limit was also permanently increased due to higher levels of volatility.

The table below presents our high and low VaR.

	Year Ended December			
	2023		2022	
$ in millions	**High**	**Low**	High	Low
Categories				
Interest rates	**$ 148**	**$ 70**	$ 137	$ 56
Equity prices	**$ 49**	**$ 22**	$ 59	$ 24
Currency rates	**$ 47**	**$ 9**	$ 54	$ 18
Commodity prices	**$ 32**	**$ 11**	$ 82	$ 18
Firmwide				
VaR	**$ 142**	**$ 79**	$ 155	$ 75

The chart below presents our daily VaR for 2023.

VaR Chart.jpg

The table below presents, by number of business days, the frequency distribution of our daily net revenues for positions included in VaR.

	Year Ended December	
$ in millions	**2023**	2022
>$100	**52**	85
$75 – $100	**40**	36
$50 – $75	**52**	27
$25 – $50	**47**	32
$0 – $25	**22**	34
$(25) – $0	**30**	18
$(50) – $(25)	**4**	12
$(75) – $(50)	**2**	2
$(100) – $(75)	**–**	2
<$(100)	**1**	3
Total	**250**	251

In the table above, the frequency distribution of daily net revenues reflects the impact of the change in VaR described above. Prior period amounts have been conformed to the current presentation.

Daily net revenues for positions included in VaR are compared with VaR calculated as of the end of the prior business day. Net losses incurred on a single day for such positions exceeded our 95% one-day VaR (i.e., a VaR exception) on one occasion during 2023 and on two occasions during 2022.

During periods in which we have significantly more positive net revenue days than net revenue loss days, we expect to have fewer VaR exceptions because, under normal conditions, our business model generally produces positive net revenues. In periods in which our franchise revenues are adversely affected, we generally have more loss days, resulting in more VaR exceptions. The daily net revenues for positions included in VaR used to determine VaR exceptions reflect the impact of any intraday activity, including bid/offer net revenues, which are more likely than not to be positive by their nature.

Sensitivity Measures

Certain portfolios and individual positions are not included in VaR because VaR is not the most appropriate risk measure. Other sensitivity measures we use to analyze market risk are described below.

10% Sensitivity Measures. The table below presents our market risk by asset category for positions accounted for at fair value or accounted for at the lower of cost or fair value, that are not included in VaR.

	As of December	
$ in millions	**2023**	2022
Equity	**$ 1,562**	$ 1,593
Debt	**2,446**	2,577
Total	**$ 4,008**	$ 4,170

In the table above:

- The 10% sensitivity measures for equity and debt positions reflect the impact of the change in VaR described above. Prior period amounts have been conformed to the current presentation.
- The market risk of these positions is determined by estimating the potential reduction in net revenues of a 10% decline in the value of the underlying positions.
- Equity positions relate to private and public equity securities, which primarily include investments in corporate, real estate and infrastructure assets. Substantially all such equity positions are included within Asset & Wealth Management.
- Debt positions include mezzanine and senior debt, and corporate and real estate loans, substantially all of which are included within Asset & Wealth Management. As of December 2023, debt positions also included approximately $3.0 billion of GreenSky loans and approximately $2.0 billion of GM co-branded credit card loans within Platform Solutions that were classified as held for sale.
- Funded equity and debt positions are included in our consolidated balance sheets in investments and loans, and the related hedges are included in our consolidated balance sheets in derivatives. See Note 8 to the consolidated financial statements for further information about investments, Note 9 to the consolidated financial statements for further information about loans and Note 7 to the consolidated financial statements for further information about derivatives.
- These measures do not reflect the diversification effect across asset categories or across other market risk measures.

Credit and Funding Spread Sensitivity on Derivatives and Financial Liabilities. VaR excludes the impact of changes in counterparty credit spreads, our own credit spreads and unsecured funding spreads on derivatives, as well as changes in our own credit spreads (debt valuation adjustment) on financial liabilities for which the fair value option was elected. The estimated sensitivity to a one basis point increase in credit spreads (counterparty and our own) and unsecured funding spreads on derivatives (including hedges) was a loss of $2 million as of December 2023 and $1 million as of December 2022. In addition, the estimated sensitivity to a one basis point increase in our own credit spreads on financial liabilities for which the fair value option was elected was a gain of $42 million as of December 2023 and $37 million as of December 2022. However, the actual net impact of a change in our own credit spreads is also affected by the liquidity, duration and convexity (as the sensitivity is not linear to changes in yields) of those financial liabilities for which the fair value option was elected, as well as the relative performance of any hedges undertaken.

Earnings-at-Risk. The table below presents the impact of a parallel shift in rates on our net revenues and preferred stock dividends over the next 12 months relative to the baseline scenario.

	As of December	
$ in millions	**2023**	2022
+100 basis points parallel shift in rates	**$ 225**	$ 104
-100 basis points parallel shift in rates	**$ (232)**	$ (104)
+200 basis points parallel shift in rates	**$ 445**	$ 205
-200 basis points parallel shift in rates	**$ (475)**	$ (205)

In the table above, the EaR metric utilized various assumptions, including, among other things, balance sheet size and composition, prepayment behavior and deposit repricing, all of which have inherent uncertainties. The EaR metric does not represent a forecast of our net revenues and preferred stock dividends. We expect our EaR to be more sensitive to short-term interest rates than long-term rates.

Other Market Risk Considerations

We make investments in securities that are accounted for as available-for-sale, held-to-maturity or under the equity method which are included in investments in the consolidated balance sheets. See Note 8 to the consolidated financial statements for further information.

Direct investments in real estate are accounted for at cost less accumulated depreciation. See Note 12 to the consolidated financial statements for further information about other assets.

Financial Statement Linkages to Market Risk Measures

We employ a variety of risk measures, each described in the respective sections above, to monitor market risk across the consolidated balance sheets and consolidated statements of earnings. The related gains and losses on these positions are included in market making, other principal transactions, interest income and interest expense in the consolidated statements of earnings, and debt valuation adjustment and unrealized gains/(losses) on available-for-sale securities in the consolidated statements of comprehensive income.

The table below presents certain assets and liabilities accounted for at fair value or accounted for at the lower of cost or fair value in our consolidated balance sheets and the market risk measures used to assess those assets and liabilities.

Assets or Liabilities	Market Risk Measures
Collateralized agreements and financings	VaR
Customer and other receivables	10% Sensitivity Measures
Trading assets and liabilities	VaR Credit Spread Sensitivity 10% Sensitivity Measures
Investments	VaR 10% Sensitivity Measures
Loans	VaR 10% Sensitivity Measures
Other assets and liabilities	VaR
Deposits	VaR Credit Spread Sensitivity
Unsecured borrowings	VaR Credit Spread Sensitivity

In addition to the above, we measure the interest rate risk for all positions within our consolidated balance sheets using the EaR metric.

Credit Risk Management

Overview

Credit risk represents the potential for loss due to the default or deterioration in credit quality of a counterparty (e.g., an OTC derivatives counterparty or a borrower) or an issuer of securities or other instruments we hold. Our exposure to credit risk comes mostly from client transactions in OTC derivatives and loans and lending commitments. Credit risk also comes from cash placed with banks, securities financing transactions (i.e., resale and repurchase agreements and securities borrowing and lending activities) and customer and other receivables.

Credit Risk, which is independent of our revenue-producing units and reports to our chief risk officer, has primary responsibility for assessing, monitoring and managing our credit risk through firmwide oversight across our global businesses. In addition, we hold other positions that give rise to credit risk (e.g., bonds and secondary bank loans). These credit risks are captured as a component of market risk measures, which are monitored and managed by Market Risk. We also enter into derivatives to manage market risk exposures. Such derivatives also give rise to credit risk, which is monitored and managed by Credit Risk.

Credit Risk Management Process

Our process for managing credit risk includes the critical components of our risk management framework described in the "Overview and Structure of Risk Management," as well as the following:

- Monitoring compliance with established credit risk limits and reporting our credit exposures and credit concentrations;
- Establishing or approving underwriting standards;
- Assessing the likelihood that a counterparty will default on its payment obligations;
- Measuring our current and potential credit exposure and losses resulting from a counterparty default;
- Using credit risk mitigants, including collateral and hedging; and
- Maximizing recovery through active workout and restructuring of claims.

We also perform credit analyses, which incorporate initial and ongoing evaluations of the capacity and willingness of a counterparty to meet its financial obligations. For substantially all of our credit exposures, the core of our process is an annual counterparty credit evaluation or more frequently if deemed necessary as a result of events or changes in circumstances. We determine an internal credit rating for the counterparty by considering the results of the credit evaluations and assumptions with respect to the nature of and outlook for the counterparty's industry and the economic environment. Beginning in the first quarter of 2023, we also take into consideration collateral received or other credit support arrangements when determining an internal credit rating for collateralized loans, as management believes that this methodology better reflects the credit quality of the underlying loans and lending commitments. Prior period amounts have been conformed to reflect the current methodology. Senior personnel, with expertise in specific industries, inspect and approve credit reviews and internal credit ratings.

Our risk assessment process may also include, where applicable, reviewing certain key metrics, including, but not limited to, delinquency status, collateral value, FICO credit scores and other risk factors.

Our credit risk management systems capture credit exposure to individual counterparties and on an aggregate basis to counterparties and their subsidiaries. These systems also provide management with comprehensive information about our aggregate credit risk by product, internal credit rating, industry, country and region.

Risk Measures

We measure our credit risk based on the potential loss in the event of non-payment by a counterparty using current and potential exposure. For derivatives and securities financing transactions, current exposure represents the amount presently owed to us after taking into account applicable netting and collateral arrangements, while potential exposure represents our estimate of the future exposure that could arise over the life of a transaction based on market movements within a specified confidence level. Potential exposure also takes into account netting and collateral arrangements. For loans and lending commitments, the primary measure is a function of the notional amount of the position.

Stress Tests

We conduct regular stress tests to calculate the credit exposures, including potential concentrations that would result from applying shocks to counterparty credit ratings or credit risk factors (e.g., currency rates, interest rates, equity prices). These shocks cover a wide range of moderate and more extreme market movements, including shocks to multiple risk factors, consistent with the occurrence of a severe market or economic event. In the case of sovereign default, we estimate the direct impact of the default on our sovereign credit exposures, changes to our credit exposures arising from potential market moves in response to the default, and the impact of credit market deterioration on corporate borrowers and counterparties that may result from the sovereign default. Unlike potential exposure, which is calculated within a specified confidence level, stress testing does not generally assume a probability of these events occurring. We also perform firmwide stress tests. See "Overview and Structure of Risk Management" for information about firmwide stress tests.

To supplement these regular stress tests, as described above, we also conduct tailored stress tests on an ad hoc basis in response to specific market events that we deem significant. We also utilize these stress tests to estimate the indirect impact of certain hypothetical events on our country exposures, such as the impact of credit market deterioration on corporate borrowers and counterparties along with the shocks to the risk factors described above. The parameters of these shocks vary based on the scenario reflected in each stress test. We review estimated losses produced by the stress tests in order to understand their magnitude, highlight potential loss concentrations, and assess and seek to mitigate our exposures, where necessary.

Limits

We use credit risk limits at various levels, as well as underwriting standards to manage the size and nature of our credit exposures. Limits for industries and countries are based on our risk appetite and are designed to allow for regular monitoring, review, escalation and management of credit risk concentrations. See "Overview and Structure of Risk Management" for information about the limit approval process.

Credit Risk is responsible for monitoring these limits, and identifying and escalating to senior management and/or the appropriate risk committee, on a timely basis, instances where limits have been exceeded.

Risk Mitigants

To reduce our credit exposures on derivatives and securities financing transactions, we may enter into netting agreements with counterparties that permit us to offset receivables and payables with such counterparties. We may also reduce credit risk with counterparties by entering into agreements that enable us to obtain collateral from them on an upfront or contingent basis and/or to terminate transactions if the counterparty's credit rating falls below a specified level. We monitor the fair value of the collateral to ensure that our credit exposures are appropriately collateralized. We seek to minimize exposures where there is a significant positive correlation between the creditworthiness of our counterparties and the market value of collateral we receive.

For loans and lending commitments, depending on the credit quality of the borrower and other characteristics of the transaction, we employ a variety of potential risk mitigants. Risk mitigants include collateral provisions, guarantees, covenants, structural seniority of the bank loan claims and, for certain lending commitments, provisions in the legal documentation that allow us to adjust loan amounts, pricing, structure and other terms as market conditions change. The type and structure of risk mitigants employed can significantly influence the degree of credit risk involved in a loan or lending commitment.

When we do not have sufficient visibility into a counterparty's financial strength or when we believe a counterparty requires support from its parent, we may obtain third-party guarantees of the counterparty's obligations. We may also seek to mitigate our credit risk using credit derivatives or participation agreements.

Credit Exposures

As of December 2023, our aggregate credit exposure increased slightly compared with December 2022, primarily reflecting increases in loans and lending commitments and securities financing transactions, partially offset by a decrease in OTC derivatives. The percentage of our credit exposures arising from non-investment-grade counterparties (based on our internally determined public rating agency equivalents) decreased compared with December 2022, primarily reflecting decreases in non-investment-grade credit exposure related to loans and lending commitments and receivables from clearing organizations. Our credit exposures are described further below.

Cash and Cash Equivalents. Our credit exposure on cash and cash equivalents arises from our unrestricted cash, and includes both interest-bearing and non-interest-bearing deposits. We seek to mitigate the risk of credit loss, by placing substantially all of our deposits with highly rated banks and central banks.

The table below presents our credit exposure from unrestricted cash and cash equivalents, and the concentration by industry, region and internally determined public rating agency equivalents.

	As of December	
$ in millions	**2023**	2022
Cash and Cash Equivalents	**$224,493**	$224,889
Industry		
Financial Institutions	**9 %**	6 %
Sovereign	**91 %**	94 %
Total	**100 %**	100 %
Region		
Americas	**50 %**	77 %
EMEA	**34 %**	19 %
Asia	**16 %**	4 %
Total	**100 %**	100 %
Credit Quality (Credit Rating Equivalent)		
AAA	**65 %**	89 %
AA	**15 %**	5 %
A	**20 %**	6 %
Total	**100 %**	100 %

The table above excludes cash segregated for regulatory and other purposes of $17.08 billion as of December 2023 and $16.94 billion as of December 2022.

OTC Derivatives. Our credit exposure on OTC derivatives arises primarily from our market-making activities. As a market maker, we enter into derivative transactions to provide liquidity to clients and to facilitate the transfer and hedging of their risks. We also enter into derivatives to manage market risk exposures. We manage our credit exposure on OTC derivatives using the credit risk

We generally enter into OTC derivatives transactions under bilateral collateral arrangements that require the daily exchange of collateral. As credit risk is an essential component of fair value, we include a credit valuation adjustment (CVA) in the fair value of derivatives to reflect counterparty credit risk, as described in Note 7 to the consolidated financial statements. CVA is a function of the present value of expected exposure, the probability of counterparty default and the assumed recovery upon default.

The table below presents our net credit exposure from OTC derivatives and the concentration by industry and region.

	As of December	
$ in millions	**2023**	2022
OTC derivative assets	**$42,950**	$53,399
Collateral (not netted under U.S. GAAP)	**(14,420)**	(15,823)
Net credit exposure	**$28,530**	$37,576
Industry		
Consumer & Retail	**3 %**	3 %
Diversified Industrials	**11 %**	8 %
Financial Institutions	**21 %**	20 %
Funds	**20 %**	19 %
Healthcare	**2 %**	1 %
Municipalities & Nonprofit	**4 %**	2 %
Natural Resources & Utilities	**17 %**	34 %
Sovereign	**14 %**	7 %
Technology, Media & Telecommunications	**6 %**	4 %
Other (including Special Purpose Vehicles)	**2 %**	2 %
Total	**100 %**	100 %
Region		
Americas	**48 %**	49 %
EMEA	**45 %**	43 %
Asia	**7 %**	8 %
Total	**100 %**	100 %

Our credit exposure (before any potential recoveries) to OTC derivative counterparties that defaulted during 2023 remained low, representing less than 2% of our total credit exposure from OTC derivatives.

In the table above:

- OTC derivative assets, included in the consolidated balance sheets, are reported on a net-by-counterparty basis (i.e., the net receivable for a given counterparty) when a legal right of setoff exists under an enforceable netting agreement (counterparty netting) and are accounted for at fair value, net of cash collateral received under enforceable credit support agreements (cash collateral netting).
- Collateral represents cash collateral and the fair value of securities collateral, primarily U.S. and non-U.S.

The table below presents the distribution of our net credit exposure from OTC derivatives by tenor.

$ in millions	Investment-Grade	Non-Investment-Grade / Unrated	Total
As of December 2023			
Less than 1 year	**$ 19,314**	**$ 7,700**	**$ 27,014**
1 – 5 years	**19,673**	**6,331**	**26,004**
Greater than 5 years	**51,944**	**3,999**	**55,943**
Total	**90,931**	**18,030**	**108,961**
Netting	**(72,412)**	**(8,019)**	**(80,431)**
Net credit exposure	**$ 18,519**	**$ 10,011**	**$ 28,530**
As of December 2022			
Less than 1 year	$ 23,112	$ 8,812	$ 31,924
1 – 5 years	26,627	8,355	34,982
Greater than 5 years	58,354	4,342	62,696
Total	108,093	21,509	129,602
Netting	(83,531)	(8,495)	(92,026)
Net credit exposure	$ 24,562	$ 13,014	$ 37,576

In the table above:

- Tenor is based on remaining contractual maturity.
- Netting includes counterparty netting across tenor categories and collateral that we consider when determining credit risk (including collateral that is not eligible for netting under U.S. GAAP). Counterparty netting within the same tenor category is included within such tenor category.

The tables below present the distribution of our net credit exposure from OTC derivatives by tenor and internally determined public rating agency equivalents.

	Investment-Grade				
$ in millions	AAA	AA	A	BBB	Total
As of December 2023					
Less than 1 year	**$ 583**	**$ 4,383**	**$ 7,718**	**$ 6,630**	**$ 19,314**
1 – 5 years	**1,226**	**4,850**	**6,755**	**6,842**	**19,673**
Greater than 5 years	**5,963**	**13,417**	**15,507**	**17,057**	**51,944**
Total	**7,772**	**22,650**	**29,980**	**30,529**	**90,931**
Netting	**(5,308)**	**(18,364)**	**(25,470)**	**(23,270)**	**(72,412)**

Lending Activities. We manage our lending activities using the credit risk process, measures, limits and risk mitigants described above. Other lending positions, including secondary trading positions, are risk-managed as a component of market risk. As described above, beginning in the first quarter of 2023, we take into consideration collateral received or other credit support arrangements when determining an internal credit rating for collateralized loans. Prior period amounts have been conformed to reflect the current methodology. The impact to December 2022 was to increase loans and lending commitments classified as investment-grade and decrease loans and lending commitments classified as non-investment-grade by $29.6 billion (loans of $25.0 billion and lending commitments of $4.6 billion). The impact of this change was in real estate (warehouse loans) and other collateralized loans and lending commitments.

The table below presents our loans and lending commitments.

$ in millions	Loans	Lending Commitments	Total
As of December 2023			
Corporate	**$ 35,874**	**$ 144,463**	**$ 180,337**
Commercial real estate	**26,028**	**3,440**	**29,468**
Residential real estate	**25,388**	**1,471**	**26,859**
Securities-based	**14,621**	**691**	**15,312**
Other collateralized	**62,225**	**23,731**	**85,956**
Consumer:			
Installment	**3,298**	**2,250**	**5,548**
Credit cards	**19,361**	**70,824**	**90,185**
Other	**1,613**	**888**	**2,501**
Total	**$ 188,408**	**$ 247,758**	**$ 436,166**
Allowance for loan losses	**$ (5,050)**	**$ (620)**	**$ (5,670)**
As of December 2022			
Corporate	$ 40,135	$ 139,718	$ 179,853
Commercial real estate	28,879	4,271	33,150
Residential real estate	23,035	3,192	26,227
Securities-based	16,671	508	17,179
Other collateralized	51,702	14,407	66,109
Consumer:			

Corporate. Corporate loans and lending commitments include term loans, revolving lines of credit, letter of credit facilities and bridge loans, and are principally used for operating and general corporate purposes, or in connection with acquisitions. Corporate loans are secured (typically by a senior lien on the assets of the borrower) or unsecured, depending on the loan purpose, the risk profile of the borrower and other factors.

The table below presents our credit exposure from corporate loans and lending commitments, and the concentration by industry, region, internally determined public rating agency equivalents and other credit metrics.

$ in millions	Loans	Lending Commitments	Total
As of December 2023			
Corporate	**$35,874**	**$144,463**	**$180,337**
Industry			
Consumer & Retail	**11 %**	**13 %**	**12 %**
Diversified Industrials	**17 %**	**20 %**	**20 %**
Financial Institutions	**8 %**	**9 %**	**9 %**
Funds	**4 %**	**3 %**	**3 %**
Healthcare	**9 %**	**11 %**	**10 %**
Natural Resources & Utilities	**8 %**	**18 %**	**16 %**
Real Estate	**13 %**	**5 %**	**7 %**
Technology, Media & Telecommunications	**25 %**	**20 %**	**21 %**
Other (including Special Purpose Vehicles)	**5 %**	**1 %**	**2 %**
Total	**100 %**	**100 %**	**100 %**
Region			
Americas	**63 %**	**77 %**	**74 %**
EMEA	**29 %**	**22 %**	**23 %**
Asia	**8 %**	**1 %**	**3 %**
Total	**100 %**	**100 %**	**100 %**
Credit Quality (Credit Rating Equivalent)			
AAA	**–**	**1 %**	**1 %**
AA	**1 %**	**5 %**	**4 %**
A	**5 %**	**20 %**	**17 %**
BBB	**20 %**	**41 %**	**37 %**
BB or lower	**74 %**	**33 %**	**41 %**
Total	**100 %**	**100 %**	**100 %**
As of December 2022			
Corporate	$40,135	$139,718	$179,853

Commercial Real Estate. Commercial real estate includes originated loans and lending commitments that are directly or indirectly secured by hotels, retail stores, multifamily housing complexes and commercial and industrial properties. Commercial real estate also includes loans and lending commitments extended to clients who warehouse assets that are directly or indirectly backed by commercial real estate. In addition, commercial real estate includes loans purchased by us.

The table below presents our credit exposure from commercial real estate loans and lending commitments, and the concentration by region, internally determined public rating agency equivalents and other credit metrics.

$ in millions	Loans	Lending Commitments	Total
As of December 2023			
Commercial Real Estate	**$26,028**	**$3,440**	**$29,468**
Region			
Americas	**80 %**	**74 %**	**79 %**
EMEA	**17 %**	**25 %**	**18 %**
Asia	**3 %**	**1 %**	**3 %**
Total	**100 %**	**100 %**	**100 %**
Credit Quality (Credit Rating Equivalent)			
Investment-grade	**47 %**	**46 %**	**47 %**
Non-investment-grade	**52 %**	**54 %**	**52 %**
Unrated	**1 %**	**–**	**1 %**
Total	**100 %**	**100 %**	**100 %**
As of December 2022			
Commercial Real Estate	$28,879	$4,271	$33,150
Region			
Americas	79 %	74 %	78 %
EMEA	16 %	17 %	16 %
Asia	5 %	9 %	6 %
Total	100 %	100 %	100 %
Credit Quality (Credit Rating Equivalent)			
Investment-grade	42 %	35 %	41 %
Non-investment-grade	58 %	64 %	59 %
Unrated	–	1 %	–

Residential Real Estate. Residential real estate loans and lending commitments are primarily extended to wealth management clients and to clients who warehouse assets that are directly or indirectly secured by residential real estate. In addition, residential real estate includes loans purchased by us.

Beginning in the fourth quarter of 2023, we began to assess the credit quality of all U.S. residential mortgage loans extended to wealth management clients using FICO credit scores, loan-to-value ratios and delinquency, instead of an internal credit rating, as we believe that these metrics better reflect the credit quality of such loans. In the table below, prior period amounts have been conformed to reflect the current methodology. The impact to residential real estate loans as of December 2022 was a decrease in loans and lending commitments classified as investment-grade of $2.5 billion (loans of $2.5 billion and lending commitments of $7 million), a decrease in loans and lending commitments classified as non-investment-grade of $2.9 billion (loans of $2.7 billion and lending commitments of $208 million) and an increase in other metrics of $5.4 billion (loans of $5.2 billion and lending commitments of $215 million).

The table below presents our credit exposure from residential real estate loans and lending commitments, and the concentration by region, internally determined public rating agency equivalents and other credit metrics.

$ in millions	Loans	Lending Commitments	Total
As of December 2023			
Residential Real Estate	**$25,388**	**$1,471**	**$26,859**
Region			
Americas	**95 %**	**93 %**	**95 %**
EMEA	**4 %**	**7 %**	**4 %**
Asia	**1 %**	**–**	**1 %**
Total	**100 %**	**100 %**	**100 %**
Credit Quality (Credit Rating Equivalent)			
Investment-grade	**42 %**	**56 %**	**43 %**
Non-investment-grade	**13 %**	**25 %**	**13 %**
Other metrics	**45 %**	**16 %**	**43 %**
Unrated	**–**	**3 %**	**1 %**
Total	**100 %**	**100 %**	**100 %**
As of December 2022			
Residential Real Estate	$23,035	$3,192	$26,227
Region			
Americas	96 %	93 %	95 %
EMEA	3 %	7 %	4 %

In the table above:

- Credit exposure included loans and lending commitments of $14.45 billion as of December 2023 and $14.62 billion as of December 2022 which are extended to clients who warehouse assets that are directly or indirectly secured by residential real estate.
- Substantially all residential real estate loans included in the other metrics category consists of loans extended to wealth management clients. As of both December 2023 and December 2022, substantially all of such loans had a loan-to-value ratio of less than 80% and were performing in accordance with the contractual terms. Additionally, as of both December 2023 and December 2022, the vast majority of such loans had a FICO credit score of greater than 740.

In addition, we also have credit exposure to residential real estate loans held for securitization of $7.65 billion as of December 2023 and $8.07 billion as of December 2022. Such loans are included in trading assets in our consolidated balance sheets.

Securities-Based. Securities-based includes loans and lending commitments that are secured by stocks, bonds, mutual funds, and exchange-traded funds. These loans and commitments are primarily extended to our wealth management clients and used for purposes other than purchasing, carrying or trading margin stocks. Securities-based loans require borrowers to post additional collateral based on changes in the underlying collateral's fair value.

The table below presents our credit exposure from securities-based loans and lending commitments, and the concentration by region, internally determined public rating agency equivalents and other credit metrics.

$ in millions	Loans	Lending Commitments	Total
As of December 2023			
Securities-based	**$14,621**	**$691**	**$15,312**
Region			
Americas	**79 %**	**98 %**	**80 %**
EMEA	**20 %**	**2 %**	**19 %**
Asia	**1 %**	**–**	**1 %**
Total	**100 %**	**100 %**	**100 %**
Credit Quality (Credit Rating Equivalent)			
Investment-grade	**75 %**	**25 %**	**73 %**
Non-investment-grade	**4 %**	**2 %**	**4 %**
Other metrics	**21 %**	**73 %**	**23 %**
Total	**100 %**	**100 %**	**100 %**
As of December 2022			
Securities-based	$16,671	$508	$17,179
Region			
Americas	83 %	98 %	83 %
EMEA	15 %	2 %	15 %
Asia	2 %	–	2 %
Total	100 %	100 %	100 %
Credit Quality (Credit Rating Equivalent)			
Investment-grade	77 %	18 %	76 %
Non-investment-grade	5 %	2 %	4 %
Other metrics	18 %	80 %	20 %
Total	100 %	100 %	100 %

In the table above, substantially all securities-based loans included in the other metrics category had a loan-to-value ratio of less than 80% and were performing in accordance with the contractual terms as of both December 2023 and December 2022.

Other Collateralized. Other collateralized includes loans and lending commitments that are backed by specific collateral (other than securities and real estate). Such loans and lending commitments are extended to clients who warehouse assets that are directly or indirectly secured by corporate loans, consumer loans and other assets. Other collateralized also includes loans and lending commitments to investment funds (managed by third parties) that are collateralized by capital commitments of the funds' investors or assets held by the fund, as well as other secured loans and lending commitments extended to our wealth management clients.

The table below presents our credit exposure from other collateralized loans and lending commitments, and the concentration by region, internally determined public rating agency equivalents and other credit metrics.

$ in millions	Loans	Lending Commitments	Total
As of December 2023			
Other Collateralized	**$62,225**	**$23,731**	**$85,956**
Region			
Americas	**89 %**	**94 %**	**90 %**
EMEA	**10 %**	**5 %**	**9 %**
Asia	**1 %**	**1 %**	**1 %**
Total	**100 %**	**100 %**	**100 %**
Credit Quality (Credit Rating Equivalent)			
Investment-grade	**78 %**	**80 %**	**79 %**
Non-investment-grade	**21 %**	**18 %**	**20 %**
Unrated	**1 %**	**2 %**	**1 %**
Total	**100 %**	**100 %**	**100 %**
As of December 2022			
Other Collateralized	$51,702	$14,407	$66,109
Region			
Americas	86 %	93 %	87 %
EMEA	12 %	7 %	11 %
Asia	2 %	–	2 %
Total	100 %	100 %	100 %
Credit Quality (Credit Rating Equivalent)			
Investment-grade	83 %	83 %	83 %
Non-investment-grade	16 %	14 %	16 %
Other metrics	1 %	–	–
Unrated	–	3 %	1 %

Installment and Credit Cards. We originate unsecured installment loans and credit card loans (pursuant to revolving lines of credit) to consumers in the Americas. The credit card lines are cancellable by us and therefore do not result in credit exposure.

The tables below present our credit exposure from originated installment and credit card funded loans, and the concentration by the five most concentrated U.S. states.

$ in millions	Installment	
As of December 2023		
Loans, gross	**$3,298**	
California	**8**	**%**
Texas	**8**	**%**
Florida	**7**	**%**
New York	**5**	**%**
New Jersey	**5**	**%**
Other	**67**	**%**
Total	**100**	**%**
As of December 2022		
Loans, gross	$6,326	
California	10	%
Texas	9	%
Florida	7	%
New York	6	%
Illinois	4	%
Other	64	%
Total	100	%

$ in millions	Credit Cards	
As of December 2023		
Loans, gross	**$19,361**	
California	**17**	**%**
Texas	**9**	**%**
Florida	**8**	**%**
New York	**8**	**%**
Illinois	**4**	**%**
Other	**54**	**%**
Total	**100**	**%**
As of December 2022		
Loans, gross	$15,820	
California	16	%
Texas	9	%
New York	8	%
Florida	8	%
Illinois	4	%

Other. Other includes unsecured loans extended to wealth management clients and unsecured consumer and credit card loans purchased by us.

The table below presents our credit exposure from other loans and lending commitments, and the concentration by region, internally determined public rating agency equivalents and other credit metrics.

$ in millions	Loans		Lending Commitments		Total	
As of December 2023						
Other	**$1,613**		**$888**		**$2,501**	
Region						
Americas	**97**	**%**	**100**	**%**	**98**	**%**
EMEA	**3**	**%**	**–**		**2**	**%**
Total	**100**	**%**	**100**	**%**	**100**	**%**
Credit Quality (Credit Rating Equivalent)						
Investment-grade	**61**	**%**	**87**	**%**	**70**	**%**
Non-investment-grade	**9**	**%**	**13**	**%**	**11**	**%**
Other metrics	**30**	**%**	**–**		**19**	**%**
Total	**100**	**%**	**100**	**%**	**100**	**%**
As of December 2022						
Other	$2,261		$944		$3,205	
Region						
Americas	89	%	99	%	92	%
EMEA	11	%	1	%	8	%
Total	100	%	100	%	100	%
Credit Quality (Credit Rating Equivalent)						
Investment-grade	47	%	93	%	60	%
Non-investment-grade	26	%	7	%	21	%
Other metrics	27	%	–		19	%
Total	100	%	100	%	100	%

In the table above, other metrics primarily includes consumer and credit card loans purchased by us. Our risk assessment process for such loans includes reviewing certain key metrics, such as expected cash flows, delinquency status and other risk factors.

In addition, we also have credit exposure to other loans held for securitization of $1.22 billion as of December 2023 and $1.76 billion as of December 2022. Such loans are included in trading assets in our consolidated balance sheets.

Credit Hedges. We seek to mitigate the credit risk associated with our lending activities by obtaining credit protection on certain loans and lending commitments through credit default swaps, both single-name and index-based contracts, and through the issuance of credit-linked notes.

Securities Financing Transactions. We enter into securities financing transactions in order to, among other things, facilitate client activities, invest excess cash, acquire securities to cover short positions and finance certain activities. We bear credit risk related to resale agreements and securities borrowed only to the extent that cash advanced or the value of securities pledged or delivered to the counterparty exceeds the value of the collateral received. We also have credit exposure on repurchase agreements and securities loaned to the extent that the value of securities pledged or delivered to the counterparty for these transactions exceeds the amount of cash or collateral received. Securities collateral for these transactions primarily includes U.S. and non-U.S. government and agency obligations.

The table below presents our credit exposure from securities financing transactions and the concentration by industry, region and internally determined public rating agency equivalents.

	As of December	
$ in millions	**2023**	2022
Securities Financing Transactions	**$40,201**	$34,762
Industry		
Financial Institutions	**30 %**	43 %
Funds	**33 %**	23 %
Municipalities & Nonprofit	**7 %**	5 %
Sovereign	**29 %**	28 %
Other (including Special Purpose Vehicles)	**1 %**	1 %
Total	**100 %**	100 %
Region		
Americas	**45 %**	47 %
EMEA	**38 %**	34 %
Asia	**17 %**	19 %
Total	**100 %**	100 %
Credit Quality (Credit Rating Equivalent)		
AAA	**14 %**	20 %
AA	**31 %**	31 %
A	**38 %**	31 %
BBB	**7 %**	8 %
BB or lower	**10 %**	10 %
Total	**100 %**	100 %

The table above reflects both netting agreements and collateral that we consider when determining credit risk.

Other Credit Exposures. We are exposed to credit risk from our receivables from brokers, dealers and clearing organizations and customers and counterparties. Receivables from brokers, dealers and clearing organizations primarily consist of initial margin placed with clearing organizations and receivables related to sales of securities which have traded, but not yet settled. These receivables generally have minimal credit risk due to the low probability of clearing organization default and the short-term nature of receivables related to securities settlements. Receivables from customers and counterparties generally consist of collateralized receivables related to customer securities transactions and generally have minimal credit risk due to both the value of the collateral received and the short-term nature of these receivables.

The table below presents our other credit exposures and the concentration by industry, region and internally determined public rating agency equivalents.

	As of December	
$ in millions	**2023**	2022
Other Credit Exposures	**$50,820**	$48,916
Industry		
Financial Institutions	**80 %**	80 %
Funds	**13 %**	12 %
Other (including Special Purpose Vehicles)	**7 %**	8 %
Total	**100 %**	100 %
Region		
Americas	**35 %**	41 %
EMEA	**54 %**	49 %
Asia	**11 %**	10 %
Total	**100 %**	100 %
Credit Quality (Credit Rating Equivalent)		
AAA	**2 %**	7 %
AA	**57 %**	32 %
A	**26 %**	33 %
BBB	**6 %**	10 %
BB or lower	**8 %**	16 %
Unrated	**1 %**	2 %
Total	**100 %**	100 %

The table above reflects collateral that we consider when determining credit risk.

Selected Exposures

We have credit and market exposures, as described below, that have had heightened focus given recent events and broad market concerns. Credit exposure represents the potential for loss due to the default or deterioration in credit quality of a counterparty or borrower. Market exposure represents the potential for loss in value of our long and short positions due to changes in market prices.

Country Exposures. The Russian invasion of Ukraine has negatively affected the global economy and increased macroeconomic uncertainty. We have significantly reduced our exposure to Russia and Ukraine and have substantially completed the wind down of our operations in Russia, which are now limited to those necessary to meet our remaining legal and regulatory obligations. The overall direct financial impact to our net revenues for 2023 from Russian and Ukrainian counterparties, borrowers, issuers and related instruments was not material. Our total credit exposure to Russian or Ukrainian counterparties or borrowers and our total market exposure relating to Russian or Ukrainian issuers was not material as of December 2023. See "Risk Factors" in Part I, Item 1A of this Form 10-K for further information about our risks related to Russia's invasion of Ukraine.

Economic challenges persist for the Argentine government given uncertainty relating to its fiscal and economic policies. As of December 2023, our total credit exposure to Argentina was not material. Our total market exposure to Argentina as of December 2023 was $157 million, primarily to sovereign issuers. Such exposure consisted of $55 million related to debt, $32 million related to credit derivatives and $70 million related to equities.

In addition, economic and/or political uncertainties in Ethiopia, Lebanon, Pakistan, Sri Lanka and Venezuela have led to concerns about their financial stability. Our credit exposure to counterparties or borrowers and our market exposure to issuers relating to each of these countries was not material as of December 2023.

We have a comprehensive framework to monitor, measure and assess our country exposures and to determine our risk appetite. We determine the country of risk by the location of the counterparty, issuer's assets, where they generate revenue, the country in which they are headquartered, the jurisdiction where a claim against them could be enforced, and/or the government whose policies affect their ability to repay their obligations. We monitor our credit exposure to a specific country both at the individual counterparty level, as well as at the aggregate country level. See "Stress Tests" for information about stress tests that are designed to estimate the direct and indirect impact of events involving the above countries.

Operational Risk Management

Overview

Operational risk is the risk of an adverse outcome resulting from inadequate or failed internal processes, people, systems or from external events. Our exposure to operational risk arises from routine processing errors, as well as extraordinary incidents, such as major systems failures or legal and regulatory matters.

Potential types of loss events related to internal and external operational risk include:

- Execution, delivery and process management;
- Business disruption and system failures;
- Employment practices and workplace safety;
- Clients, products and business practices;
- Damage to physical assets;
- Internal fraud; and
- External fraud.

Operational Risk, which is independent of our revenue-producing units and reports to our chief risk officer, has primary responsibility for developing and implementing a formalized framework for assessing, monitoring and managing operational risk with the goal of maintaining our exposure to operational risk at levels that are within our risk appetite.

Operational Risk Management Process

Our process for managing operational risk includes the critical components of our risk management framework described in the "Overview and Structure of Risk Management," including a comprehensive data collection process, as well as firmwide policies and procedures, for operational risk events.

We combine top-down and bottom-up approaches to manage and measure operational risk. From a top-down perspective, our senior management assesses firmwide and business-level operational risk profiles. From a bottom-up perspective, our first and second lines of defense are responsible for risk identification and risk management on a day-to-day basis, including escalating operational risks and risk events to senior management.

We seek to maintain a comprehensive control framework designed to provide a well-controlled environment to minimize operational risks. The Firmwide Operational Risk and Resilience Committee is responsible for overseeing operational risk and the operational resilience of our business.

Our operational risk management framework is designed to comply with the operational risk measurement rules under the Capital Framework and has evolved based on the changing needs of our businesses and regulatory guidance.

We have established policies that require all employees and consultants to report and escalate operational risk events. When operational risk events are identified, our policies require that the events be documented and analyzed to determine whether changes are required in our systems and/or processes to further mitigate the risk of future events.

We use operational risk management applications to capture, analyze, aggregate and report operational risk event data and key metrics. One of our key risk identification and control assessment tools is an operational risk and control self-assessment process, which is performed by our managers. This process consists of the identification and rating of operational risks, on a forward-looking basis, and the related controls. The results from this process are analyzed to evaluate operational risk exposures and identify businesses, activities or products with heightened levels of operational risk.

Risk Measurement

We measure our operational risk exposure using both statistical modeling and scenario analyses, which involve qualitative and quantitative assessments of internal and external operational risk event data and internal control factors for each of our businesses. Operational risk measurement also incorporates an assessment of business environment factors, including:

- Evaluations of the complexity of our business activities;
- The degree of automation in our processes;
- New activity information;
- The legal and regulatory environment; and
- Changes in the markets for our products and services, including the diversity and sophistication of our customers and counterparties.

The results from these scenario analyses are used to monitor changes in operational risk and to determine business lines that may have heightened exposure to operational risk. These analyses are used in the determination of the appropriate level of operational risk capital to hold. We also perform firmwide stress tests. See "Overview and Structure of Risk Management" for information about firmwide stress tests.

Types of Operational Risks

Increased reliance on technology and third-party relationships has resulted in increased operational risks, such as third-party risk, business resilience risk and cybersecurity risk. See "Cybersecurity Risk Management" for information about our cybersecurity risk management process. We manage third-party and business resilience risks as follows:

Third-Party Risk. Third-party risk, including vendor risk, is the risk of an adverse impact due to reliance on third parties performing services or activities on our behalf. These risks may include legal, regulatory, information security, cybersecurity, reputational, operational or other risks inherent in engaging a third party. We identify, manage and report key third-party risks and conduct due diligence across multiple risk domains, including information security and cybersecurity, resilience and additional supply chain dependencies. We evaluate whether vendors design, implement, and maintain information security controls consistent with our security policies and standards. Vendors that access and process our information on their infrastructure external to our network are required to undergo an initial risk assessment, resulting in the assignment of a vendor inherent risk rating that is determined based on a number of factors, including the type of data stored and processed by a particular vendor. Subsequently, we conduct re-certifications at a depth and frequency that is commensurate with each vendor's inherent risk rating as a component of our risk-based approach to vendor oversight. Vendors are required to agree to standard contractual provisions before receiving sensitive information from us. These provisions have specific information security control requirements, which apply to vendors that store, access, transmit or otherwise process sensitive information on our behalf. The Third-Party Risk Program monitors, reviews and reassesses third-party risks on an ongoing basis. See "Risk Factors" in Part I, Item 1A of this Form 10-K for further information about third-party risk.

Business Resilience Risk. Business resilience risk is the risk of disruption to our critical processes. We monitor threats and assess risks and seek to ensure our state of readiness in the event of a significant operational disruption to the normal operations of our critical functions or their dependencies, such as critical facilities, systems, third parties, data and/or personnel. Our resilience framework defines the fundamental principles for BCP and crisis management to ensure that critical functions can continue to operate in the event of a disruption. We seek to maintain a business continuity program that is comprehensive, consistent on a firmwide basis, and up-to-date, incorporating new information, including resilience capabilities. Our resilience assurance program encompasses testing of response and recovery strategies on a regular basis with the objective of minimizing and preventing significant operational disruptions. See "Business — Business Continuity and Information Security" in Part I, Item 1 of this Form 10-K for further information about business continuity.

Cybersecurity Risk Management

Overview

Cybersecurity risk is the risk of compromising the confidentiality, integrity or availability of our data and systems, leading to an adverse impact to us, our reputation, our clients and/or the broader financial system. We seek to minimize the occurrence and impact of unauthorized access, disruption or use of information and/or information systems. We deploy and operate preventive and detective controls and processes to mitigate emerging and evolving information security and cybersecurity threats, including monitoring our network for known vulnerabilities and signs of unauthorized attempts to access our data and systems. There is increased information risk through diversification of our data across external service providers, including use of a variety of cloud-provided or -hosted services and applications. In addition, new AI technologies may increase the frequency and severity of cybersecurity attacks. See "Risk Factors" in Part I, Item 1A of this Form 10-K for further information about information and cybersecurity risk.

Cybersecurity Risk Management Process

Our cybersecurity risk management processes are integrated into our overall risk management processes described in the "Overview and Structure of Risk Management." We have established an Information Security and Cybersecurity Program (the Cybersecurity Program), administered by Technology Risk within Engineering, and overseen by our CISO. This program is designed to identify, assess, document and mitigate threats, establish and evaluate compliance with information security mandates, adopt and apply our security control framework, and prevent, detect and respond to security incidents. The Cybersecurity Program is periodically reviewed and modified to respond to changing threats and conditions. A dedicated Operational Risk team, which reports to the chief risk officer, provides oversight and challenge of the Cybersecurity Program, independent of Technology Risk, and assesses the operating effectiveness of the program against industry standard frameworks and Board risk appetite-approved operational risk limits and thresholds.

Our process for managing cybersecurity risk includes the critical components of our risk management framework described in the "Overview and Structure of Risk Management," as well as the following:

- Training and education, to enable our people to recognize information and cybersecurity concerns and respond accordingly;
- Identity and access management, including entitlement management and production access;
- Application and software security, including software change management, open source software, and backup and restoration;
- Infrastructure security, including monitoring our network for known vulnerabilities and signs of unauthorized attempts to access our data and systems;
- Mobile security, including mobile applications;
- Data security, including cryptography and encryption, database security, data erasure and media disposal;
- Cloud computing, including governance and security of cloud applications, and software-as-a-service data onboarding;
- Technology operations, including change management, incident management, capacity and resilience; and
- Third-party risk management, including vendor management and governance, and cybersecurity and business resiliency on vendor assessments.

In conjunction with third-party vendors and consultants, we perform risk assessments to gauge the performance of the Cybersecurity Program, to estimate our risk profile and to assess compliance with relevant regulatory requirements. We perform periodic assessments of control efficacy through our internal risk and control self-assessment process, as well as a variety of external technical assessments, including external penetration tests and "red team" engagements where third parties test our defenses. The results of these risk assessments, together with control performance findings, are used to establish priorities, allocate resources, and identify and improve controls. We use third parties, such as outside forensics firms, to augment our cyber incident response capabilities. We have a vendor management program that documents a risk-based framework for managing third-party vendor relationships. Information security risk management is built into our vendor management process, which covers vendor selection, onboarding, performance monitoring and risk management. See "Third-Party Risk" for further information about vendor risk.

During 2023, we did not identify any cybersecurity threats that have materially affected or are reasonably likely to materially affect our business strategy, results of operations or financial condition. Technology Risk monitors cybersecurity threats and risks from information security and cybersecurity matters on an ongoing basis, and allocates resources and directs operations in a manner designed to mitigate those risks. For example, in response to the proliferation of ransomware attacks reported globally over the past year, we have emphasized phishing training for our employees and allocated additional resources for business continuity. However, despite these efforts, we cannot eliminate all cybersecurity risks or provide assurances that we have not had occurrences of undetected cybersecurity incidents.

Governance

The Board, both directly and through its committees, including its Risk and Audit Committees, oversees our risk management policies and practices, including cybersecurity risks, and information security and cybersecurity matters. Our chief risk officer, chief information officer and chief technology officer, among others, periodically brief the Board on operational and technology risks, including cybersecurity risks, that we face. The Board also receives regular briefings from our CISO on a range of cybersecurity-related topics, including the status of our Cybersecurity Program, emerging cybersecurity threats, mitigation strategies and related regulatory engagements. In addition, these are topics on which various directors maintain an ongoing dialogue with our CISO, chief information officer and chief technology officer.

Our CISO is responsible for managing and implementing the Cybersecurity Program and reports directly to our chief information officer. Our CISO oversees our Technology Risk team, which assesses and manages material risks from cybersecurity threats, sets firmwide control requirements, assesses adherence to controls, and oversees incident detection and response.

In addition, we have a series of committees that oversee the implementation of our cybersecurity risk management strategy and framework. These committees are informed about cybersecurity incidents and risks by designated members of Technology Risk and Operational Risk, who periodically report to these committees about the Cybersecurity Program, including the efforts of the Technology Risk and Operational Risk teams to prevent, detect, mitigate and remediate incidents and threats. These committees enable formal escalation and reporting of risks, and our CISO and other members of Technology Risk provide regular briefings to these committees.

The following are the primary committees and steering groups that oversee our Cybersecurity Program:

- The Firmwide Operational Risk and Resilience Committee. See "Overview and Structure of Risk Management" for further information about this committee.
- The Firmwide Technology Risk Committee reviews matters related to the design, development, deployment and use of technology. This committee oversees cybersecurity matters, as well as technology risk management frameworks and methodologies, and monitors their effectiveness. This committee is chaired by our chief technology officer and reports to the Firmwide Operational Risk and Resilience Committee.
- The Engineering Risk Steering Group oversees Engineering risk decisions, monitors control performance and reviews approaches to comply with current and emerging regulation applicable to Engineering. This committee is chaired by our CISO (who also serves on the Firmwide Technology Risk Committee) and reports to the Firmwide Technology Risk Committee.

Our CISO, senior management within Technology Risk and Operational Risk, as well as management personnel overseeing the Cybersecurity Program, all have substantial relevant expertise in the areas of information security and cybersecurity risk management.

Model Risk Management

Overview

Model risk is the potential for adverse consequences from decisions made based on model outputs that may be incorrect or used inappropriately. We rely on quantitative models across our business activities primarily to value certain financial assets and liabilities, to monitor and manage our risk, and to measure and monitor our regulatory capital.

Model Risk, which is independent of our revenue-producing units, model developers, model owners and model users, and reports to our chief risk officer, has primary responsibility for assessing, monitoring and managing our model risk through firmwide oversight across our global businesses, and provides periodic updates to senior management, risk committees and the Risk Committee of the Board.

Our model risk management framework is managed through a governance structure and risk management controls, which encompass standards designed to ensure we maintain a comprehensive model inventory, including risk assessment and classification, sound model development practices, independent review and model-specific usage controls. The Firmwide Model Risk Control Committee oversees our model risk management framework.

Model Review and Validation Process

Model Risk consists of quantitative professionals who perform an independent review, validation and approval of our models. This review includes an analysis of the model documentation, independent testing, an assessment of the appropriateness of the methodology used, and verification of compliance with model development and implementation standards.

We regularly refine and enhance our models to reflect changes in market or economic conditions and our business mix. All models are reviewed on an annual basis, and new models or significant changes to existing models and their assumptions are approved prior to implementation.

The model validation process incorporates a review of models and trade and risk parameters across a broad range of scenarios (including extreme conditions) in order to critically evaluate and verify:

- The model's conceptual soundness, including the reasonableness of model assumptions, and suitability for intended use;
- The testing strategy utilized by the model developers to ensure that the models function as intended;
- The suitability of the calculation techniques incorporated in the model;
- The model's accuracy in reflecting the characteristics of the related product and its significant risks;
- The model's consistency with models for similar products; and
- The model's sensitivity to input parameters and assumptions.

See "Critical Accounting Policies — Fair Value — Review of Valuation Models," "Liquidity Risk Management," "Market Risk Management," "Credit Risk Management" and "Operational Risk Management" for further information about our use of models within these areas.

Other Risk Management

In addition to the areas of risks discussed above, we also manage other risks, including capital, climate, compliance and conflicts. These areas of risks are discussed below.

Capital Risk Management

Capital risk is the risk that our capital is insufficient to support our business activities under normal and stressed market conditions or we face capital reductions or RWA increases, including from new or revised rules or changes in interpretations of existing rules, and are therefore unable to meet our internal capital targets or external regulatory capital requirements. Capital adequacy is of critical importance to us. Accordingly, we have in place a comprehensive capital management policy that provides a framework, defines objectives and establishes guidelines to maintain an appropriate level and composition of capital in both business-as-usual and stressed conditions. Our capital management framework is designed to provide us with the information needed to identify and comprehensively manage risk, and develop and apply projected stress scenarios that capture idiosyncratic vulnerabilities with a goal of holding sufficient capital to remain adequately capitalized even after experiencing a severe stress event. See "Capital Management and Regulatory Capital" for further information about our capital management process.

We have established a comprehensive governance structure to manage and oversee our day-to-day capital management activities and to ensure compliance with capital rules and related policies. Our capital management activities are overseen by the Board and its committees. The Board is responsible for approving our annual capital plan and the Risk Committee of the Board approves our capital management policy, which details the risk committees and members of senior management who are responsible for the ongoing monitoring of our capital adequacy and evaluation of current and future regulatory capital requirements, the review of the results of our capital planning and stress tests processes, and the results of our capital models. In addition, our risk committees and senior management are responsible for the review of our contingency capital plan, key capital adequacy metrics, including regulatory capital ratios, and capital plan metrics, such as the payout ratio, as well as monitoring capital targets and potential breaches of capital requirements.

Our process for managing capital risk includes independent review by Risk that assesses regulatory capital policies and related interpretations and escalates certain interpretations to senior management and/or the appropriate risk committee. This process also includes, among other things, independent review and validation of our regulatory capital calculations, analysis of the related documentation, independent testing and an assessment of the appropriateness of the calculations and their alignment with the relevant regulatory capital rules.

Climate-Related and Environmental Risk Management

We categorize climate-related and environmental risks into physical risk and transition risk. Physical risk is the risk that asset values may decline or operations may be disrupted as a result of changes in the climate, while transition risk is the risk that asset values may decline because of changes in climate policies or changes in the underlying economy due to decarbonization.

As a global financial institution, climate-related and environmental risks manifest in different ways across our businesses. We have continued to make significant enhancements to our climate risk management framework, including steps to further integrate climate risk into our broader risk management processes. We have integrated oversight of climate-related risks into our risk management governance structure, from senior management to our Board and its committees, including the Risk and Public Responsibilities Committees. The Risk Committee of the Board oversees firmwide financial and nonfinancial risks, which include climate risk, and, as part of its oversight, receives updates on our risk management approach to climate risk, including our approaches towards scenario analysis and integration into existing risk management processes. The Public Responsibilities Committee of the Board assists the Board in its oversight of our firmwide sustainability strategy and sustainability issues affecting us, including with respect to climate change. As part of its oversight, the Public Responsibilities Committee receives periodic updates on our sustainability strategy, and also periodically reviews our governance and related policies and processes for sustainability and climate change-related matters. Senior management within Risk, in coordination with senior management in both our revenue-producing units and our other independent risk oversight and control functions, is responsible for the development of the climate-related and environmental risk program. The objective of this program is to integrate climate-related and environmental risks into existing risk disciplines and business considerations, such as the integration of climate risk into our credit evaluation and underwriting processes for select industries.

See "Business — Sustainability" in Part I, Item 1 and "Risk Factors" in Part I, Item 1A of this Form 10-K for information about our sustainability initiatives, including in relation to climate transition.

Compliance Risk Management

Compliance risk is the risk of legal or regulatory sanctions, material financial loss or damage to our reputation arising from our failure to comply with the requirements of applicable laws, rules and regulations, and our internal policies and procedures. Compliance risk is inherent in all activities through which we conduct our businesses. Our Compliance Risk Management Program, administered by Compliance, assesses our compliance, regulatory and reputational risk; monitors for compliance with new or amended laws, rules and regulations; designs and implements controls, policies, procedures and training; conducts independent testing; investigates, surveils and monitors for compliance risks and breaches; and leads our responses to regulatory examinations, audits and inquiries. We monitor and review business practices to assess whether they meet or exceed minimum regulatory and legal standards in all markets and jurisdictions in which we conduct business.

Conflicts Management

Conflicts of interest and our approach to dealing with them are fundamental to our client relationships, our reputation and our long-term success. The term "conflict of interest" does not have a universally accepted meaning, and conflicts can arise in many forms within a business or between businesses. The responsibility for identifying potential conflicts, as well as complying with our policies and procedures, is shared by all of our employees.

We have a multilayered approach to resolving conflicts and addressing reputational risk. Our senior management oversees policies related to conflicts resolution and, in conjunction with Conflicts Resolution, Legal and Compliance, and internal committees, formulates policies, standards and principles, and assists in making judgments regarding the appropriate resolution of particular conflicts. Resolving potential conflicts necessarily depends on the facts and circumstances of a particular situation and the application of experienced and informed judgment.

As a general matter, Conflicts Resolution reviews financing and advisory assignments in Global Banking & Markets and certain of our investing, lending and other activities. In addition, we have various transaction oversight committees, such as the Firmwide Capital, Commitments and Suitability Committees and other committees that also review new underwritings, loans, investments and structured products. These groups and committees work with internal and external counsel and Compliance to evaluate and address any actual or potential conflicts. The head of Conflicts Resolution reports to our chief legal officer, who reports to our chief executive officer.

We regularly assess our policies and procedures that address conflicts of interest in an effort to conduct our business in accordance with the highest ethical standards and in compliance with all applicable laws, rules and regulations.

For further information about our risk management processes, see "Overview and Structure of Risk Management" and "Risk Factors" in Part I, Item 1A of this Form 10-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Quantitative and qualitative disclosures about market risk are set forth in "Management's Discussion and Analysis of Financial Condition and Results of Operations — Risk Management" in Part II, Item 7 of this Form 10-K.

Item 8. Financial Statements and Supplementary Data

Management's Report on Internal Control over Financial Reporting

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

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

Our internal control over financial reporting includes policies and procedures that pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of assets; provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles, and that receipts and expenditures are being made only in accordance with authorizations of management and the directors of the firm; and provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the firm's assets that could have a material effect on our financial statements.

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

Report of Independent Registered Public Accounting Firm

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

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of The Goldman Sachs Group, Inc. and its subsidiaries (the Company) as of December 31, 2023 and 2022, and the related consolidated statements of earnings, of comprehensive income, of changes in shareholders' equity and of cash flows for each of the three years in the period ended December 31, 2023, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2023, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023, based on criteria established in Internal Control – Integrated Framework (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Report of Independent Registered Public Accounting Firm

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Valuation of Certain Level 3 Financial Instruments

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

The principal considerations for our determination that performing procedures relating to the valuation of certain level 3 financial instruments is a critical audit matter are (i) the significant judgment by management when developing the fair value estimate of certain level 3 financial instruments, (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating audit evidence related to the aforementioned significant unobservable inputs used in the valuation of certain level 3 financial instruments, and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the valuation of financial instruments, including controls over the methods and significant unobservable inputs used in the valuation of certain level 3 financial instruments. These procedures also included, among others, testing the completeness and accuracy of data used by management, as well as (i) testing management's process for developing the fair value estimate of certain level 3 financial instruments, (ii) evaluating the appropriateness of the techniques used by management, (iii) evaluating the reasonableness of the aforementioned significant unobservable inputs, and either (iv) the use of professionals with specialized skill and knowledge to assist in evaluating (a) the appropriateness of the techniques used by management and (b) the aforementioned significant unobservable inputs, or (v) the use of professionals with specialized skill and knowledge to assist in evaluating the reasonableness of management's estimate by (a) evaluating the appropriateness of the techniques used by management and (b) developing an independent estimate of fair value for a sample of certain level 3 securities using independently determined assumptions, and comparing the independent range of prices to management's estimate.

Allowance for Loan Losses - Wholesale Loan Portfolio

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

The principal considerations for our determination that performing procedures relating to the allowance for loan losses for the wholesale loan portfolio is a critical audit matter are (i) the significant judgment by management when developing the allowance for loan losses for the wholesale loan portfolio using the modeled approach, (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating management's determination of internal credit ratings used in the modeled approach, and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the Company's allowance for loan losses for the wholesale loan portfolio, including controls over the determination of internal credit ratings. These procedures also included, among others, (i) testing management's process for developing the allowance for loan losses for the wholesale loan portfolio using a modeled approach, (ii) evaluating the appropriateness of the modeled approach, (iii) testing the completeness and accuracy of data used in the modeled approach, and (iv) evaluating the reasonableness of the internal credit ratings used by management. Professionals with specialized skill and knowledge were used to assist in evaluating (i) the appropriateness of the modeled approach and (ii) the reasonableness of the internal credit ratings.

/s/ PricewaterhouseCoopers LLP

New York, New York
February 22, 2024

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

Consolidated Statements of Earnings

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

Consolidated Statements of Comprehensive Income

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

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

Consolidated Balance Sheets

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

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

Consolidated Statements of Changes in Shareholders' Equity

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

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

Consolidated Statements of Cash Flows

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

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

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

Note 1.

Description of Business

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

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

Global Banking & Markets

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

Asset & Wealth Management

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

Platform Solutions

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

Note 2.

Basis of Presentation

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

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

Note 3.

Significant Accounting Policies

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

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

Consolidation

The firm consolidates entities in which the firm has a controlling financial interest. The firm determines whether it has a controlling financial interest in an entity by first evaluating whether the entity is a voting interest entity or a variable interest entity (VIE).

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

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

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

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

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

Use of Estimates

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

Revenue Recognition

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

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

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

Investment Banking

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

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

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

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

Investment Management

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

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

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

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

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

Commissions and Fees

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

Remaining Performance Obligations

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

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

Transfers of Financial Assets

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

Cash and Cash Equivalents

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

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

Customer and Other Receivables

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

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

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

Customer and Other Payables

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

Offsetting Assets and Liabilities

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

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

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

Foreign Currency Translation

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

Recent Accounting Developments

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

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

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

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

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

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

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

Note 4.

Fair Value Measurements

The fair value of a financial instrument is the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Financial assets are marked to bid prices and financial liabilities are marked to offer prices. Fair value measurements do not include transaction costs. The firm measures certain financial assets and liabilities as a portfolio (i.e., based on its net exposure to market and/or credit risks).

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

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

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

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

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

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

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

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

In the table above:

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

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

	As of December

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

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

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

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

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

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

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

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

Loans and Securities Backed by Commercial Real Estate

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

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

Loans and Securities Backed by Residential Real Estate

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

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

Corporate Debt Instruments

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

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

Equity Securities

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

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

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

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

Other Trading Cash Instruments, Investments and Loans

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

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

Valuation Techniques and Significant Inputs for Derivatives

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Note 5.

Fair Value Hierarchy

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

Trading Cash Instruments

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

$ in millions	Level 1	Level 2	Level 3	Total
As of December 2023				
Assets				
Government and agency obligations:				
U.S.	$ 85,190	$ 58,862	$ –	$ 144,052
Non-U.S.	61,981	25,702	91	87,774
Loans and securities backed by:				
Commercial real estate	–	916	45	961
Residential real estate	–	8,940	99	9,039
Corporate debt instruments	177	37,883	1,415	39,475
State and municipal obligations	–	371	–	371
Other debt obligations	80	2,086	37	2,203
Equity securities	135,032	1,739	103	136,874
Commodities	–	5,640	1	5,641
Total	$ 282,460	$ 142,139	$ 1,791	$ 426,390
Liabilities				
Government and agency obligations:				
U.S.	$ (26,400)	$ (32)	$ –	$ (26,432)
Non-U.S.	(50,825)	(2,343)	–	(53,168)
Loans and securities backed by:				
Commercial real estate	–	(27)	–	(27)
Residential real estate	–	(5)	–	(5)
Corporate debt instruments	(124)	(15,317)	(70)	(15,511)
Equity securities	(48,347)	(37)	(8)	(48,392)

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

In the table above:

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

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

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

	As of December 2023		As of December 2022	
$ in millions	Amount or Range	Weighted Average	Amount or Range	Weighted Average
Loans and securities backed by real estate				
Level 3 assets	$ 144		$ 154	
Yield	3.8% to 26.1%	12.8 %	3.0% to 36.0%	14.2 %
Recovery rate	35.5% to 76.0%	44.6 %	35.8% to 76.1%	54.7 %
Cumulative loss rate	N/A	N/A	3.7% to 29.9%	10.4 %
Duration (years)	0.3 to 15.3	5.2	0.9 to 12.3	4.6
Corporate debt instruments				
Level 3 assets	$ 1,415		$ 1,238	
Yield	2.8% to 40.0%	9.3 %	1.1% to 34.3%	6.9 %
Recovery rate	7.3% to 65.0%	39.4 %	11.5% to 77.0%	48.0 %
Duration (years)	0.9 to 11.3	3.4	0.3 to 20.3	4.5

In the table above:

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

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

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

In the table above:

- Changes in fair value are presented for all trading cash instruments that are classified in level 3 as of the end of the period.
- Net unrealized gains/(losses) relates to trading cash instruments that were still held at period-end.
- Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. If a trading cash instrument was transferred to level 3 during a reporting period, its entire gain or loss for the period is classified in level 3.
- For level 3 trading cash instrument assets, increases are shown as positive amounts, while decreases are shown as negative amounts. For level 3 trading cash instrument liabilities, increases are shown as negative amounts, while decreases are shown as positive amounts.
- Level 3 trading cash instruments are frequently economically hedged with level 1 and level 2 trading cash instruments and/or level 1, level 2 or level 3 derivatives. Accordingly, gains or losses that are classified in level 3 can be partially offset by gains or losses attributable to level 1 or level 2 trading cash instruments and/or level 1,

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

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

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

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

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

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

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

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

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

Derivatives

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

$ in millions	Level 1	Level 2	Level 3	Total
As of December 2023				
Assets				
Interest rates	$ 15	$ 241,850	$ 758	$ 242,623
Credit	–	9,964	2,861	12,825
Currencies	–	89,694	210	89,904
Commodities	–	15,393	1,449	16,842
Equities	2	59,220	816	60,038
Gross fair value	17	416,121	6,094	422,232
Counterparty netting in levels	–	(319,045)	(933)	(319,978)
Subtotal	$ 17	$ 97,076	$ 5,161	$ 102,254
Cross-level counterparty netting				(1,411)
Cash collateral netting				(49,723)
Net fair value				$ 51,120
Liabilities				
Interest rates	$ (14)	$ (213,861)	$ (1,197)	$ (215,072)
Credit	–	(8,923)	(1,211)	(10,134)
Currencies	–	(97,436)	(168)	(97,604)
Commodities	–	(17,122)	(821)	(17,943)
Equities	(5)	(78,222)	(1,887)	(80,114)
Gross fair value	(19)	(415,564)	(5,284)	(420,867)
Counterparty netting in levels	–	319,045	933	319,978
Subtotal	$ (19)	$ (96,519)	$ (4,351)	$ (100,889)
Cross-level counterparty netting				1,411
Cash collateral netting				42,724
Net fair value				$ (56,754)

In the table above:

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

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

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

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

- Averages represent the arithmetic average of the inputs and are not weighted by the relative fair value or notional amount of the respective financial instruments. An average greater than the median indicates that the majority of inputs are below the average. For example, the difference between the average and the median for credit spreads indicates that the majority of the inputs fall in the lower end of the range.

- The ranges, averages and medians of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one derivative. For example, the highest correlation for interest rate derivatives is appropriate for valuing a specific interest rate derivative but may not be appropriate for valuing any other interest rate derivative. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 derivatives.

- Interest rates, currencies and equities derivatives are valued using option pricing models, credit derivatives are valued using option pricing, correlation and discounted cash flow models, and commodities derivatives are valued using option pricing and discounted cash flow models.

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

- Correlation within currencies and equities includes cross-product type correlation.

- Natural gas spread represents the spread per million British thermal units of natural gas.

- Oil spread represents the spread per barrel of oil and refined products.

- Electricity price represents the price per megawatt hour of electricity.

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

- **Correlation.** Ranges for correlation cover a variety of underliers both within one product type (e.g., equity index and equity single stock names) and across product types (e.g., correlation of an interest rate and a currency), as well as across regions. Generally, cross-product type correlation inputs are used to value more complex instruments and are lower than correlation inputs on assets within the same derivative product type.

- **Volatility.** Ranges for volatility cover numerous underliers across a variety of markets, maturities and strike prices. For example, volatility of equity indices is generally lower than volatility of single stocks.

- **Credit spreads, upfront credit points and recovery rates.** The ranges for credit spreads, upfront credit points and recovery rates cover a variety of underliers (index and single names), regions, sectors, maturities and credit qualities (high-yield and investment-grade). The broad range of this population gives rise to the width of the ranges of significant unobservable inputs.

- **Commodity prices and spreads.** The ranges for commodity prices and spreads cover variability in products, maturities and delivery locations.

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

- **Correlation.** In general, for contracts where the holder benefits from the convergence of the underlying asset or index prices (e.g., interest rates, credit spreads, foreign exchange rates, inflation rates and equity prices), an increase in correlation results in a higher fair value measurement.

- **Volatility.** In general, for purchased options, an increase in volatility results in a higher fair value measurement.

- **Credit spreads, upfront credit points and recovery rates.** In general, the fair value of purchased credit protection increases as credit spreads or upfront credit points increase or recovery rates decrease. Credit spreads, upfront credit points and recovery rates are strongly related to distinctive risk factors of the underlying reference obligations, which include reference entity-specific factors, such as leverage, volatility and industry, market-based risk factors, such as borrowing costs or liquidity of the underlying reference obligation, and macroeconomic conditions.

- **Commodity prices and spreads.** In general, for contracts where the holder is receiving a commodity, an increase in the spread (price difference from a benchmark index due to differences in quality or delivery location) or price results in a higher fair value measurement.

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

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

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

In the table above:

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

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

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

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

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

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

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

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

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

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

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

Investments

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

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

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

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

In the table above:

- Ranges represent the significant unobservable inputs that were used in the valuation of each type of investment.
- Weighted averages are calculated by weighting each input by the relative fair value of the investment.
- The ranges and weighted averages of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one investment. For example, the highest multiple for private equity securities
- Corporate debt securities, securities backed by real estate and other debt obligations are valued using discounted cash flows, and equity securities are valued using market comparables and discounted cash flows.
- The fair value of any one instrument may be determined using multiple valuation techniques. For example, market comparables and discounted cash flows may be used together to determine fair value. Therefore, the level 3 balance encompasses both of these techniques.

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

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

In the table above:

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

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

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

Level 3 Rollforward Commentary for the Year Ended December 2023. The net realized and unrealized losses on level 3 investments of $259 million

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

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

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

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

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

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

Loans

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

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

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

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

	As of December 2023		As of December 2022	
$ in millions	**Amount or Range**	**Weighted Average**	Amount or Range	Weighted Average
Corporate				
Level 3 assets	**$ 344**		$ 637	
Yield	**8.0% to 17.1%**	**10.5 %**	4.1% to 26.9%	9.6 %
Recovery rate	**2.0% to 95.0%**	**74.0 %**	23.1% to 95.0%	66.0 %

In the table above:

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

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

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

In the table above:

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

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

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

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

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

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

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

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

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

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

Other Financial Assets and Liabilities

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

$ in millions	Level 1	Level 2	Level 3	Total
As of December 2023				
Assets				
Resale agreements	**$ –**	**$ 223,543**	**$ –**	**$ 223,543**
Securities borrowed	**–**	**44,930**	**–**	**44,930**
Customer and other receivables	**–**	**23**	**–**	**23**
Other assets	**–**	**179**	**187**	**366**
Total	**$ –**	**$ 268,675**	**$ 187**	**$ 268,862**
Liabilities				
Deposits	**$ –**	**$ (26,723)**	**$ (2,737)**	**$ (29,460)**
Repurchase agreements	**–**	**(249,887)**	**–**	**(249,887)**
Securities loaned	**–**	**(8,934)**	**–**	**(8,934)**
Other secured financings	**–**	**(10,532)**	**(2,022)**	**(12,554)**
Unsecured borrowings:				
Short-term	**–**	**(40,538)**	**(5,589)**	**(46,127)**
Long-term	**–**	**(72,562)**	**(13,848)**	**(86,410)**
Other liabilities	**–**	**(187)**	**(79)**	**(266)**
Total	**$ –**	**$ (409,363)**	**$ (24,275)**	**$ (433,638)**
As of December 2022				
Assets				
Resale agreements	$ –	$ 225,117	$ –	$ 225,117
Securities borrowed	–	38,578	–	38,578
Customer and other receivables	–	25	–	25
Other assets	–	71	74	145

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

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

As of December 2023:

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

As of December 2022:

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

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

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

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

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

In the table above:

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

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

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

Level 3 Rollforward Commentary for the

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

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

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

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

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

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

Note 6.

Trading Assets and Liabilities

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

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

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

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

Gains and Losses from Market Making

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

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

In the table above:

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

Note 7.

Derivatives and Hedging Activities

Derivative Activities

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

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

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

The firm enters into various types of derivatives, including:

- **Futures and Forwards.** Contracts that commit counterparties to purchase or sell financial instruments, commodities or currencies in the future.

- **Swaps.** Contracts that require counterparties to exchange cash flows, such as currency or interest payment streams. The amounts exchanged are based on the specific terms of the contract with reference to specified rates, financial instruments, commodities, currencies or indices.

- **Options.** Contracts in which the option purchaser has the right, but not the obligation, to purchase from or sell to the option writer financial instruments, commodities or currencies within a defined time period for a specified price.

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

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

	As of December 2023		As of December 2022	
$ in millions	**Derivative Assets**	**Derivative Liabilities**	Derivative Assets	Derivative Liabilities
Not accounted for as hedges				
Exchange-traded	**$ 3,401**	**$ 1,129**	$ 675	$ 1,385
OTC-cleared	**67,815**	**64,490**	74,297	72,979
Bilateral OTC	**171,109**	**149,444**	195,052	174,687
Total interest rates	**242,325**	**215,063**	270,024	249,051
OTC-cleared	**1,271**	**1,533**	1,516	1,802
Bilateral OTC	**11,554**	**8,601**	10,751	9,478
Total credit	**12,825**	**10,134**	12,267	11,280
Exchange-traded	**708**	**15**	1,041	22
OTC-cleared	**1,033**	**1,632**	520	589
Bilateral OTC	**88,158**	**95,742**	102,301	111,276
Total currencies	**89,899**	**97,389**	103,862	111,887
Exchange-traded	**5,468**	**5,998**	9,225	9,542
OTC-cleared	**635**	**711**	698	838
Bilateral OTC	**10,739**	**11,234**	30,017	22,745
Total commodities	**16,842**	**17,943**	39,940	33,125
Exchange-traded	**31,315**	**39,247**	26,302	26,607
OTC-cleared	**122**	**171**	685	19
Bilateral OTC	**28,601**	**40,696**	23,574	30,157
Total equities	**60,038**	**80,114**	50,561	56,783
Subtotal	**421,929**	**420,643**	476,654	462,126
Accounted for as hedges				
Bilateral OTC	**298**	**9**	335	11
Total interest rates	**298**	**9**	335	11
OTC-cleared	**–**	**7**	29	29
Bilateral OTC	**5**	**208**	53	256
Total currencies	**5**	**215**	82	285
Subtotal	**303**	**224**	417	296
Total gross	**$ 422,232**	**$ 420,867**	$ 477,071	$ 462,422

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

In the tables above:

- Gross fair values exclude the effects of both counterparty netting and collateral, and therefore are not representative of the firm's exposure.
- Where the firm has received or posted collateral under credit support agreements, but has not yet determined such agreements are enforceable, the related collateral has not been netted.
- Notional amounts, which represent the sum of gross long and short derivative contracts, provide an indication of the volume of the firm's derivative activity and do not

OTC Derivatives

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

$ in millions	Less than 1 Year	1 - 5 Years	Greater than 5 Years	Total
As of December 2023				
Assets				
Interest rates	**$ 9,511**	**$ 12,178**	**$ 49,045**	**$ 70,734**
Credit	**1,814**	**3,283**	**1,961**	**7,058**
Currencies	**9,117**	**7,579**	**5,479**	**22,175**
Commodities	**2,993**	**2,574**	**1,451**	**7,018**
Equities	**6,625**	**3,155**	**1,655**	**11,435**
Counterparty netting in tenors	**(3,046)**	**(2,765)**	**(3,648)**	**(9,459)**
Subtotal	**$ 27,014**	**$ 26,004**	**$ 55,943**	**$ 108,961**
Cross-tenor counterparty netting				**(16,288)**
Cash collateral netting				**(49,723)**
Total OTC derivative assets				**$ 42,950**
Liabilities				
Interest rates	**$ 11,952**	**$ 15,972**	**$ 17,540**	**$ 45,464**
Credit	**792**	**2,508**	**1,067**	**4,367**
Currencies	**15,335**	**7,934**	**7,299**	**30,568**
Commodities	**2,526**	**3,643**	**1,419**	**7,588**
Equities	**10,183**	**10,048**	**3,340**	**23,571**
Counterparty netting in tenors	**(3,046)**	**(2,765)**	**(3,648)**	**(9,459)**
Subtotal	**$ 37,742**	**$ 37,340**	**$ 27,017**	**$ 102,099**
Cross-tenor counterparty netting				**(16,288)**
Cash collateral netting				**(42,724)**
Total OTC derivative liabilities				**$ 43,087**
As of December 2022				
Assets				
Interest rates	$ 5,509	$ 16,963	$ 53,943	$ 76,415
Credit	921	2,622	2,142	5,685

In the table above:

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

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

Credit Derivatives

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

The firm enters into the following types of credit derivatives:

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

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

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

The table below presents information about credit derivatives.

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

In the table above:

Impact of Credit and Funding Spreads on Derivatives

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

The table below presents information about CVA and FVA.

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

Bifurcated Embedded Derivatives

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

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

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

Derivatives with Credit-Related Contingent Features

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

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

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

Hedge Accounting

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

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

Fair Value Hedges

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

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

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

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

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

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

$ in millions	Carrying Value	Cumulative Hedging Adjustment
<u>As of December 2023</u>		
Assets		
Investments	**$ 16,523**	**$ (104)**
Liabilities		
Deposits	**$ 3,435**	**$ (123)**
Unsecured short-term borrowings	**$ 14,449**	**$ (94)**
Unsecured long-term		

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

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

Net Investment Hedges

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

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

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

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

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

Note 8.

Investments

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

The table below presents information about investments.

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

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

Equity Securities and Debt Instruments, at Fair Value

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

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

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

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

In the table above:

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

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

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

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

In the table above:

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

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

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

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

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

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

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

Available-for-Sale Securities

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

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

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

In the table above:

- The weighted average yield for available-for-sale securities is presented on a pre-tax basis and computed using the effective interest rate of each security at the end of the period, weighted based on the fair value of each security.
- The gross unrealized gains included in accumulated other comprehensive income/(loss) were not material and the gross unrealized losses included in accumulated other comprehensive income/(loss) were $1.89 billion as of

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

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

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

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

Held-to-Maturity Securities

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

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

$ in millions	Amortized Cost	Fair Value	Weighted Average Yield
As of December 2023			

In the table above:

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

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

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

Note 9.

Loans

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

The table below presents information about loans.

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

In the table above:

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

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

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

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

Credit Quality

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

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

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

In the table above:

- Substantially all residential real estate loans included in the other metrics/unrated category consists of loans extended to wealth management clients. As of both December 2023 and December 2022, substantially all of such loans had a loan-to-value ratio of less than 80% and were performing in accordance with the contractual terms. Additionally, as of both December 2023 and December 2022, the vast majority of such loans had a FICO credit score of greater than 740.

- Substantially all securities-based loans included in the other metrics/unrated category had a loan-to-value ratio of less than 80% and were performing in accordance with the contractual terms as of both December 2023 and December 2022.

- For installment and credit card loans included in the other metrics/unrated category, the evaluation of credit quality incorporates the borrower's FICO credit score. FICO credit scores are periodically refreshed by the firm to assess the updated creditworthiness of the borrower. See "Vintage" below for information about installment and credit card loans by FICO credit scores.

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

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

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

	As of December 2022			
$ in millions	Investment-Grade	Non-Investment-Grade	Other Metrics/ Unrated	Total
2022	$ 2,607	$ 4,042	$ 2	$ 6,651
2021	1,669	4,273	–	5,942
2020	684	2,595	–	3,279
2019	209	2,779	–	2,988
2018	759	1,911	–	2,670
2017 or earlier	508	2,329	–	2,837
Revolving	3,709	8,746	–	12,455
Corporate	10,145	26,675	2	36,822
2022	805	3,900	2	4,707
2021	771	3,460	–	4,231
2020	407	1,740	–	2,147
2019	335	1,255	–	1,590
2018	212	469	–	681
2017 or earlier	1,238	797	11	2,046
Revolving	7,660	3,003	–	10,663
Revolving converted to term	145	12	–	157
Commercial real estate	11,573	14,636	13	26,222
2022	774	24	2,835	3,633
2021	517	143	2,848	3,508
2020	8	6	89	103
2019	7	–	99	106
2018	10	50	138	198
2017 or earlier	31	2	150	183
Revolving	8,052	2,727	13	10,792
Residential real estate	9,399	2,952	6,172	18,523
2022	5	–	–	5
2018	1	–	–	1
2017 or earlier	–	291	–	291
Revolving	12,895	473	3,006	16,374
Securities-based	12,901	764	3,006	16,671
2022	4,556	751	113	5,420
2021	3,289	1,078	146	4,513
2020	1,871	701	36	2,608
2019	260	79	12	351
2018	545	67	6	618
2017 or earlier	293	108	–	401

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

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

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

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

$ in millions	Carrying Value	Americas	EMEA	Asia	Total
As of December 2023					
Corporate	**$ 35,874**	**63 %**	**29 %**	**8 %**	**100 %**
Commercial real estate	**26,028**	**80 %**	**17 %**	**3 %**	**100 %**

In the table above:

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

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

The table below presents information about past due loans.

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

The table below presents information about nonaccrual loans.

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

In the table above:

- Nonaccrual loans included $600 million as of December 2023 and $483 million as of December 2022 of loans that were 30 days or more past due.

- Loans that were 90 days or more past due and still accruing were not material as of both December 2023 and December 2022.

- Allowance for loan losses as a percentage of total nonaccrual loans was 122.0% as of December 2023 and 204.5% as of December 2022.

- Commercial real estate, residential real estate and other collateralized loans are collateral dependent loans and the repayment of such loans is generally expected to be provided by the operation or sale of the underlying collateral. The allowance for credit losses for such nonaccrual loans is determined by considering the fair value of the collateral less estimated cost to sell, if applicable.

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

Allowance for Credit Losses

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

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

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

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

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

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

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

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

See Note 18 for further information about lending commitments.

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

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

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

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

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

Allowance for Credit Losses Rollforward

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

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

In the table above:

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

Forecast Model Inputs as of December 2023

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

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

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

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

In the table above:

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

Allowance for Credit Losses Commentary

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

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

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

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

Estimated Fair Value

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

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

Note 10.

Fair Value Option

Other Financial Assets and Liabilities at Fair Value

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

- Reflect economic events in earnings on a timely basis;

- Mitigate volatility in earnings from using different measurement attributes (e.g., transfers of financial assets accounted for as financings are recorded at fair value, whereas the related secured financing would be recorded on an accrual basis absent electing the fair value option); and

- Address simplification and cost-benefit considerations (e.g., accounting for hybrid financial instruments at fair value in their entirety versus bifurcation of embedded derivatives and hedge accounting for debt hosts).

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

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

- Repurchase agreements and substantially all resale agreements;

- Certain securities borrowed and loaned transactions;

- Certain customer and other receivables and certain other assets and liabilities;

- Certain time deposits (deposits with no stated maturity are not eligible for a fair value option election), including structured certificates of deposit, which are hybrid financial instruments;

- Substantially all other secured financings, including transfers of assets accounted for as financings; and

- Certain unsecured short- and long-term borrowings, substantially all of which are hybrid financial instruments.

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

Gains and Losses on Other Financial Assets and Liabilities Accounted for at Fair Value Under the Fair Value Option

The table below presents the gains and losses recognized in earnings as a result of the election to apply the fair value option to certain financial assets and liabilities.

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

In the table above:

- Gains/(losses) were substantially all included in market making.

- Gains/(losses) exclude contractual interest, which is included in interest income and interest expense, for all instruments other than hybrid financial instruments. See Note 23 for further information about interest income and interest expense.

- Gains/(losses) included in unsecured short- and long-term borrowings were substantially all related to the embedded derivative component of hybrid financial instruments. These gains and losses would have been recognized under other U.S. GAAP even if the firm had not elected to account for the entire hybrid financial instrument at fair value.

- Gains/(losses) included in other were primarily related to resale and repurchase agreements, deposits and other secured financings.

- Other financial assets and liabilities at fair value are frequently economically hedged with trading assets and liabilities. Accordingly, gains or losses on such other financial assets and liabilities can be partially offset by gains or losses on trading assets and liabilities. As a result, gains or losses on other financial assets and liabilities do not necessarily represent the overall impact on the firm's results of operations, liquidity or capital resources.

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

Long-Term Debt Instruments

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

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

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

Debt Valuation Adjustment

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

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

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

In the table above:

- After-tax DVA is included in debt valuation adjustment in the consolidated statements of comprehensive income.

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

Loans and Lending Commitments

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

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

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

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

Impact of Credit Spreads on Loans and Lending Commitments

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

Note 11.

Collateralized Agreements and Financings

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

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

Resale and Repurchase Agreements

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

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

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

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

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

Securities Borrowed and Loaned Transactions

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

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

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

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

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

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

Offsetting Arrangements

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

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

In the table above:

- Substantially all of the gross carrying values of these arrangements are subject to enforceable netting agreements.
- Where the firm has received or posted collateral under credit support agreements, but has not yet determined such agreements are enforceable, the related collateral has not been netted.
- Amounts not offset includes counterparty netting that does not meet the criteria for netting under U.S. GAAP and the fair value of collateral received or posted subject to enforceable credit support agreements.

Gross Carrying Value of Repurchase Agreements and Securities Loaned

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

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

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

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

Other Secured Financings

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

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

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

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

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

The table below presents information about other secured financings.

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

In the table above:

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

- Total other secured financings included $2.34 billion as of December 2023 and $1.69 billion as of December 2022 related to transfers of financial assets accounted for as financings rather than sales. Such financings were collateralized by financial assets, primarily included in trading assets, of $2.36 billion as of December 2023 and $1.64 billion as of December 2022.

- Other secured financings collateralized by financial instruments included $8.38 billion as of December 2023 and $7.49 billion as of December 2022 of other secured financings collateralized by trading assets, investments and loans, and included $1.49 billion as of December 2023 and $1.22 billion as of December 2022 of other secured financings collateralized by financial instruments received as collateral and repledged.

The table below presents other secured financings by maturity.

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

In the table above:

- Long-term other secured financings that are repayable prior to maturity at the option of the firm are reflected at their contractual maturity dates.

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

Collateral Received and Pledged

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

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

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

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

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

The table below presents information about assets pledged.

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

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

Note 12.

Other Assets

The table below presents other assets by type.

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

Property, Leasehold Improvements and Equipment

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

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

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

Goodwill

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

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

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

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

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

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

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

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

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

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

- **Performance Indicators.** For 2023, the firm generated higher net revenues net of provision for credit losses and increased book value per share, although overall performance declined compared with 2022. This decline reflected the firm's continued execution on the narrowing of its strategic focus, which had a negative impact on net earnings. Within the reporting units with goodwill, there continued to be solid fundamentals underlying our businesses, where the firm continued to maintain industry leadership positions and execute on strategic goals.
- **Macroeconomic Indicators.** Despite broad macroeconomic and geopolitical concerns, the global economy continued to grow in 2023.
- **Firm and Industry Events.** There were no events, entity-specific or otherwise, that would have had a significant negative impact on the valuation of the firm's reporting units with goodwill.
- **Fair Value Indicators.** Since the 2022 quantitative test, changes in the fair value indicators in the market did not have a significant negative impact on the valuation of the firm's reporting units with goodwill.

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

Identifiable Intangible Assets

The table below presents identifiable intangible assets by type.

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

In the table above:

- Other includes acquired leases and merchant relationships related to GreenSky. Previously, merchant relationships were included in customer lists and merchant relationships but were reclassified to other in conjunction with the planned sale of GreenSky. Prior period amounts have been conformed to the current presentation.

- The decrease in the net carrying value of identifiable intangible assets from December 2022 to December 2023 was primarily attributable to the $506 million write-down related to GreenSky. These identifiable intangible assets, which are included within Platform Solutions, were classified as held for sale in connection with the planned sale of GreenSky and had a net carrying value of $110 million as of December 2023.

- During 2023, the amount of identifiable intangible assets acquired by the firm was not material. The firm acquired approximately $1.79 billion of identifiable intangible assets (with a weighted average amortization period of 13 years) during 2022, substantially all in connection with the acquisitions of GreenSky and NN Investment Partners. Substantially all of these identifiable intangible assets consisted of customer lists and merchant relationships.

- Substantially all of the firm's identifiable intangible assets have finite useful lives and are amortized over their estimated useful lives generally using the straight-line method.

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

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

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

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

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

Operating Lease Right-of-Use Assets

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

An operating lease right-of-use asset is initially determined based on the operating lease liability, adjusted for initial direct costs, lease incentives and amounts paid at or prior to lease commencement. This amount is then amortized over the lease term. Right-of-use assets and operating lease

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

Miscellaneous Receivables and Other

Miscellaneous receivables and other included:

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

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

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

Note 13.

Deposits

The table below presents the types and sources of deposits.

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

In the table above:

- Substantially all deposits are interest-bearing.
- Savings and demand accounts consist of money market deposit accounts, negotiable order of withdrawal accounts and demand deposit accounts that have no stated maturity or expiration date.
- Time deposits included $29.46 billion as of December 2023 and $15.75 billion as of December 2022 of deposits accounted for at fair value under the fair value option. See Note 10 for further information about deposits accounted for at fair value.
- Time deposits had a weighted average maturity of approximately 0.6 years as of December 2023 and 0.9 years as of December 2022.
- Deposits insured by non-U.S. insurance programs were $26.00 billion as of December 2023 and $31.74 billion as of December 2022. The decline in insured deposits from December 2022 reflected a change in an insurance program that became effective in January 2023, which reduced the population of deposit accounts eligible for insurance coverage and lowered the applicable insurance limits.

The table below presents the location of deposits.

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

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

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

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

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

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

Note 14.

Unsecured Borrowings

The table below presents information about unsecured borrowings.

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

Unsecured Short-Term Borrowings

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

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

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

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

Unsecured Long-Term Borrowings

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

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

In the table above:

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

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

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

In the table above:

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

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

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

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

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

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

Subordinated Borrowings

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

The table below presents information about subordinated borrowings.

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

In the table above:

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

Junior Subordinated Debt

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

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

Note 15.

Other Liabilities

The table below presents other liabilities by type.

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

Operating Lease Liabilities

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

The table below presents information about operating lease liabilities.

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

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

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

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

Accrued Expenses and Other

Accrued expenses and other included:

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

Note 16.

Securitization Activities

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

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

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

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

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

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

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

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

$ in millions	Outstanding Principal Amount	Retained Interests	Purchased Interests
As of December 2023			
U.S. government agency-issued CMOs	**$ 31,140**	**$ 2,260**	**$ –**

In the table above:

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

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

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

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

In the table above:

- Amounts do not reflect the benefit of other financial instruments that are held to mitigate risks inherent in these retained interests.

- Changes in fair value based on an adverse variation in assumptions generally cannot be extrapolated because the relationship of the change in assumptions to the change in fair value is not usually linear.

- The impact of a change in a particular assumption is calculated independently of changes in any other assumption. In practice, simultaneous changes in assumptions might magnify or counteract the sensitivities disclosed above.

- The constant prepayment rate is included only for positions for which it is a key assumption in the determination of fair value.

- The discount rate for retained interests that relate to U.S. government agency-issued CMOs does not include any credit loss. Expected credit loss assumptions are reflected in the discount rate for the remainder of retained interests.

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

Note 17.

Variable Interest Entities

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

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

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

VIE Consolidation Analysis

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

- Which variable interest holder has the power to direct the activities of the VIE that most significantly impact the VIE's economic performance;

- Which variable interest holder has the obligation to absorb losses or the right to receive benefits from the VIE that could potentially be significant to the VIE;

- The VIE's purpose and design, including the risks the VIE was designed to create and pass through to its variable interest holders;

- The VIE's capital structure;

- The terms between the VIE and its variable interest holders and other parties involved with the VIE; and

- Related-party relationships.

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

VIE Activities

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

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

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

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

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

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

Nonconsolidated VIEs

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

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

In the table above:

- The nature of the firm's variable interests is described in the rows under maximum exposure to loss.
- The firm's exposure to the obligations of VIEs is generally limited to its interests in these entities. In certain instances, the firm provides guarantees, including derivative guarantees, to VIEs or holders of variable interests in VIEs.
- The maximum exposure to loss excludes the benefit of offsetting financial instruments that are held to mitigate the risks associated with these variable interests.
- The maximum exposure to loss from retained interests, purchased interests, and debt and equity is the carrying value of these interests.

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

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

As of both December 2023 and December 2022, the carrying

Consolidated VIEs

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

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

In the table above:

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

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

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

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

Note 18.

Commitments, Contingencies and Guarantees

Commitments

The table below presents commitments by type.

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

The table below presents commitments by expiration.

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

Lending Commitments

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

The table below presents information about lending commitments.

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

In the table above:

- Held for investment lending commitments are accounted for at amortized cost. The carrying value of lending commitments was a liability of $845 million (including allowance for credit losses of $620 million) as of December 2023 and $1.01 billion (including allowance for credit losses of $774 million) as of December 2022. The estimated fair value of such lending commitments was a liability of $5.29 billion as of December 2023 and $5.95 billion as of December 2022. Had these lending commitments been carried at fair value and included in the fair value hierarchy, $3.10 billion as of December 2023 and $3.11 billion as of December 2022 would have been classified in level 2, and $2.19 billion as of December 2023 and $2.84 billion as of December 2022 would have been classified in level 3.

- Held for sale lending commitments are accounted for at the lower of cost or fair value. The carrying value of lending commitments held for sale was a liability of $70 million as of December 2023 and $88 million as of December 2022. The estimated fair value of such lending commitments approximates the carrying value. Had these lending commitments been included in the fair value hierarchy, they would have been primarily classified in level 3 as of both December 2023 and December 2022.

- Gains or losses related to lending commitments at fair value, if any, are generally recorded net of any fees in other principal transactions.

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

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

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

Consumer. The firm's consumer lending commitments includes:

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

- Commitments to provide unsecured installment loans to consumers were $2.25 billion as of December 2023. As of December 2023, such commitments were classified as held for sale in connection with the planned sale of GreenSky. As of December 2022, commitments to provide unsecured installment loans to consumers were $1.88 billion.

Risk Participations

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

Collateralized Agreement Commitments/ Collateralized Financing Commitments

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

Investment Commitments

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

Contingencies

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

Guarantees

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

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

In the table above:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Note 19.

Shareholders' Equity

Common Equity

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

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

The table below presents information about common stock repurchases.

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

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

The table below presents common stock dividends declared.

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

On January 12, 2024, the Board of Directors of Group Inc.

Preferred Equity

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

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

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

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

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

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

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

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

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

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

The table below presents preferred stock dividends declared.

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

Accumulated Other Comprehensive Income/(Loss)

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

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

Note 20.

Regulation and Capital Adequacy

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

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

Capital Framework

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

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

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

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

Consolidated Regulatory Capital Requirements

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

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

In the table above:

- As of both December 2023 and December 2022, under both the Standardized and Advanced Capital Rules, the CET1 capital ratio requirement includes a minimum of 4.5%, the Tier 1 capital ratio requirement includes a minimum of 6.0% and the Total capital ratio requirement includes a minimum of 8.0%. These requirements also include the capital conservation buffer requirements, consisting of the G-SIB surcharge (Method 2) of 3.0% as of December 2023 and 2.5% as of December 2022 and the countercyclical capital buffer, which the FRB has set to zero percent. In addition, the capital conservation buffer requirements include the stress capital buffer of 5.5% as of December 2023 and 6.3% as of December 2022 under the Standardized Capital Rules and a buffer of 2.5% as of both December 2023 and December 2022 under the Advanced Capital Rules.

- The G-SIB surcharge is updated annually based on financial data from the prior year and is generally applicable for the following year. The G-SIB surcharge is calculated using two methodologies, the higher of which is reflected in the firm's risk-based capital requirements. The first calculation (Method 1) is based on the Basel Committee's methodology which, among other factors, relies upon measures of the size, activity and complexity of each G-SIB. The second calculation (Method 2) uses similar inputs but includes a measure of reliance on short-term wholesale funding.

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

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

Leverage Ratios. The table below presents the leverage requirements.

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

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

The table below presents information about leverage ratios.

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

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

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

In the table above:

- Beginning in January 2022, the firm started to phase in the estimated reduction to regulatory capital as a result of adopting the CECL model. The total amount of reduction to be phased in from January 1, 2022 through January 1, 2025 (at 25% per year) was $1.11 billion, of which $553 million had been phased in as of December 2023. The total amount to be phased in includes the impact of adopting CECL as of January 1, 2020, as well as 25% of the increase in the allowance for credit losses from January 1, 2020 through December 31, 2021. The impact of CECL transition reflects the remaining amount of reduction to be phased in as of both December 2023 and December 2022.

- Deduction for goodwill was net of deferred tax liabilities of $692 million as of December 2023 and $700 million as of December 2022.

- Other adjustments within CET1 capital and Tier 1 capital primarily include CVAs on derivative liabilities, the overfunded portion of the firm's defined benefit pension plan obligation net of associated deferred tax liabilities, disallowed deferred tax assets, debt valuation adjustments and other required credit risk-based deductions. Other adjustments within Advanced Tier 2 capital include eligible credit reserves.

- Qualifying subordinated debt is subordinated debt issued by Group Inc. with an original maturity of five years or greater. The outstanding amount of subordinated debt qualifying for Tier 2 capital is reduced upon reaching a remaining maturity of five years. See Note 14 for further information about the firm's subordinated debt.

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

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

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

Credit Risk

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

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

Market Risk

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

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

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

  The firm's positional losses observed on a single day exceeded its 99% one-day regulatory VaR on one occasion during both 2023 and 2022. There was no change in the firm's VaR multiplier used to calculate Market RWAs;
- Stressed VaR is the potential loss in value of trading assets and liabilities, as well as certain investments, loans, and other financial assets and liabilities accounted for at fair value, during a period of significant market stress;
- Incremental risk is the potential loss in value of non-securitized positions due to the default or credit migration of issuers of financial instruments over a one-year time horizon;
- Comprehensive risk is the potential loss in value, due to price risk and defaults, within the firm's credit correlation positions; and
- Specific risk is the risk of loss on a position that could result from factors other than broad market movements, including event risk, default risk and idiosyncratic risk. The standardized measurement method is used to determine specific risk RWAs, by applying supervisory defined risk-weighting factors after applicable netting is performed.

Operational Risk

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

The table below presents information about RWAs.

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

In the table above:

- Securities financing transactions represents resale and

The table below presents changes in RWAs.

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

RWAs Rollforward Commentary

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

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

GS Bank USA

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

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

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

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

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

In the table above:

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

- The "well-capitalized" requirements are the binding requirements for leverage ratios.

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

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

In the table above:

- The lower of the Standardized or Advanced ratio is the ratio against which GS Bank USA's compliance with the capital requirements is assessed under the risk-based Capital Rules, and therefore, the Standardized ratios applied to GS Bank USA as of both December 2023 and December 2022.

- Beginning in January 2022, GS Bank USA started to phase in the estimated reduction to regulatory capital as a result of adopting the CECL model at 25% per year through January 2025. The total amount to be phased in includes the impact of adopting CECL as of January 1, 2020, as well as 25% of the increase in the allowance for credit losses from January 1, 2020 through December 31, 2021.

- The Standardized and Advanced risk-based capital ratios increased from December 2022 to December 2023, reflecting an increase in capital, principally due to net earnings, partially offset by an increase in Credit RWAs.

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

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

In the table above:

- Average adjusted total assets represents the average daily assets for the quarter adjusted for deductions from Tier 1 capital and the impact of CECL transition.

- Tier 1 leverage ratio is calculated as Tier 1 capital divided by average adjusted total assets.

- SLR is calculated as Tier 1 capital divided by total leverage exposure.

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

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

Restrictions on Payments

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

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

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

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

Note 21.

Earnings Per Common Share

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

The table below presents information about basic and diluted EPS.

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

In the table above:

- Net earnings to common represents net earnings applicable to common shareholders, which is calculated as net earnings less preferred stock dividends.

- Unvested share-based awards that have non-forfeitable rights to dividends or dividend equivalents are treated as a separate class of securities under the two-class method. Distributed earnings allocated to these securities reduce net earnings to common to calculate EPS under this method. The impact of applying this methodology was a reduction in basic EPS of $0.15 for both 2023 and 2022 and $0.10 for 2021.

- Diluted EPS does not include antidilutive RSUs, including those that are subject to market or performance conditions.

Note 22.

Transactions with Affiliated Funds

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

The tables below present information about affiliated funds.

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

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

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

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

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

Note 23.

Interest Income and Interest Expense

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

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

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

In the table above:

- Collateralized agreements includes rebates paid and interest income on securities borrowed.
- Loans excludes interest on loans held for sale that are accounted for at the lower of cost or fair value. Such interest is included within other interest.
- Other interest income includes interest income on customer debit balances, other interest-earning assets and loans held

Note 24.

Income Taxes

Provision for Income Taxes

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

The table below presents information about the provision for taxes.

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

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

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

Deferred Income Taxes

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

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

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

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

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

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

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

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

Unrecognized Tax Benefits

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

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

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

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

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

Regulatory Tax Examinations

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

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

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

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

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

Note 25.

Business Segments

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

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

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

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

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

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

Segment Results

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

	Year Ended December		
$ in millions	**2023**	2022	2021
Global Banking & Markets			
Non-interest revenues	**$ 29,254**	$ 30,042	$ 34,079
Net interest income	**742**	2,445	2,655
Total net revenues	**29,996**	32,487	36,734
Provision for credit losses	**401**	468	(171)
Operating expenses	**18,040**	17,851	19,542
Pre-tax earnings	**$ 11,555**	$ 14,168	$ 17,363
Net earnings	**$ 9,163**	$ 11,830	$ 13,890
Net earnings to common	**$ 8,703**	$ 11,458	$ 13,535
Average common equity	**$ 71,863**	$ 69,951	$ 60,064
Return on average common equity	**12.1 %**	16.4 %	22.5 %
Asset & Wealth Management			
Non-interest revenues	**$ 10,790**	$ 9,843	$ 18,922
Net interest income	**3,090**	3,533	3,043
Total net revenues	**13,880**	13,376	21,965
Provision for credit losses	**(508)**	519	(169)
Operating expenses	**13,029**	11,550	11,406
Pre-tax earnings	**$ 1,359**	$ 1,307	$ 10,728
Net earnings	**$ 1,078**	$ 1,092	$ 8,582
Net earnings to common	**$ 952**	$ 979	$ 8,459
Average common equity	**$ 30,078**	$ 31,762	$ 29,968

In the table above:

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

The table below presents depreciation and amortization expense by segment.

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

In the table above:

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

Segment Assets

The table below presents assets by segment.

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

Geographic Information

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

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

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

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

In the table above:

- Americas pre-tax earnings for 2023 were impacted by the impairments related to commercial real estate included within CIEs, the write-down related to GreenSky, the impairment of goodwill related to Consumer platforms and the FDIC special assessment fee.

Note 26.

Credit Concentrations

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

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

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

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

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

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

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

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

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

In the table above:

- Non-U.S. government and agency obligations primarily consists of securities issued by the governments of the U.K., Japan, Germany, France and Italy.

- Given that the firm's primary credit exposure on such transactions is to the counterparty to the transaction, the firm would be exposed to the collateral issuer only in the event of counterparty default.

Note 27.

Legal Proceedings

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

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

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

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

1MDB-Related Matters

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

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

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

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

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

Mortgage-Related Matters

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

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

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

Currencies-Related Litigation

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

Banco Espirito Santo S.A. and Oak Finance

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

Financial Advisory Services

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

Archegos-Related Matters

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

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

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

Silicon Valley Bank Matters

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

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

Underwriting Litigation

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Investment Management Services

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

Securities Lending Antitrust Litigation

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

Variable Rate Demand Obligations Antitrust Litigation

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

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

Interest Rate Swap Antitrust Litigation

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

Commodities-Related Litigation

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

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

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

U.S. Treasury Securities Litigation

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

Corporate Bonds Antitrust Litigation

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

Credit Default Swap Antitrust Litigation

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

Employment-Related Matters

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

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

Consumer Investigation and Review

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

Regulatory Investigations and Reviews and Related Litigation

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

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

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

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

Note 28.

Employee Benefit Plans

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

Defined Benefit Pension Plans and Postretirement Plans

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

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

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

Defined Contribution Plans

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

Note 29.

Employee Incentive Plans

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

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

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

Stock Incentive Plan

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

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

Restricted Stock Units

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

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

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

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

In the table above:

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

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

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

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

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

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

Overrides

The firm shares a portion of its overrides related to investment management services with approximately 800 employees. The fair value of these overrides is recognized as compensation expense over the vesting period. Such expense was $407 million for 2023, $493 million for 2022 and $547 million for 2021.

Note 30.

Parent Company

Group Inc. – Condensed Statements of Earnings

	Year Ended December		
$ in millions	**2023**	2022	2021
Revenues			
Dividends from subsidiaries and other affiliates:			
Bank	**$ 58**	$ 101	$ 16,990
Nonbank	**11,499**	6,243	15,562
Other revenues	**(1,965)**	(3,590)	529
Total non-interest revenues	**9,592**	2,754	33,081
Interest income	**18,839**	8,367	3,695
Interest expense	**21,479**	9,428	4,570
Net interest loss	**(2,640)**	(1,061)	(875)
Total net revenues	**6,952**	1,693	32,206
Operating expenses			
Compensation and benefits	**287**	328	750
Other expenses	**219**	685	1,005
Total operating expenses	**506**	1,013	1,755
Pre-tax earnings	**6,446**	680	30,451
Benefit for taxes	**(1,070)**	(1,398)	(551)
Undistributed earnings/(loss) of subsidiaries			
and other affiliates	**1,000**	9,183	(9,367)
Net earnings	**8,516**	11,261	21,635
Preferred stock dividends	**609**	497	484
Net earnings applicable to common shareholders	**$ 7,907**	$ 10,764	$ 21,151

Supplemental Disclosures:

In the condensed statements of earnings above, revenues and expenses included the following with subsidiaries and other affiliates:

- Dividends from bank subsidiaries included cash dividends of $58 million for 2023, $97 million for 2022 and $16.99 billion for 2021.
- Dividends from nonbank subsidiaries and other affiliates included cash dividends of $11.49 billion for 2023, $6.14 billion for 2022 and $15.14 billion for 2021.
- Other revenues included $(892) million for 2023, $(3.34) billion for 2022 and $(1.01) billion for 2021.

Group Inc. – Condensed Balance Sheets

	As of December	
$ in millions	**2023**	2022
Assets		
Cash and cash equivalents:		
With third-party banks	**$ 35**	$ 35
With subsidiary bank	**7**	46
Loans to and receivables from subsidiaries:		
Bank	**1,833**	3,545
Nonbank (**$4,813** and $4,825 at fair value)	**286,688**	259,402
Investments in subsidiaries and other affiliates:		
Bank	**55,164**	49,533
Nonbank	**78,591**	85,058
Trading assets (at fair value)	**3,197**	5,431
Investments (**$22,443** and $23,894 at fair value)	**79,300**	69,483
Other assets	**7,408**	6,576
Total assets	**$ 512,223**	$ 479,109
Liabilities and shareholders' equity		
Repurchase agreements with subsidiaries (at fair value)	**$ 78,776**	$ 66,839
Secured borrowings with subsidiaries	**19,233**	16,749
Payables to subsidiaries	**568**	510
Trading liabilities (at fair value)	**898**	2,544
Unsecured short-term borrowings:		
With third parties (**$4,721** and $5,002 at fair value)	**31,833**	23,823
With subsidiaries	**5,710**	4,328
Unsecured long-term borrowings:		
With third parties (**$28,966** and $22,422 at fair value)	**175,335**	185,972
With subsidiaries	**79,316**	57,565
Other liabilities	**3,649**	3,590
Total liabilities	**395,318**	361,920
Commitments, contingencies and guarantees		
Shareholders' equity		
Preferred stock	**11,203**	10,703
Common stock	**9**	9
Share-based awards	**5,121**	5,696

Group Inc. – Condensed Statements of Cash Flows

	Year Ended December		
$ in millions	**2023**	2022	2021
Cash flows from operating activities			
Net earnings	**$ 8,516**	$ 11,261	$ 21,635
Adjustments to reconcile net earnings to net			
cash provided by operating activities:			
Undistributed (earnings)/loss of			
subsidiaries and other affiliates	**(1,000)**	(9,183)	9,367
Depreciation and amortization	**13**	9	9
Deferred income taxes	**(380)**	(1,523)	(241)
Share-based compensation	**(11)**	378	335
Changes in operating assets and liabilities:			
Collateralized transactions (excluding			
secured borrowings, net)	**11,937**	66,839	–
Trading assets	**7,620**	(23,451)	(10,273)
Trading liabilities	**(1,646)**	1,428	796
Other, net	**(221)**	5,933	(5,213)
Net cash provided by operating activities	**24,828**	51,691	16,415
Cash flows from investing activities			
Purchase of property, leasehold			
improvements and equipment	**(48)**	(64)	(13)
Repayments/(issuances) of short-term loans			
to subsidiaries, net	**3,145**	2,210	(9,951)
Issuance of term loans to subsidiaries	**(25,473)**	(1,859)	(37,260)
Repayments of term loans by subsidiaries	**921**	2,311	10,059
Purchase of investments	**(25,904)**	(47,247)	(16,964)
Sales/paydowns of investments	**17,801**	3,162	10,896
Capital distributions from/(contributions to)			
subsidiaries, net	**1,205**	(5,665)	(23,978)
Net cash used for investing activities	**(28,353)**	(47,152)	(67,211)

Supplemental Disclosures:

Cash payments for interest, net of capitalized interest, were $20.53 billion for 2023, $8.54 billion for 2022 and $4.72 billion for 2021, and included $9.40 billion for 2023, $3.55 billion for 2022 and $1.33 billion for 2021 of payments to subsidiaries.

Cash payments/(refunds) for income taxes, net, were $671 million for 2023, $2.59 billion for 2022 and $3.74 billion for 2021.

Non-cash activities during the year ended December 2023:

- Group Inc. exchanged $1.42 billion of equity investment in its wholly-owned subsidiaries for loans.

Non-cash activities during the year ended December 2022:

- Group Inc. issued $1.75 billion of equity in connection with the acquisition of GreenSky. Upon closing of the transaction, GreenSky became a wholly-owned subsidiary of GS Bank USA.

Non-cash activities during the year ended December 2021:

- Group Inc. exchanged $948 million of loans for additional equity investment in its wholly-owned subsidiaries.

Common Stock Performance

The graph and table below compare the performance of an investment in the firm's common stock from December 31, 2018 (the last trading day before the firm's 2019 fiscal year) through December 31, 2023, with the S&P 500 Index (S&P 500) and the S&P 500 Financials Index (S&P 500 Financials).

CSP chart.jpg

	As of December					
	2018	2019	2020	2021	2022	**2023**
Group Inc.	$ 100.00	$ 140.46	$ 165.01	$ 243.54	$ 224.40	**$ 260.10**
S&P 500	$ 100.00	$ 131.47	$ 155.65	$ 200.29	$ 163.97	**$ 207.05**
S&P 500 Financials	$ 100.00	$ 132.09	$ 129.77	$ 175.01	$ 156.52	**$ 175.45**

The graph and table above assume $100 was invested on December 31, 2018 in each of the firm's common stock, the S&P 500 and the S&P 500 Financials, and the dividends were reinvested without payment of any commissions. The performance shown represents past performance and should not be considered an indication of future performance.

Statistical Disclosures

Distribution of Assets, Liabilities and Shareholders' Equity

The tables below present information about average balances, interest and average interest rates.

	Average Balance for the Year Ended December		
$ in millions	**2023**	2022	2021
Assets			
U.S.	**$ 129,718**	$ 151,152	$ 103,182
Non-U.S.	**127,250**	107,843	95,735
Deposits with banks	**256,968**	258,995	198,917
U.S.	**214,772**	241,968	202,841
Non-U.S.	**158,347**	169,621	148,604
Collateralized agreements	**373,119**	411,589	351,445
U.S.	**205,013**	165,331	173,498
Non-U.S.	**146,655**	123,332	136,075
Trading assets	**351,668**	288,663	309,573
U.S.	**123,828**	97,221	69,893
Non-U.S.	**15,003**	14,696	18,573
Investments	**138,831**	111,917	88,466
U.S.	**156,349**	144,781	108,032
Non-U.S.	**19,112**	22,067	21,455
Loans	**175,461**	166,848	129,487
U.S.	**85,373**	95,513	98,086
Non-U.S.	**55,043**	64,301	55,530
Other interest-earning assets	**140,416**	159,814	153,616
Interest-earning assets	**1,436,463**	1,397,826	1,231,504
Cash and due from banks	**6,372**	7,715	10,804
Other non-interest-earning assets	**109,042**	137,418	128,521
Assets	**$ 1,551,877**	$ 1,542,959	$ 1,370,829
Liabilities			
U.S.	**$ 307,686**	$ 302,678	$ 231,967
Non-U.S.	**82,321**	74,662	72,899
Interest-bearing deposits	**390,007**	377,340	304,866
U.S.	**154,341**	107,008	110,099
Non-U.S.	**93,697**	83,783	72,691

	Interest for the Year Ended December		
$ in millions	**2023**	2022	2021
Assets			
U.S.	**$ 7,074**	$ 2,793	$ 143
Non-U.S.	**3,875**	440	(167)
Deposits with banks	**10,949**	3,233	(24)
U.S.	**11,301**	3,463	(383)
Non-U.S.	**5,104**	1,005	(597)
Collateralized agreements	**16,405**	4,468	(980)
U.S.	**5,717**	3,362	2,943
Non-U.S.	**2,743**	1,725	1,773
Trading assets	**8,460**	5,087	4,716
U.S.	**3,055**	1,656	991
Non-U.S.	**801**	543	598
Investments	**3,856**	2,199	1,589
U.S.	**13,332**	7,967	4,423
Non-U.S.	**1,573**	1,092	896
Loans	**14,905**	9,059	5,319
U.S.	**8,266**	3,236	1,201
Non-U.S.	**5,674**	1,742	299
Other interest-earning assets	**13,940**	4,978	1,500
Interest-earning assets	**$ 68,515**	$ 29,024	$ 12,120
Liabilities			
U.S.	**$ 13,658**	$ 4,959	$ 1,098
Non-U.S.	**3,352**	864	205
Interest-bearing deposits	**17,010**	5,823	1,303
U.S.	**8,750**	2,027	146
Non-U.S.	**3,955**	781	(146)
Collateralized financings	**12,705**	2,808	–
U.S.	**969**	872	661
Non-U.S.	**1,484**	1,051	1,001
Trading liabilities	**2,453**	1,923	1,662
U.S.	**1,200**	408	476
Non-U.S.	**122**	133	51
Short-term borrowings	**1,322**	541	527
U.S.	**10,838**	5,570	3,139
Non-U.S.	**246**	146	92
Long-term borrowings	**11,084**	5,716	3,231
U.S.	**11,228**	2,356	(897)
Non-U.S.	**6,362**	2,179	(176)

	Average Rate for the Year Ended December		
	2023	2022	2021
Assets			
U.S.	**5.45 %**	1.85 %	0.14 %
Non-U.S.	**3.05 %**	0.41 %	(0.17) %
Deposits with banks	**4.26 %**	1.25 %	(0.01) %
U.S.	**5.26 %**	1.43 %	(0.19) %
Non-U.S.	**3.22 %**	0.59 %	(0.40) %
Collateralized agreements	**4.40 %**	1.09 %	(0.28) %
U.S.	**2.79 %**	2.03 %	1.70 %
Non-U.S.	**1.87 %**	1.40 %	1.30 %
Trading assets	**2.41 %**	1.76 %	1.52 %
U.S.	**2.47 %**	1.70 %	1.42 %
Non-U.S.	**5.34 %**	3.69 %	3.22 %
Investments	**2.78 %**	1.96 %	1.80 %
U.S.	**8.53 %**	5.50 %	4.09 %
Non-U.S.	**8.23 %**	4.95 %	4.18 %
Loans	**8.49 %**	5.43 %	4.11 %
U.S.	**9.68 %**	3.39 %	1.22 %
Non-U.S.	**10.31 %**	2.71 %	0.54 %
Other interest-earning assets	**9.93 %**	3.11 %	0.98 %
Interest-earning assets	**4.77 %**	2.08 %	0.98 %
Liabilities			
U.S.	**4.44 %**	1.64 %	0.47 %
Non-U.S.	**4.07 %**	1.16 %	0.28 %
Interest-bearing deposits	**4.36 %**	1.54 %	0.43 %
U.S.	**5.67 %**	1.89 %	0.13 %
Non-U.S.	**4.22 %**	0.93 %	(0.20) %
Collateralized financings	**5.12 %**	1.47 %	0.00 %
U.S.	**1.56 %**	1.08 %	0.98 %
Non-U.S.	**1.95 %**	1.26 %	1.32 %
Trading liabilities	**1.77 %**	1.17 %	1.16 %
U.S.	**2.51 %**	1.19 %	1.49 %
Non-U.S.	**0.45 %**	0.46 %	0.15 %
Short-term borrowings	**1.76 %**	0.86 %	0.80 %
U.S.	**5.49 %**	2.51 %	1.45 %
Non-U.S.	**0.54 %**	0.39 %	0.31 %
Long-term borrowings	**4.56 %**	2.20 %	1.31 %
U.S.	**7.49 %**	1.42 %	(0.64) %
Non-U.S.	**6.70 %**	2.22 %	(0.20) %
Other interest-bearing liabilities	**7.19 %**	1.72 %	(0.48) %
Interest-bearing liabilities	**4.64 %**	1.62 %	0.48 %

- Collateralized financings included $198.26 billion of repurchase agreements and $49.78 billion of securities loaned for 2023, $150.23 billion of repurchase agreements and $40.56 billion of securities loaned for 2022, and $145.68 billion of repurchase agreements and $37.11 billion of securities loaned for 2021.
- Substantially all of the other interest-bearing liabilities consists of certain payables to customers and counterparties.
- Interest rates for borrowings include the effects of interest rate swaps accounted for as hedges.
- Loans exclude loans held for sale that are accounted for at the lower of cost or fair value. Such loans are included within other interest-earning assets.
- Short- and long-term borrowings include both secured and unsecured borrowings.

Changes in Net Interest Income, Volume and Rate Analysis

The tables below present the effect on net interest income of volume and rate changes. In this analysis, changes due to volume/rate variance have been allocated to volume.

	Year Ended December 2023 versus December 2022		
	Increase (decrease) due to change in:		
$ in millions	**Volume**	**Rate**	**Net Change**
Interest-earning assets			
U.S.	**$ (1,169)**	**$ 5,450**	**$ 4,281**
Non-U.S.	**591**	**2,844**	**3,435**
Deposits with banks	**(578)**	**8,294**	**7,716**
U.S.	**(1,431)**	**9,269**	**7,838**
Non-U.S.	**(363)**	**4,462**	**4,099**
Collateralized agreements	**(1,794)**	**13,731**	**11,937**
U.S.	**1,107**	**1,248**	**2,355**
Non-U.S.	**436**	**582**	**1,018**
Trading assets	**1,543**	**1,830**	**3,373**
U.S.	**656**	**743**	**1,399**
Non-U.S.	**16**	**242**	**258**
Investments	**672**	**985**	**1,657**
U.S.	**986**	**4,379**	**5,365**
Non-U.S.	**(243)**	**724**	**481**
Loans	**743**	**5,103**	**5,846**
U.S.	**(982)**	**6,012**	**5,030**
Non-U.S.	**(954)**	**4,886**	**3,932**
Other interest-earning assets	**(1,936)**	**10,898**	**8,962**
Change in interest income	**(1,350)**	**40,841**	**39,491**
Interest-bearing liabilities			

	Year Ended December 2022 versus December 2021		
	Increase (decrease) due to change in:		
$ in millions	Volume	Rate	Net Change
Interest-earning assets			
U.S.	$ 886	$ 1,764	$ 2,650
Non-U.S.	49	558	607
Deposits with banks	935	2,322	3,257
U.S.	560	3,286	3,846
Non-U.S.	125	1,477	1,602
Collateralized agreements	685	4,763	5,448
U.S.	(166)	585	419
Non-U.S.	(178)	130	(48)
Trading assets	(344)	715	371
U.S.	465	200	665
Non-U.S.	(143)	88	(55)
Investments	322	288	610
U.S.	2,022	1,522	3,544
Non-U.S.	30	166	196
Loans	2,052	1,688	3,740
U.S.	(87)	2,122	2,035
Non-U.S.	238	1,205	1,443
Other interest-earning assets	151	3,327	3,478
Change in interest income	3,801	13,103	16,904
Interest-bearing liabilities			
U.S.	1,159	2,702	3,861
Non-U.S.	20	639	659
Interest-bearing deposits	1,179	3,341	4,520
U.S.	(59)	1,940	1,881
Non-U.S.	103	824	927
Collateralized financings	44	2,764	2,808
U.S.	142	69	211
Non-U.S.	99	(49)	50
Trading liabilities	241	20	261
U.S.	29	(97)	(68)
Non-U.S.	(26)	108	82
Short-term borrowings	3	11	14
U.S.	119	2,312	2,431
Non-U.S.	31	23	54
Long-term	150	2,335	2,485

Deposits

The table below presents information about interest-bearing deposits.

	Year Ended December	
$ in millions	**2023**	2022
Average balances		
U.S.		
Savings and demand	**$ 241,356**	$ 231,693
Time	**66,330**	70,985
Total U.S.	**307,686**	302,678
Non-U.S.		
Demand	**57,506**	45,066
Time	**24,815**	29,596
Total non-U.S.	**82,321**	74,662
Total	**$ 390,007**	$ 377,340
Average interest rates		
U.S.		
Savings and demand	**4.57 %**	1.69 %
Time	**3.97 %**	1.48 %
Total U.S.	**4.44 %**	1.64 %
Non-U.S.		
Demand	**3.99 %**	1.20 %
Time	**4.26 %**	1.09 %
Total non-U.S.	**4.07 %**	1.16 %
Total	**4.36 %**	1.54 %

In the table above, deposits are classified as U.S. and non-U.S. based on the location of the entity in which such deposits are held.

The amount of deposits in U.S. offices held by non-U.S. depositors was $10.34 billion as of December 2023 and $6.39 billion as of December 2022.

The amount of uninsured deposits in U.S. offices was $111.60 billion as of December 2023 and $128.72 billion as of December 2022. The amount of uninsured deposits in non-U.S. offices was $69.30 billion as of December 2023 and $41.33 billion as of December 2022.

The table below presents uninsured time deposits by maturity.

	As of December 2023	
$ in millions	**U.S.**	**Non-U.S.**
3 months or less	**$ 3,667**	**$ 18,133**
3 to 6 months	**2,253**	**8,763**
6 to 12 months	**2,534**	**2,646**
Greater than 12 months	**411**	**1,775**
Total	**$ 8,865**	**$ 31,317**

In the table above:

- All U.S. time deposits were in accounts eligible for FDIC insurance and non-U.S. time deposits include deposits in accounts eligible for insurance in their local jurisdictions, as well as deposits in uninsured accounts.
- The insurance limit is allocated between time and other deposits on a pro-rata basis for account holders who have both time and other deposits that, in aggregate, exceed the insurance limit.

Loan Portfolio

The table below presents information about gross loans.

	As of December			
$ in millions	**2023**		2022	
Corporate	**$ 35,874**	**19 %**	$ 40,135	22 %
Commercial real estate	**26,028**	**14 %**	28,879	16 %
Residential real estate	**25,388**	**13 %**	23,035	12 %
Securities-based	**14,621**	**8 %**	16,671	9 %
Other collateralized	**62,225**	**33 %**	51,702	28 %
Consumer:				
Installment	**3,298**	**2 %**	6,326	3 %
Credit cards	**19,361**	**10 %**	15,820	9 %
Other	**1,613**	**1 %**	2,261	1 %
Total	**$ 188,408**	**100 %**	$ 184,829	100 %

Maturities and Interest Rates. The table below presents gross loans by tenor.

	As of December 2023				
	1 year	More than 1 year to	More than 5 years to	More than	
$ in millions	or less	5 years	15 years	15 years	Total
Corporate	$ 2,813	$ 28,853	$ 4,207	$ 1	$ 35,874
Commercial real estate	4,571	19,663	1,791	3	26,028
Residential real estate	3,522	10,493	127	11,246	25,388
Securities-based	14,608	13	–	–	14,621
Other collateralized	23,660	36,486	1,623	456	62,225
Consumer:					
Installment	70	803	2,334	91	3,298
Credit cards	19,361	–	–	–	19,361
Other	740	455	416	2	1,613
Total	$ 69,345	$ 96,766	$ 10,498	$ 11,799	$ 188,408

The table below presents the gross loans by tenor and for loans with tenors greater than one year, the distributions of such loans between fixed and floating interest rates.

	As of December 2023			
	1 year	More than one year		
$ in millions	or less	Fixed-rate	Floating-rate	Total
Corporate	$ 2,813	$ 345	$ 32,716	$ 35,874
Commercial real estate	4,571	1,274	20,183	26,028
Residential real estate	3,522	11,937	9,929	25,388
Securities-based	14,608	13	–	14,621
Other collateralized	23,660	850	37,715	62,225
Consumer:				
Installment	70	3,228	–	3,298
Credit cards	19,361	–	–	19,361
Other	740	377	496	1,613
Total	$ 69,345	$ 18,024	$ 101,039	$ 188,408

Allowance for Loan Losses

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

	As of December	
$ in millions	**2023**	2022
Corporate	**$ 1,307**	$ 1,535
Commercial real estate	**765**	572
Residential real estate	**129**	122
Other collateralized	**340**	264
Other	**35**	69
Wholesale	**2,576**	2,562
Installment	**23**	831
Credit cards	**2,451**	2,150
Consumer	**2,474**	2,981
Total	**$ 5,050**	$ 5,543

The table below presents information about the net charge-off ratio for loans accounted for at amortized cost.

$ in millions	Net charge-offs	Average balance	Net charge-off ratio
Year Ended December 2023			
Wholesale	**$ 400**	**$ 151,834**	**0.3 %**
Installment	**86**	**3,721**	**2.3 %**
Credit cards	**1,062**	**17,028**	**6.2 %**
Consumer	**1,148**	**20,749**	**5.5 %**
Total	**$ 1,548**	**$ 172,583**	**0.9 %**
Year Ended December 2022			
Wholesale	$ 253	$ 144,129	0.2 %
Installment	46	4,711	1.0 %
Credit cards	427	11,984	3.6 %
Consumer	473	16,695	2.8 %
Total	$ 726	$ 160,824	0.5 %

In the table above, the net charge-off ratio is calculated by dividing the net charge-offs by average gross loans accounted for at amortized cost. Net charge-offs for wholesale loans were primarily related to corporate loans for both 2023 and 2022.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

There were no changes in or disagreements with accountants on accounting and financial disclosure during the last two years.

Item 9A. Controls and Procedures

As of the end of the period covered by this report, an evaluation was carried out by our management, with the participation of our Chief Executive Officer and Chief Financial Officer, of the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act). Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that these disclosure controls and procedures were effective as of the end of the period covered by this report. In addition, no change in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) occurred during the fourth quarter of our year ended December 31, 2023 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control over Financial Reporting and the Report of Independent Registered Public Accounting Firm are set forth in Part II, Item 8 of this Form 10-K.

Item 9B. Other Information

Rule 10b5-1 Trading Plans

During the quarter ended December 2023, no directors or executive officers entered into, modified or terminated, contracts, instructions or written plans for the sale or purchase of Group Inc.'s securities that were intended to satisfy the affirmative defense conditions of Rule 10b5-1 or that constituted non-Rule 10b5-1 trading arrangements (as defined in Item 408 of Regulation S-K).

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information about our executive officers is included in "Business — Information about our Executive Officers" in Part I, Item 1 of this Form 10-K. Information about our directors, including our audit committee and audit committee financial experts and the procedures by which shareholders can recommend director nominees, and our executive officers will be in our definitive Proxy Statement for our 2024 Annual Meeting of Shareholders, which will be filed within 120 days of the end of 2023 (2024 Proxy Statement) and is incorporated in this Form 10-K by reference. Information about our Code of Business Conduct and Ethics, which applies to our senior financial officers, is included in "Business — Available Information" in Part I, Item 1 of this Form 10-K.

Item 11. Executive Compensation

Information relating to our executive officer and director compensation and the compensation committee of the Board will be in the 2024 Proxy Statement and is incorporated in this Form 10-K by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information relating to security ownership of certain beneficial owners of our common stock and information relating to the security ownership of our management will be in the 2024 Proxy Statement and is incorporated in this Form 10-K by reference.

The table below presents information as of December 31, 2023 regarding securities to be issued pursuant to outstanding restricted stock units (RSUs) and securities remaining available for issuance under our equity compensation plans that were in effect during 2023.

Plan Category	Securities to be Issued Upon Exercise of Outstanding Options and Rights (a)	Weighted Average Exercise Price of Outstanding Options (b)	Securities Available For Future Issuance Under Equity Compensation Plans (c)
Equity compensation plans:			
Approved by security holders	**20,444,953**	**N/A**	**58,360,508**
Not approved by security holders	–	–	–
Total	**20,444,953**		**58,360,508**

In the table above:

- Securities to be Issued Upon Exercise of Outstanding Options and Rights includes 20,444,953 shares that may be issued pursuant to outstanding RSUs. These awards are subject to vesting and other conditions to the extent set forth in the respective award agreements, and the underlying shares will be delivered net of any required tax withholding. As of December 31, 2023, there were no outstanding options.
- Shares underlying RSUs are deliverable without the payment of any consideration, and therefore the weighted average exercise price is not applicable for these awards.
- Securities Available For Future Issuance Under Equity Compensation Plans represents shares remaining to be issued under our current stock incentive plan (SIP), excluding shares reflected in column (a). If any shares of common stock underlying awards granted under our current SIP, our SIP adopted in 2018, our SIP adopted in 2015 or our SIP adopted in 2013 are not delivered due to forfeiture, termination or cancellation or are surrendered or withheld, those shares will again become available to be delivered under our current SIP. Shares available for grant are also subject to adjustment for certain changes in corporate structure as permitted under our current SIP.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Information regarding certain relationships and related transactions and director independence will be in the 2024 Proxy Statement and is incorporated in this Form 10-K by reference.

Item 14. Principal Accountant Fees and Services

Information regarding principal accountant fees and services will be in the 2024 Proxy Statement and is incorporated in this Form 10-K by reference.

PART IV

Item 15. Exhibit and Financial Statement Schedules

(a) Documents filed as part of this Report:

1. Consolidated Financial Statements

The consolidated financial statements required to be filed in this Form 10-K are included in Part II, Item 8 hereof.

2. Exhibits

2.1 Plan of Incorporation (incorporated by reference to Exhibit 2.1 to the Registrant's Registration Statement on Form S-1 (No. 333-74449)).

3.1 Restated Certificate of Incorporation of The Goldman Sachs Group, Inc., amended as of September 15, 2023 (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K, filed on September 18, 2023).

3.2 Amended and Restated By-Laws of The Goldman Sachs Group, Inc., amended as of November 3, 2023 (incorporated by reference to Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2023).

4.1 Description of The Goldman Sachs Group, Inc.'s Securities registered pursuant to Section 12 of the Securities Exchange Act of 1934.

4.2 Indenture, dated as of May 19, 1999, between The Goldman Sachs Group, Inc. and The Bank of New York, as trustee (incorporated by reference to Exhibit 6 to the Registrant's Registration Statement on Form 8-A, filed on June 29, 1999).

4.3 Subordinated Debt Indenture, dated as of February 20, 2004, between The Goldman Sachs Group, Inc. and The Bank of New York, as trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Annual Report on Form 10-K for the fiscal year ended November 28, 2003).

4.4 Warrant Indenture, dated as of February 14, 2006, between The Goldman Sachs Group, Inc. and The Bank of New York, as trustee (incorporated by reference to Exhibit 4.34 to the Registrant's Post-Effective Amendment No. 3 to Form S-3, filed on March 1, 2006).

4.5 Senior Debt Indenture, dated as of December 4, 2007, among GS Finance Corp., as issuer, The Goldman Sachs Group, Inc., as guarantor, and The Bank of New York, as trustee (incorporated by reference to Exhibit 4.69 to the Registrant's Post-Effective Amendment No. 10 to Form S-3, filed on December 4, 2007).

4.6 Senior Debt Indenture, dated as of July 16, 2008, between The Goldman Sachs Group, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to Exhibit 4.82 to the Registrant's Post-Effective Amendment No. 11 to Form S-3 (No. 333-130074), filed on July 17, 2008).

4.7 Fourth Supplemental Indenture, dated as of December 31, 2016, between The Goldman Sachs Group, Inc. and The Bank of New York Mellon, as trustee, with respect to the Senior Debt Indenture, dated as of July 16, 2008 (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed on January 6, 2017).

4.8 Senior Debt Indenture, dated as of October 10, 2008, among GS Finance Corp., as issuer, The Goldman Sachs Group, Inc., as guarantor, and The Bank of New York Mellon, as trustee (incorporated by reference to Exhibit 4.70 to the Registrant's Registration Statement on Form S-3 (No. 333-154173), filed on October 10, 2008).

4.9 First Supplemental Indenture, dated as of February 20, 2015, among GS Finance Corp., as issuer, The Goldman Sachs Group, Inc., as guarantor, and The Bank of New York Mellon, as trustee, with respect to the Senior Debt Indenture, dated as of October 10, 2008 (incorporated by reference to Exhibit 4.7 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2014).

4.10 Fourth Supplemental Indenture, dated as of August 21, 2018, among GS Finance Corp., as issuer, The Goldman Sachs Group, Inc., as guarantor, and The Bank of New York Mellon, as trustee, with respect to the Senior Debt Indenture, dated as of October 10, 2008 (incorporated by reference to Exhibit 4.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2018).

4.11 Ninth Supplemental Subordinated Debt Indenture, dated as of May 20, 2015, between The Goldman Sachs Group, Inc. and The Bank of New York Mellon, as trustee, with respect to the Subordinated Debt Indenture, dated as of February 20, 2004 (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed on May 22, 2015).

4.12 Tenth Supplemental Subordinated Debt Indenture, dated as of July 7, 2017, between The Goldman Sachs Group, Inc. and The Bank of New York Mellon, as trustee, with respect to the Subordinated Debt Indenture, dated as of February 20, 2004 (incorporated by reference to Exhibit 4.89 to the Registrant's Registration Statement on Form S-3 (No. 333-219206), filed on July 10, 2017).

4.13 Seventh Supplemental Indenture, dated as of July 1, 2020, among GS Finance Corp., as issuer, The Goldman Sachs Group, Inc., as guarantor, and The Bank of New York Mellon, as trustee, with respect to the Senior Debt Indenture, dated as of October 10, 2008 (incorporated by reference to Exhibit 4.69 to the Registrant's Registration Statement on Form S-3 (No. 333-239610), filed on July 1, 2020).

4.14 Eighth Supplemental Indenture, dated as of October 14, 2020, among GS Finance Corp., as issuer, The Goldman Sachs Group, Inc., as guarantor, and The Bank of New York Mellon, as trustee, with respect to the Senior Debt Indenture, dated as of October 10, 2008 (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed on October 14, 2020).

Certain instruments defining the rights of holders of long-term debt securities of the Registrant and its subsidiaries are omitted pursuant to Item 601(b)(4)(iii) of Regulation S-K. The Registrant hereby undertakes to furnish to the SEC, upon request, copies of any such instruments.

10.1 The Goldman Sachs Amended and Restated Stock Incentive Plan (2021) (incorporated by reference to Annex C to the Registrant's Definitive Proxy Statement on Schedule 14A, filed on March 19, 2021). †

10.2 The Goldman Sachs Partner Compensation Plan (incorporated by reference to Exhibit 10.18 to the Registrant's Registration Statement on Form S-1 (No. 333-74449)). †

10.3 The Goldman Sachs Amended and Restated Restricted Partner Compensation Plan (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended February 24, 2006). †

10.4 Form of Employment Agreement for Participating Managing Directors (incorporated by reference to Exhibit 10.19 to the Registrant's Registration Statement on Form S-1 (No. 333-75213)). †

10.5 Form of Agreement Relating to Noncompetition and Other Covenants (incorporated by reference to Exhibit 10.20 to the Registrant's Registration Statement on Form S-1 (No. 333-75213)). †

10.6 Amended and Restated Shareholders' Agreement, effective as of December 31, 2019, among The Goldman Sachs Group, Inc. and various parties (incorporated by reference to Exhibit 10.6 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2019).

10.7 Form of Amendment, dated November 27, 2004, to Agreement Relating to Noncompetition and Other Covenants, dated May 7, 1999 (incorporated by reference to Exhibit 10.32 to the Registrant's Annual Report on Form 10-K for the fiscal year ended November 26, 2004). †

10.8 Form of Non-Employee Director RSU Award Agreement (pre-2015) (incorporated by reference to Exhibit 10.21 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2014). †

10.9 Ground Lease, dated August 23, 2005, between Battery Park City Authority d/b/a/ Hugh L. Carey Battery Park City Authority, as Landlord, and Goldman Sachs Headquarters LLC, as Tenant (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K, filed on August 26, 2005).

10.10 General Guarantee Agreement, dated January 30, 2006, made by The Goldman Sachs Group, Inc. relating to certain obligations of Goldman Sachs & Co. LLC (incorporated by reference to Exhibit 10.45 to the Registrant's Annual Report on Form 10-K for the fiscal year ended November 25, 2005).

10.11 Goldman Sachs & Co. LLC Executive Life Insurance Policy and Certificate with Metropolitan Life Insurance Company for Participating Managing Directors (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended August 25, 2006). †

10.12 Form of Goldman Sachs & Co. LLC Executive Life Insurance Policy with Pacific Life & Annuity Company for Participating Managing Directors, including policy specifications and form of restriction on Policy Owner's Rights (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q for the period ended August 25, 2006). †

10.13 Form of Second Amendment, dated November 25, 2006, to Agreement Relating to Noncompetition and Other Covenants, dated May 7, 1999, as amended effective November 27, 2004 (incorporated by reference to Exhibit 10.51 to the Registrant's Annual Report on Form 10-K for the fiscal year ended November 24, 2006). †

10.14 Description of PMD Retiree Medical Program (incorporated by reference to Exhibit 10.20 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021). †

10.15 General Guarantee Agreement, dated December 1, 2008, made by The Goldman Sachs Group, Inc. relating to certain obligations of Goldman Sachs Bank USA (incorporated by reference to Exhibit 4.80 to the Registrant's Post-Effective Amendment No. 2 to Form S-3, filed on March 19, 2009).

10.16 Form of One-Time RSU Award Agreement (pre-2015) (incorporated by reference to Exhibit 10.32 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2014). †

10.17 Amendments to Certain Non-Employee Director Equity Award Agreements (incorporated by reference to Exhibit 10.69 to the Registrant's Annual Report on Form 10-K for the fiscal year ended November 28, 2008). †

10.18 Form of Year-End RSU Award Agreement (not fully vested) (pre-2015) (incorporated by reference to Exhibit 10.36 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2014). †

10.19 Form of Year-End RSU Award Agreement (fully vested) (pre-2015) (incorporated by reference to Exhibit 10.37 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2014). †

10.20 Form of Year-End RSU Award Agreement (Base and/or Supplemental) (pre-2015) (incorporated by reference to Exhibit 10.38 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2014). †

10.21 Form of Year-End Restricted Stock Award Agreement (fully vested) (pre-2015) (incorporated by reference to Exhibit 10.41 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2013). †

10.22 Form of Year-End Restricted Stock Award Agreement (Base and/or Supplemental) (pre-2015) (incorporated by reference to Exhibit 10.41 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2014). †

10.23 Form of Fixed Allowance RSU Award Agreement (pre-2015) (incorporated by reference to Exhibit 10.43 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2014). †

10.24 Form of Deed of Gift (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2010). †

10.25 The Goldman Sachs Long-Term Performance Incentive Plan, dated December 17, 2010 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K, filed on December 23, 2010). †

10.26 Form of Performance-Based Restricted Stock Unit Award Agreement (pre-2015) (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K, filed on December 23, 2010). †

10.27 Form of Performance-Based Option Award Agreement (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K, filed on December 23, 2010). †

10.28 Form of Performance-Based Cash Compensation Award Agreement (pre-2015) (incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K, filed on December 23, 2010). †

10.29 Amended and Restated General Guarantee Agreement, dated November 21, 2011, made by The Goldman Sachs Group, Inc. relating to certain obligations of Goldman Sachs Bank USA (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed on November 21, 2011).

10.30 Form of Aircraft Time Sharing Agreement (incorporated by reference to Exhibit 10.61 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2011). †

10.31 Form of Non-Employee Director RSU Award Agreement. †

10.32 Form of Non-Employee Director RSU Award Agreement (Cash-Settled)

10.33 Form of One-Time/Year-End RSU Award Agreement. †

10.34 Form of Year-End RSU Award Agreement (not fully vested). †

10.35 Form of Year-End RSU Award Agreement (fully vested). †

10.36 Form of Year-End RSU Award Agreement (Base (not fully vested) and/or Supplemental). †

10.37 Form of Year-End Short-Term RSU Award Agreement. †

10.38 Form of Year-End Restricted Stock Award Agreement (incorporated by reference to Exhibit 10.46 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2020). †

10.39 Form of Year-End Restricted Stock Award Agreement (fully vested) (incorporated by reference to Exhibit 10.53 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2017). †

10.40 Form of Year-End Short-Term Restricted Stock Award Agreement (incorporated by reference to Exhibit 10.57 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2015). †

10.41 Form of Fixed Allowance RSU Award Agreement. †

10.42 Form of Fixed Allowance Restricted Stock Award Agreement. †

10.43 Form of Fixed Allowance Deferred Cash Award Agreement (incorporated by reference to Exhibit 10.59 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2015). †

10.44 Form of Performance-Based Restricted Stock Unit Award Agreement (fully vested). †

10.45 Form of Performance-Based Restricted Stock Unit Award Agreement (not fully vested). †

10.46 Form of Performance-Based Cash Compensation Award Agreement (incorporated by reference to Exhibit 10.61 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2015). †

10.47 Form of Signature Card for Equity Awards. †

10.48 Amended and Restated General Guarantee Agreement, dated September 28, 2018, made by The Goldman Sachs Group, Inc. relating to certain obligations of Goldman Sachs Bank USA (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed on September 28, 2018).

10.49 Amended and Restated General Guarantee Agreement, dated September 28, 2018, made by The Goldman Sachs Group, Inc. relating to certain obligations of Goldman Sachs & Co. LLC (incorporated by reference to Exhibit 99.1 to the Registrant's Current Report on Form 8-K, filed on September 28, 2018).

10.50 Lease, dated August 17, 2018, between Farringdon Street Partners Limited and Farringdon Street (Nominee) Limited, as Landlord, and Goldman Sachs International, as Tenant (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2018).

21.1 List of significant subsidiaries of The Goldman Sachs Group, Inc.

22.1 Issuers of guaranteed securities (incorporated by reference to Exhibit 22.1 to the Registrant's Post-Effective Amendment No. 1 to Form S-3, filed on February 18, 2021).

23.1 Consent of Independent Registered Public Accounting Firm.

31.1 Rule 13a-14(a) Certifications.

32.1 Section 1350 Certifications (This information is furnished and not filed for purposes of Sections 11 and 12 of the Securities Act of 1933 and Section 18 of the Securities Exchange Act of 1934).

97.1 The Goldman Sachs Group, Inc. Clawback Policy, effective as of December 1, 2023.

101 Pursuant to Rules 405 and 406 of Regulation S-T, the following information is formatted in iXBRL (Inline eXtensible Business Reporting Language): (i) the Consolidated Statements of Earnings for the years ended December 31, 2023, December 31, 2022 and December 31, 2021, (ii) the Consolidated Statements of Comprehensive Income for the years ended December 31, 2023, December 31, 2022 and December 31, 2021, (iii) the Consolidated Balance Sheets as of December 31, 2023 and December 31, 2022, (iv) the Consolidated Statements of Changes in Shareholders' Equity for the years ended December 31, 2023, December 31, 2022 and December 31, 2021, (v) the Consolidated Statements of Cash Flows for the years ended December 31, 2023, December 31, 2022 and December 31, 2021, (vi) the notes to the Consolidated Financial Statements and (vii) the cover page.

104 Cover Page Interactive Data File (formatted in iXBRL in Exhibit 101).

† This exhibit is a management contract or a compensatory plan or arrangement.

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.

THE GOLDMAN SACHS GROUP, INC.

By:	/s/		Denis P. Coleman III
Name:			Denis P. Coleman III
Title:			Chief Financial Officer
Date:			February 22, 2024

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 and on the dates indicated.

By:	/s/		David Solomon
Name:			David Solomon
Title:			Director, Chairman and Chief Executive
			Officer (Principal Executive Officer)
Date:			February 22, 2024
By:	/s/		M. Michele Burns
Name:			M. Michele Burns
Title:			Director
Date:			February 22, 2024
By:	/s/		Mark A. Flaherty
Name:			Mark A. Flaherty
Title:			Director
Date:			February 22, 2024
By:	/s/		Kimberley D. Harris
Name:			Kimberley D. Harris
Title:			Director
Date:			February 22, 2024
By:	/s/		Kevin R. Johnson
Name:			Kevin R. Johnson
Title:			Director
Date:			February 22, 2024
By:	/s/		Ellen J. Kullman
Name:			Ellen J. Kullman
Title:			Director
Date:			February 22, 2024

By:	/s/		Lakshmi N. Mittal
Name:			Lakshmi N. Mittal
Title:			Director
Date:			February 22, 2024
By:	/s/		Thomas Montag
Name:			Thomas Montag
Title:			Director
Date:			February 22, 2024
By:	/s/		Adebayo O. Ogunlesi
Name:			Adebayo O. Ogunlesi
Title:			Director
Date:			February 22, 2024
By:	/s/		Peter Oppenheimer
Name:			Peter Oppenheimer
Title:			Director
Date:			February 22, 2024
By:	/s/		Jan E. Tighe
Name:			Jan E. Tighe
Title:			Director
Date:			February 22, 2024
By:	/s/		Jessica R. Uhl
Name:			Jessica R. Uhl
Title:			Director
Date:			February 22, 2024
By:	/s/		David A. Viniar
Name:			David A. Viniar
Title:			Director
Date:			February 22, 2024
By:	/s/		Denis P. Coleman III
Name:			Denis P. Coleman III
Title:			Chief Financial Officer
			(Principal Financial Officer)
Date:			February 22, 2024
By:	/s/		Sheara J. Fredman
Name:			Sheara J. Fredman
Title:			Chief Accounting Officer
			(Principal Accounting Officer)
Date:			February 22, 2024