Financial Disclosure Document dated 26 March 2024

Goldman Sachs

Goldman Sachs International

(incorporated with unlimited liability in England, authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority)

as Issuer

Goldman Sachs (Asia) L.L.C.

(incorporated with limited liability in the State of Delaware of the United States of America, registered under the Securities and Futures Ordinance of Hong Kong for types 1, 4, 5, 6 and 9 regulated activities)

as Product Arranger and Market Agent

Unlisted
Equity Linked Investment Programme ("Programme")

Our unlisted equity linked investments ("ELIs") issued or to be issued under our Programme are not equivalent to time deposits and may not be capital protected. They are unlisted structured investment products embedded with derivatives. You may sustain a total loss in your investment.

If you are in any doubt about any of the contents of our ELIs offering documents, you should seek independent professional advice.

The Securities and Futures Commission ("SFC") has authorised the issue of this financial disclosure document based on the standard format submitted under Section 105(1) of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong). The SFC takes no responsibility for the contents of this financial disclosure document, makes no representation as to its accuracy or completeness and expressly disclaims any liability whatsoever for any loss howsoever arising from or in reliance upon the whole or any part of the contents of this financial disclosure document. The SFC's authorisation does not imply the SFC's endorsement or recommendation of our ELIs referred to in this financial disclosure document.

IMPORTANT

If you are in any doubt about any of the contents of this document, you should obtain independent professional advice.

This financial disclosure document sets out our financial information. No ELIs are being offered by this document alone. Before you decide whether to invest in our ELIs, you should read this financial disclosure document (as amended and supplemented from time to time), our programme memorandum dated 15 December 2023 (as amended and supplemented from time to time), the relevant product booklet (as amended and supplemented from time to time) and the relevant indicative term sheet (together, our "**ELI offering documents**") and ensure you fully understand and are willing to assume the risks associated with such an investment. Copies of all our ELI offering documents will be available (free of charge) from the distributor(s) set out in the relevant indicative term sheet.

Our ELIs are complex products. You should exercise caution in relation to our ELIs. You are warned that the market value of our ELIs may fluctuate and you may sustain a total loss of your investment. You should therefore ensure that you understand the nature of our ELIs and carefully study the risk warnings set out in our ELI offering documents and, where necessary, seek independent professional advice, before you decide whether to invest in our ELIs.

Our ELI offering documents include particulars given in compliance with the Code on Unlisted Structured Investment Products (the "**Code**") issued by the SFC for the purpose of giving information with regard to us, Goldman Sachs International (being the issuer), Goldman Sachs (Asia) L.L.C. (being the product arranger), our Programme, and our ELIs. We and the product arranger collectively and individually accept full responsibility for the contents of, and the completeness and accuracy of the information contained in our ELI offering documents and confirm, having made all reasonable enquiries, that to the best of our and their knowledge and belief there is no untrue or misleading statement, or other facts the omission of which would make any statement herein untrue or misleading.

We (as the issuer) confirm that we meet the eligibility requirements applicable to issuers and the product arranger confirms that it meets the eligibility requirements applicable to product arrangers under the Code. We (as the issuer) confirm that our ELIs comply with the Code.

Our ELIs constitute our general, unsecured and unsubordinated contractual obligations and of no other person. If you purchase our ELIs, you are relying upon our creditworthiness and have no rights under the terms of our ELIs against the issuer of the reference stock(s).

None of our ELI offering documents constitute a prospectus under the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32 of the Laws of Hong Kong).

Our financial year runs from 1 January to 31 December.

Our auditors, PricewaterhouseCoopers LLP, Chartered Accountants and Statutory Auditors of 1 Embankment Place, London, WC2N 6RH, United Kingdom, have given and have not withdrawn their written consent to the inclusion of their report dated 22 March 2024 in this financial disclosure document and/or the references to their names in this financial disclosure document, in the form and context in which they are included. Their report was not prepared for incorporation in this financial disclosure document. We confirm that the auditors were engaged by us as our independent auditors to audit our financial statements for the year ended 31 December 2023. Our auditors do not have any shareholding in us. We are not aware of, to the best of our knowledge, any conflict of interests for the auditors in the preparation of the auditors' report.

All references to "we" in this financial disclosure document mean Goldman Sachs International as the issuer of the ELIs, and the words "our" and "us" shall be construed accordingly. All references to "Hong Kong" in this financial disclosure document are to the Hong Kong Special Administrative Region of the People's Republic of China.

A Chinese version of this financial disclosure document is available from your distributor(s). 本財務披露文件[增編]的中文版本可向 閣下的分銷商索取。

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AUDITED FINANCIAL STATEMENTS OF GOLDMAN SACHS INTERNATIONAL FOR THE YEAR ENDED 31 DECEMBER 2023

This section sets out the audited financial statements of Goldman Sachs International for the year ended 31 December 2023 (the "**Audited Financial Statements**"). References to page numbers in this section are to the page numbers of the Audited Financial Statements.

Annual Report

December 31, 2023

Goldman Sachs International (unlimited company)

Company Number: 02263951

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Introduction

Goldman Sachs International (GSI or the company) delivers a broad range of financial services to clients located worldwide. The company also operates a number of branches and representative offices across Europe, the Middle East and Africa (EMEA) to provide financial services to clients in those regions.

The company's primary regulators are the Prudential Regulation Authority (PRA) and the Financial Conduct Authority (FCA).

The company's ultimate parent undertaking and controlling entity is The Goldman Sachs Group, Inc. (Group Inc.). Group Inc. is a bank holding company and a financial holding company regulated by the Board of Governors of the Federal Reserve System (FRB). The company's immediate parent undertaking is Goldman Sachs Group UK Limited (GSG UK), a company incorporated and domiciled in England and Wales. GSG UK together with its consolidated subsidiaries, form "GSG UK Group". In relation to the company, "GS Group affiliate" means Group Inc. or any of its subsidiaries. Group Inc., together with its consolidated subsidiaries, form "GS Group". GS Group 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. The company's results prepared under United States Generally Accepted Accounting Principles (U.S. GAAP) are included in the consolidated financial statements of GS Group.

The company seeks to be the advisor of choice for its clients and a leading participant in global financial markets. As part of GS Group, the company also enters into transactions with affiliates in the normal course of business as part of its market-making activities and general operations.

The company generates revenues from the following business activities: Investment Banking; Fixed Income, Currency and Commodities (FICC); Equities; and Investment Management. On April 1, 2023, the company transferred its U.K. asset management business to Goldman Sachs Asset Management International (GSAMI). As a result, the company no longer performs any significant asset management activity. See "Executive Overview — Transfer of U.K. Asset Management Business" for further details. Investment Management continues to include the company's Wealth management activity.

All references to December 2023 and 2023 refer to the year ended, or the date, as the context requires, December 31, 2023. All references to December 2022 and 2022 refer to the year ended, or the date, as the context requires, December 31, 2022. All references to December 2021 refer to the date December 31, 2021.

Certain disclosures required by U.K.-adopted international accounting standards and International Financial Reporting Standards (IFRS) adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union (IFRS as it applies in the E.U.), in relation to the company's financial risk management and capital management have been presented alongside other risk management and regulatory information in the strategic report. Such disclosures are identified as audited, where relevant. All other information in the strategic report is unaudited.

The company strives to maintain a work environment that fosters professionalism, excellence, diversity, cooperation among employees and high standards of business ethics. The company recognises that it needs the most talented people to deliver outstanding results for clients. A diverse workforce in terms of gender, ethnicity, sexual orientation, background, culture and education ensures the development of better ideas, products and services. For further information about Goldman Sachs' people, culture and commitment to diversity, see www.goldmansachs.com/our-commitments/diversity-and-inclusion/.

Executive Overview

The directors consider profit for the year, total assets and Common Equity Tier 1 (CET1) capital ratio as the company's key performance indicators.

Transfer of U.K. Asset Management Business (Audited)

In 2023, the company transferred its U.K. asset management business to GSAMI, GS Group's primary U.K. asset management entity, consistent with GS Group's resolution planning and the commercial objectives of its asset management business. This business had average annual net revenues of $436 million in 2020 to 2022, approximately 300 employees and immaterial assets and liabilities as of the date of transfer.

As consideration for the transfer, the company received a non-controlling interest in GSAMI's immediate parent undertaking, which was measured at fair value through profit or loss, resulting in a gain of $1.42 billion being recognised in net revenues in 2023. The total consideration received was distributed by the company in the fourth quarter of 2023. As such, there was no change in the company's shareholder's equity as of December 2023, compared with December 2022.

Income Statement

The income statement is set out on page 49 of this annual report. The company's profit for 2023 was $4.15 billion, an increase of 3% compared with 2022. Excluding the gain related to the transfer of the U.K. asset management business, the company's profit for 2023 was $2.73 billion, 32% lower than 2022.

Net revenues were $11.20 billion for 2023, 4% higher than 2022. Net revenues excluding the gain related to the transfer of the U.K. asset management business were $9.78 billion for 2023, 9% lower than 2022, reflecting significantly lower net revenues in FICC, Investment Banking and Investment Management, partially offset by significantly higher net revenues in Equities.

Net operating expenses were $6.14 billion for 2023, 5% higher than 2022, primarily due to higher compensation and benefits and other expenses, partially offset by significantly higher management charges to GS Group affiliates.

See "Results of Operations" below for more information about net revenues and net operating expenses.

Capital Ratios

The company's CET1 capital ratio under the U.K. capital framework was 12.6% as of December 2023 and 12.8% as of December 2022.

Balance Sheet

The balance sheet is set out on page 50 of this annual report.

As of December 2023, total assets were $1.20 trillion, an increase of $514 million from December 2022, primarily reflecting an increase in collateralised agreements of $27.02 billion (primarily due to changes in the company's and its clients' activity) and an increase in cash and cash equivalents of $23.98 billion (primarily due to a change in the proportion of Global Core Liquid Assets (GCLA) held as cash deposits), largely offset by a decrease in trading assets of $44.45 billion (primarily due to a decrease in derivatives, principally as a result of a decrease in interest rate derivatives, partially offset by an increase in trading cash instruments) and a decrease in customer and other receivables of $6.08 billion (primarily due to a decrease in cash collateral paid).

As of December 2023, total liabilities were $1.16 trillion, an increase of $2.60 billion from December 2022, primarily reflecting an increase in collateralised financings of $90.74 billion (primarily due to changes in the company's and its clients' activity) and an increase in unsecured borrowings of $14.06 billion (primarily due to an increase in intercompany loans), largely offset by a decrease in trading liabilities of $106.70 billion (primarily due to a decrease in derivatives, principally as a result of a decrease in interest rate derivatives, partially offset by an increase in trading cash instruments).

As of December 2023, total shareholder's equity was $40.12 billion, a decrease of $2.09 billion from December 2022, primarily reflecting the repurchase of $2.80 billion of the company's Additional Tier 1 notes (AT1 notes) at their fair value of $2.27 billion. The difference between the carrying value and fair value of these repurchased AT1 notes of $527 million was recognised in retained earnings. The increase in shareholder's equity from the company's total comprehensive income of $3.93 billion for 2023 was largely offset by the payment of cash dividends of $1.68 billion, a non-cash distribution of $1.42 billion and the payment of interest on the company's AT1 notes of $643 million.

Total level 3 financial assets were $4.95 billion as of December 2023 and $4.73 billion as of December 2022. See Note 30 to the financial statements for further information about level 3 financial assets, including changes in level 3 financial assets and related fair value measurement.

Under U.S. GAAP, as of December 2023, total assets were $569.21 billion and total liabilities were $534.52 billion. Total assets and total liabilities under U.S. GAAP differ from those reported under IFRS primarily due to the company presenting derivative balances gross under IFRS if they are not net settled in the normal course of business, even where it has a legally enforceable right to offset those balances.

Future Outlook

The directors consider that the year end financial position of the company was satisfactory. No significant change in the company's principal business activities is currently expected.

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.

Results of Operations

Net Revenues

Net revenues include the net profit arising from transactions, with both third parties and GS Group affiliates, in securities, foreign exchange and other financial instruments, and fees and commissions. This is inclusive of associated interest, dividends and returns on the company's GCLA.

The table below presents the company's net revenues by business activity.

	Year Ended December	
$ in millions	**2023**	2022
Investment Banking	**$ 878**	$ 1,268
FICC	**3,264**	4,584
Equities	**4,921**	3,957
Investment Management	**2,139**	993
Total	**$ 11,202**	$ 10,802

In the table above, Investment Management net revenues for 2023 included a gain of $1.42 billion related to the transfer of the company's U.K. asset management business to GSAMI.

Income and expenses associated with the company's sources and uses of funding, including returns on the company's GCLA, are allocated to the company's business activities.

Investment Banking

Investment Banking primarily generates revenues from the following:

Advisory. Includes strategic advisory engagements with respect to mergers and acquisitions, divestitures, corporate defence 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.

Corporate lending. Includes relationship lending and related hedges.

2023 versus 2022. Net revenues in Investment Banking were $878 million for 2023, 31% lower than 2022, primarily due to significantly lower net revenues in Advisory and Corporate lending, partially offset by higher net revenues in Underwriting. The decrease in Advisory net revenues reflected a decrease in industry-wide completed mergers and acquisitions transactions. The decrease in Corporate lending reflected an increase in funding costs. The increase in Underwriting reflected higher net revenues in Debt underwriting and Equity underwriting.

As of December 2023, the EMEA investment banking backlog was lower compared with December 2022, primarily due to significantly lower estimated net revenues from potential advisory transactions and lower net revenues from potential debt underwriting transactions. Estimated net revenues from potential equity underwriting transactions were essentially unchanged.

The backlog represents an estimate of net revenues from future transactions where the company believes that future revenue realisation is more likely than not. The changes in backlog may be a useful indicator of client activity levels which, over the long term, impact net revenues. However, the time frame for completion and corresponding revenue recognition of transactions in the backlog varies based on the nature of the engagement, as certain transactions may remain in the backlog for longer periods of time. In addition, the 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.

FICC and Equities

FICC and Equities serve the company's clients who buy and sell financial products, raise funding and manage risk. The company does this by acting as a market maker and offering expertise on a global basis. FICC and Equities make markets and facilitate client transactions in fixed income, currency, commodity and equity products. In addition, the company makes markets in, and clears client transactions on, major stock, options and futures exchanges worldwide.

The company executes a high volume of transactions for its clients in large, highly liquid markets. The company also executes transactions for its clients in less liquid markets for spreads and fees that are generally somewhat larger than those charged in more liquid markets. Additionally, the company structures and executes transactions involving customised or tailor-made products that address its clients' risk exposures, investment objectives or other complex needs, as well as derivative transactions related to client advisory and underwriting activities.

The company's net revenues are influenced by a combination of interconnected drivers, including (i) client activity levels and transactional bid/offer spreads and (ii) changes in the fair value of its inventory, and interest income and interest expense related to the holding, hedging and funding of its inventory.

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, 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 the company's clients through structured credit and asset-backed lending, (ii) financing through securities purchased under agreements to resell (resale agreements) and (iii) commodity financing to clients through structured transactions.

2023 versus 2022. Net revenues in FICC were $3.26 billion for 2023, 29% lower than 2022, due to significantly lower net revenues in FICC intermediation and FICC financing. The decrease in FICC intermediation reflected significantly lower net revenues in currencies and commodities and slightly lower net revenues in credit products, partially offset by higher net revenues in interest rate products and mortgages. The decrease in FICC financing was primarily driven by significantly lower net revenues from commodities financing. The decrease in FICC intermediation net revenues reflected significantly lower client activity (as activity in the prior year benefitted from volatility in the macroeconomic environment), partially offset by higher returns on the company's GCLA in a higher interest rate environment.

Equities. Equities generates revenues from intermediation and financing activities.

- **Equities intermediation.** The company makes markets in equity securities and equity-related products, including ETFs, convertible securities, options, futures and over-the-counter (OTC) derivative instruments. The company also structures and makes markets in derivatives on indices, industry sectors, financial measures and individual company stocks. The company's exchange-based market-making activities include making markets in stocks and ETFs, futures and options on major exchanges worldwide. In addition, the company generates 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 the company's clients for their securities trading activities through margin loans that are collateralised 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 the company's short sales and to make deliveries into the market. The company is also an active participant in broker-to-broker securities lending and third-party agency lending activities. In addition, the company executes swap transactions to provide its clients with exposure to securities and indices. Financing activities also include portfolio financing, which clients can utilise to manage their investment portfolios, and other equity financing activities, including securities-based loans to individuals.

2023 versus 2022. Net revenues in Equities were $4.92 billion for 2023, 24% higher than 2022, due to significantly higher net revenues in Equities financing, partially offset by slightly lower net revenues in Equities intermediation. The increase in Equities financing primarily reflected significantly higher net revenues in prime financing, primarily due to higher returns on the company's GCLA in a higher interest rate environment. The decrease in Equities intermediation reflected lower net revenues in cash products, partially offset by slightly higher net revenues in derivatives.

Investment Management

Investment Management includes Asset management and Wealth management.

In the first quarter of 2023 and in 2022, Asset management included investment services provided to GS Group affiliates or funds managed by GS Group and direct investments made by the company, which were typically longer-term in nature. On April 1, 2023, the company transferred its U.K. asset management business to GSAMI. As a result, the company no longer performs any significant asset management activity.

Wealth management includes wealth advisory services, including portfolio management and financial counselling, brokerage and other transaction services to high-net-worth individuals and families.

2023 versus 2022. Net revenues in Investment Management were $2.14 billion for 2023, compared with net revenues of $993 million for 2022. Net revenues excluding the gain related to transfer of the U.K. asset management business were $715 million for 2023, 28% lower than 2022, primarily due to significantly lower net revenues in Asset management, partially offset by significantly higher net revenues in Wealth management.

Geographic Data

See Note 5 to the financial statements for a summary of net revenues by geographic region.

Net Operating Expenses

Net operating expenses are primarily influenced by compensation (including the impact of the Group Inc. share price on share-based compensation), headcount and levels of business activity. Compensation and benefits includes salaries, allowances, year-end discretionary compensation, amortisation of share-based compensation, changes in the fair value of share-based payment awards between grant date and delivery date and other items such as benefits. Discretionary compensation is significantly impacted by, among other factors, the level of net revenues, overall financial performance, prevailing labour markets, business mix, the structure of share-based compensation programmes and the external environment.

Where the company recognises revenues in its capacity as principal to a transaction and incurs expenses to satisfy some or all of its performance obligations under these transactions, it is required by IFRS 15 'Revenue from Contracts with Customers' (IFRS 15) to report these revenues gross of the associated expenses. Such expenses are included in transaction based and other expenses (known hereafter as "IFRS 15 expenses").

The table below presents the company's net operating expenses and headcount.

	Year Ended December	
$ in millions	**2023**	2022
Compensation and benefits	**$ 2,188**	$ 1,906
Transaction based expenses	**1,651**	1,689
Market development	**54**	61
Communications and technology	**137**	147
Depreciation and amortisation	**264**	248
Professional fees	**159**	154
Management charges from GS Group affiliates	**1,139**	1,090
Other expenses	**863**	724
Operating expenses	**6,455**	6,019
Management charges to GS Group affiliates	**(319)**	(191)
Net operating expenses	**$ 6,136**	$ 5,828
Headcount at year-end	**3,332**	3,882

In the table above:

- Compensation and benefits included a charge of $216 million for 2023 and a credit of $103 million for 2022 representing changes in the fair value of share-based payment awards recharged from Group Inc. during the year.
- Compensation and benefits includes staff costs related to the company's employees. Management charges from GS Group affiliates includes staff costs recharged to the company by other GS Group affiliates. Management charges to GS Group affiliates includes staff costs recharged by the company to other GS Group affiliates.

2023 versus 2022. Net operating expenses were $6.14 billion for 2023, 5% higher than 2022.

Compensation and benefits were $2.19 billion for 2023, 15% higher than 2022. Excluding the impact of changes in the fair value of share-based payment awards recharged from Group Inc. for both years, compensation and benefits were $1.97 billion for 2023, 2% lower than 2022.

Other expenses were $863 million for 2023, 19% higher than 2022, primarily reflecting an increase in IFRS 15 expenses and miscellaneous taxes.

Management charges to GS Group affiliates were $319 million for 2023, 67% higher than 2022, primarily reflecting an increase in charges to GS Group affiliates following the transfer of the company's U.K. asset management business to GSAMI.

As of December 2023, headcount was 14% lower compared with December 2022, primarily reflecting the transfer of approximately 300 employees to GSAMI in connection with the transfer of the company's U.K. asset management business and a headcount reduction initiative in the first quarter of 2023.

Income Tax Expense

The company's effective tax rate was 18.1% for 2023, which compares to the combined U.K. corporation tax rate (including banking surcharge) of 27.75%. This difference primarily reflects the gain related to the transfer of the company's U.K. asset management business being non-taxable. The effective tax rate represents the company's income tax expense divided by its profit before taxation.

Balance Sheet and Funding Sources

Balance Sheet Management

The company leverages the firmwide balance sheet management process performed at the GS Group level to manage the size and composition of its balance sheet. While the asset base of the company changes due to client activity, market fluctuations and business opportunities, the size and composition of the company's balance sheet also reflects factors, including (i) overall risk tolerance, (ii) the amount of capital held and (iii) the company's funding profile, among other factors. See "Capital Management and Regulatory Capital — Capital Management" for information about the company's capital management process.

In order to ensure appropriate risk management, the company seeks to maintain a sufficiently liquid balance sheet and leverages GS Group's processes to dynamically manage its 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. GS Group prepares a balance sheet plan that combines projected total assets and composition of assets with 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.

Balance Sheet Limits. GS Group's Firmwide Asset Liability Committee and GS Group's 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 GS Group's maximum risk appetite, in order to ensure prompt escalation and discussion among GS Group's revenue-producing units, Treasury and GS Group's independent risk oversight and control functions on a routine basis. Requests for changes in limits are evaluated after giving consideration to their impact on GS Group's key metrics. Compliance with limits is monitored by the revenue-producing units and Treasury, as well as the independent risk oversight and control functions.

Monitoring of Key Metrics. Key balance sheet metrics are monitored both by business and on a GS Group basis, including asset and liability size and composition, limit utilisation and risk measures. Assets are attributed to businesses and movements resulting from new business activity, as well as market fluctuations, are reviewed and analysed.

Scenario Analyses. GS Group conducts scenario analyses for Group Inc. and its subsidiaries to determine how it would manage the size and composition of the balance sheet. These scenarios cover short- and long-term time horizons using various macroeconomic and GS Group-specific assumptions, based on a range of economic scenarios.

Funding Sources

The company's primary sources of funding are collateralised financings, unsecured borrowings and shareholder's equity. The company raises this funding through a number of different products, including:

- Securities sold under agreements to repurchase (repurchase agreements) and securities loaned;
- Intercompany loans from GS Group affiliates;
- Debt securities issued including notes, certificates, commercial paper and warrants; and
- Other borrowings including funded derivatives and transfers of assets accounted for as financings rather than sales.

The table below presents information about the company's funding sources.

	As of December			
$ in millions	**2023**		2022	
Collateralised financings	**$ 215,476**	**62%**	$ 124,735	52%
Unsecured borrowings	**90,267**	**26%**	76,205	31%
Total shareholder's equity	**40,119**	**12%**	42,209	17%
Total	**$ 345,862**	**100%**	$ 243,149	100%

The company generally distributes funding products through its own sales force and third-party distributors to a large, diverse creditor base in a variety of markets in the Americas, Europe and Asia. The company believes that its relationships with external creditors are critical to its liquidity. These creditors include banks, securities lenders, corporations, pension funds, insurance companies, mutual funds and individuals. The company has imposed various internal guidelines to monitor creditor concentration across its external funding programmes.

Secured Funding. The company funds a significant amount of inventory on a secured basis, with external counterparties, as well as with GS Group affiliates. Secured funding includes collateralised financings in the balance sheet. The company may also pledge its inventory as collateral for securities borrowed under a securities lending agreement. The company also uses its own inventory to cover transactions in which the company or its clients have sold securities that have not yet been purchased. Secured funding is less sensitive to changes in Group Inc. and/or the company's credit quality than unsecured funding, due to the posting of collateral to lenders. Nonetheless, the company analyses the refinancing risk of its secured funding activities, taking into account trade tenors, maturity profiles, counterparty concentrations, collateral eligibility and counterparty rollover probabilities. The company seeks to mitigate its refinancing risk by executing term trades with staggered maturities, diversifying counterparties, raising excess secured funding and pre-funding residual risk through its GCLA.

The company seeks to raise secured funding with a term appropriate for the liquidity of the assets that are being financed, and seeks longer maturities for secured funding collateralised by asset classes that may be harder to fund on a secured basis, especially during times of market stress.

A majority of the company's secured funding for securities not eligible for inclusion in the GCLA is executed through term repurchase agreements and securities loaned contracts. The company also raises secured funding through debt securities issued, bank loans, other borrowings and intercompany loans.

Unsecured Borrowings. The company has both intercompany and external unsecured borrowings.

Intercompany Unsecured Borrowings

Intercompany unsecured borrowings include loans, subordinated loans, overdrafts, debt securities issued and other borrowings. The company's unsecured intercompany loans and subordinated loans are primarily from GSG UK and Goldman Sachs Funding LLC (Funding IHC). Funding IHC is a wholly-owned, direct subsidiary of Group Inc. that facilitates the execution of GS Group's preferred resolution strategy. The majority of GS Group's unsecured funding is raised by Group Inc., which lends the necessary funds to Funding IHC and other subsidiaries, including the company, to meet asset financing, liquidity and capital requirements. The benefits of this approach to subsidiary funding are enhanced control and greater flexibility to meet the funding requirements of the company and other subsidiaries.

External Unsecured Borrowings

External unsecured borrowings include debt securities issued, other borrowings, bank loans and overdrafts.

Shareholder's Equity. Shareholder's equity is a stable and perpetual source of funding. See Notes 22 and 23 to the financial statements for further information.

Capital Management and Regulatory Capital

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

Capital Management (Audited)

The company determines the appropriate amount and composition of its capital by considering multiple factors, including the company's current and future regulatory capital requirements, the results of the company's capital planning and stress testing process, the results of resolution capital models and other factors, such as rating agency guidelines, the business environment and conditions in the financial markets.

The company's capital planning and stress testing process incorporates internally designed stress tests developed in accordance with the PRA's Internal Capital Adequacy Assessment Process (ICAAP) guidelines. It is also designed to identify and measure material risks associated with business activities, including market risk, credit risk, operational risk and other risks. The company's goal is to hold sufficient capital to ensure that it remains adequately capitalised after experiencing a severe stress event. The company's assessment of capital adequacy is viewed in tandem with its assessment of liquidity adequacy and is integrated into its overall risk management structure, governance and policy framework.

In addition, as part of the company's comprehensive capital management policy, a contingency capital plan is maintained that provides a framework for analysing 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.

Regulatory Capital (Audited)

The company is subject to the U.K. capital framework prescribed in the PRA Rulebook and the U.K. Capital Requirements Regulation, which is largely based on the Basel Committee on Banking Supervision's (Basel Committee) capital framework for strengthening international capital standards (Basel III). The Basel Committee is the primary global standard setter for prudential bank regulation.

The risk-based capital requirements are expressed as capital ratios that compare measures of regulatory capital to risk-weighted assets (RWAs). The CET1 capital ratio is defined as CET1 capital divided by RWAs. The Tier 1 capital ratio is defined as Tier 1 capital divided by RWAs. The Total capital ratio is defined as Total capital divided by RWAs.

The CET1 capital, Tier 1 capital and Total capital ratio requirements (collectively, the Pillar 1 capital requirements) are supplemented by:

- A capital conservation buffer of 2.5% of RWAs, consisting entirely of capital that qualifies as CET1 capital.
- A countercyclical capital buffer of up to 2.5% of RWAs (and also consisting entirely of CET1 capital) in order to counteract excessive credit growth. The buffer only applies to the company's exposures to certain types of counterparties based in jurisdictions which have announced a countercyclical buffer. The buffer was 71 basis points (bps) as of December 2023 and 35 basis points as of December 2022. The countercyclical capital buffer applicable to the company could change in the future and, as a result, the company's risk-based capital requirements could increase.
- The individual capital requirement under Pillar 2A (an additional amount to cover risks not adequately captured in Pillar 1). The PRA performs a periodic supervisory review of the company's ICAAP, which leads to a final determination by the PRA of the individual capital requirement under Pillar 2A. This is a point in time assessment of the minimum amount of capital the PRA considers that the company should hold.

During 2023, the company received regulatory approval and repurchased $2.80 billion of its AT1 notes at their fair value of $2.27 billion, recognising the difference between the carrying value and fair value of $527 million in retained earnings. The company partially replaced this regulatory capital by issuing $1.50 billion of Tier 2-eligible long-term subordinated loans. In addition, the company paid cash dividends of $1.68 billion and made a non-cash distribution of $1.42 billion, both to GSG UK.

Regulatory Risk-Based Capital Ratios

The table below presents information about the company's minimum risk-based capital requirements.

	As of December	
	2023	2022
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 company's minimum risk-based capital requirements as of December 2023 increased compared with December 2022 due to an increase in the U.K. countercyclical capital buffer. Effective July 5, 2023, the Bank of England increased the U.K. countercyclical capital buffer to 2% of banks' exposures to U.K. borrowers and counterparties after having increased it from 0% to 1% in December 2022.
- The minimum risk-based capital requirements incorporate the Pillar 2A capital guidance received from the PRA and could change in the future.

In addition to the Pillar 2A capital requirement, the PRA also defines the forward-looking capital requirement which represents the PRA's view of the capital that the company would require to absorb losses in stressed market conditions. This is known as Pillar 2B or the "PRA buffer" and is not reflected in the requirements shown above.

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

	As of December	
$ in millions	**2023**	2022
Risk-based capital and RWAs		
CET1 capital	**$ 32,403**	$ 31,780
Additional Tier 1 notes	**$ 5,500**	$ 8,300
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 company's CET1 capital ratio as of December 2023 decreased compared with December 2022, due to an increase in RWAs, partially offset by an increase in CET1 capital.
- The company's Tier 1 capital ratio as of December 2023 decreased compared with December 2022, due to the repurchase of $2.80 billion of AT1 notes and an increase in RWAs, partially offset by an increase in CET1 capital.
- The company's Total capital ratio as of December 2023 decreased compared with December 2022, due to the repurchase of $2.80 billion of AT1 notes and an increase in RWAs, partially offset by the issuance of $1.50 billion of Tier 2-eligible long-term subordinated loans and an increase in CET1 capital.

Certain prudential rules are subject to additional guidance and clarifications, which will be issued by the company's supervisors. All capital, RWAs and ratios are based on current interpretation, expectations and understanding of the applicable rules and may evolve as the interpretation and application is discussed with the company's regulators.

Risk-Based Capital (Audited)

The table below presents information about the company's risk-based capital.

	As of December	
$ in millions	**2023**	2022
Share capital	**$ 598**	$ 598
Share premium account	**5,568**	5,568
Retained earnings	**28,800**	27,870
Accumulated other comprehensive income	**(347)**	(127)
Deductions	**(2,216)**	(2,129)
CET1 capital	**32,403**	31,780
Additional Tier 1 notes	**5,500**	8,300
Tier 1 capital	**$ 37,903**	$ 40,080
Tier 2 capital	**6,877**	5,377
Total capital	**$ 44,780**	$ 45,457

During both 2023 and 2022, the company was in compliance with the capital requirements set by the PRA.

Risk-Weighted Assets

The table below presents information about the company's RWAs.

	As of December	
$ in millions	**2023**	2022
Credit RWAs	**$ 135,288**	$ 134,192
Market RWAs	**98,921**	90,488
Operational RWAs	**23,747**	22,973
Total	**$ 257,956**	$ 247,653

In the table above:

- Credit RWAs as of December 2023 increased by $1.10 billion compared with December 2022, primarily reflecting an increase in counterparty credit risk exposures.
- Market RWAs as of December 2023 increased by $8.43 billion compared with December 2022, primarily reflecting an increase in modelled capital charges and standardised capital charges, due to increased risk exposures.
- Operational RWAs as of December 2023 increased by $774 million compared with December 2022, primarily reflecting an increase in net revenues, which is an input into operational RWAs under the standardised approach.

Credit Risk. Credit RWAs are calculated based on measures of exposure, which are then risk weighted. The exposure amount is generally based on the following:

- For on-balance-sheet assets, the carrying value; and
- For off-balance-sheet exposures, including commitments and guarantees, a credit equivalent exposure amount is calculated based on the notional amount of each exposure multiplied by a credit conversion factor.

Counterparty credit risk is a component of total credit risk, and includes credit exposure arising from derivatives, securities financing transactions and margin loans.

Market Risk. Trading book positions are subject to market risk capital requirements which are based either on predetermined levels set by regulators or on internal models. The market risk regulatory capital rules require that a firm obtains the prior written approval of its regulators before using any internal model to calculate its risk-based capital requirement.

RWAs for market risk are computed based on measures of exposures which include the following internal models: Value-at-Risk (VaR); Stressed VaR (SVaR); Incremental Risk; and the Comprehensive Risk Measure (for PRA purposes this is the All Price Risk Measure and is subject to a floor). See "Market Risk Management — Risk Measures" for information about VaR. In addition, Standardised Rules, in accordance with the U.K. capital framework prescribed in the PRA Rulebook and the U.K. Capital Requirements Regulation, are used to compute RWAs for market risk for certain securitised and non-securitised positions by applying risk-weighting factors predetermined by regulators to positions after applicable netting is performed. RWAs for market risk are the sum of each of these measures multiplied by 12.5.

Operational Risk. The company's capital requirements for operational risk are currently calculated under the standardised approach. The standardised approach requires companies to divide their activities into eight defined business lines or categories. Each business line is assigned a beta factor which is applied to the three-year average revenues of that business line (with certain prescribed exceptions, such as extraordinary income). Expenses are not included in the calculation. The sum of the individual business line requirements is multiplied by 12.5 to derive the operational RWAs.

Concentration Risk. Under the U.K. capital framework prescribed in the PRA Rulebook and the U.K. Capital Requirements Regulation, institutions are required to monitor and control their large exposures. The large exposure framework is designed to limit the risk of over-reliance on an individual counterparty or a group of connected counterparties. There is a general limit applied to all of the institution's exposures to a single counterparty or groups of connected counterparties, which is set at 25% of eligible capital. The framework includes reporting requirements, hard limits and additional concentration capital charges for trading book large exposures. As of both December 2023 and December 2022, the company had no concentration risk capital requirements.

Leverage Ratio

From January 1, 2023, the leverage ratio framework was revised to set a minimum leverage ratio requirement, which as of December 2023 was 3.5%, inclusive of buffers. This minimum leverage ratio is applicable to GSG UK Group, which includes the company. The leverage ratio compares Tier 1 capital to a measure of leverage exposure, defined as the sum of certain assets plus certain off-balance-sheet exposures (which include a measure of derivatives, securities financing transactions, commitments and guarantees), less Tier 1 capital deductions.

The company had a leverage ratio of 4.9% as of December 2023 and 6.1% as of December 2022. The leverage ratio as of December 2023 decreased compared with December 2022, due to a decrease in Tier 1 capital and an increase in leverage exposures.

The table below presents information about the company's leverage ratio.

	As of December	
$ in millions	**2023**	2022
Tier 1 capital	**$ 37,903**	$ 40,080
Leverage exposure	**$779,898**	$659,896
Leverage ratio	**4.9%**	6.1%

Minimum Requirement for Own Funds and Eligible Liabilities

The company is subject to a minimum requirement for own funds and eligible liabilities (MREL) issued to GS Group affiliates, which became fully effective beginning in January 2022.

As of December 2023, the company's MREL of $61.47 billion was in excess of its minimum requirement and consisted of the company's total regulatory capital of $44.78 billion and eligible senior intercompany borrowings, excluding accrued interest, of $16.69 billion. As of December 2022, the company's MREL of $62.15 billion was in excess of its minimum requirement and consisted of the company's total regulatory capital of $45.46 billion and eligible senior intercompany borrowings, excluding accrued interest, of $16.69 billion.

Swaps, Derivatives and Commodities Regulation

The company is a registered swap dealer with the Commodity Futures Trading Commission (CFTC) and a registered security-based swap dealer with the U.S. Securities and Exchange Commission (SEC). As of both December 2023 and December 2022, the company was subject to and in compliance with applicable capital requirements for swap dealers and security-based swap dealers.

Regulatory Matters and Other Developments

The company's businesses are subject to extensive regulation and supervision worldwide. Regulations have been adopted or are being considered by regulators and policy-makers. 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 revised U.K. regulations.

Risk-Based Capital Ratios

In July 2023, the U.S. federal bank regulatory authorities proposed a rule implementing the Basel Committee's finalisation of the Basel III post-crisis regulatory reforms (Basel III Revisions). Among other changes, this proposed rule includes provisions that set a floor on internally modelled capital requirements at a percentage of the capital requirements under the standardised approach (known as the 'output floor'). The PRA's proposed implementation of Basel III Revisions exclude U.K. subsidiaries of overseas banking groups, such as the company, that are subject to the output floor on a global consolidated basis from the output floor provisions on a standalone basis. The company continues to evaluate the impact of the proposed rules as they are finalised by U.S. regulators and the PRA.

In September 2023, the PRA announced a delay in the proposed effective date of Basel III Revisions by six months to July 1, 2025. In December 2023, the PRA published near-final policy statements on market risk, credit valuation adjustment risk, counterparty credit risk and operational risk. The PRA intends to publish near-final policy statements on credit risk, the output floor, and reporting and disclosure requirements in the second quarter of 2024.

In May 2023, the PRA published a policy statement requiring firms to assess, report and potentially capitalise for contingent leverage exposure risks.

The impact of the latest Basel Committee and PRA developments on the company (including its RWAs and regulatory capital ratios) is subject to uncertainty until final policy statements are published by the PRA.

Principal Risks and Uncertainties

The company faces a variety of risks that are substantial and inherent in its businesses. The principal risks and uncertainties that the company faces are: market risk, liquidity risk, credit risk, operational risk, legal and regulatory risk, competition risk, and market developments and general business environment risk. These risks have been summarised below.

These risks are primarily addressed through the company's risk management and corporate governance framework, see "Risk Management — Overview and Structure of Risk Management" and "Directors' Report — Corporate Governance" for further information. For further information about liquidity risk, market risk, credit risk and operational risk and the company's mitigants, see "Liquidity Risk Management", "Market Risk Management", "Credit Risk Management", and "Operational Risk Management", respectively. Legal and regulatory risks are primarily managed by the company's independent risk oversight and control functions, see "Risk Management — Overview and Structure of Risk Management" for further information. Market developments and general business environment risks are overseen by a series of committees, councils and working groups at both the GS Group and the company level. Competition risk is primarily managed by the company's strategy and the company's engagement with employees, see "Directors' Report — Corporate Governance — Strategy" and "Directors' Report — Corporate Governance — Stakeholder Engagement — Engagement with Employees", respectively, for further information.

Market

- The company's businesses have been and may in the future be adversely affected by conditions in the global financial markets and broader economic conditions.
- The company's businesses have been and may in the future be adversely affected by declining asset values, particularly where it has net "long" positions, receives fees based on the value of assets managed, or receives or posts collateral.
- The company's market-making activities have been and may in the future be affected by changes in the levels of market volatility.
- The company's investment banking and client intermediation businesses have been adversely affected and may in the future be adversely affected by market uncertainty or lack of confidence among investors and chief executive officers due to declines in economic activity and other unfavourable economic, geopolitical or market conditions.
- Inflation has had, and could continue to have, a negative effect on the company's business, results of operations and financial condition.

Liquidity

- The company's liquidity, profitability and businesses may be adversely affected by an inability to access the debt capital markets or to sell assets.
- The company's 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 the company's and/or Group Inc.'s credit ratings or an increase in its credit spreads may adversely affect its liquidity and cost of funding.

Credit

- The company's 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 the company's market-making, underwriting, investing and financing activities.
- Derivative transactions and delayed documentation or settlements may expose the company to credit risk, unexpected risks and potential losses.

Operational

- A failure in the company's operational systems or human error, malfeasance or other misconduct, could impair the company's liquidity, disrupt its businesses, result in the disclosure of confidential information, damage its reputation and cause losses.
- A failure or disruption in the company's infrastructure, or in the operational systems or infrastructure of third parties, could impair the company's liquidity, disrupt its businesses, damage its reputation and cause losses.
- The development and use of artificial intelligence (AI) presents risks and challenges that may adversely impact the company's business.
- A failure to protect the company's computer systems, networks and information, and its clients' information, against cyber attacks and similar threats could impair its ability to conduct its businesses, result in the disclosure, theft or destruction of confidential information, damage its reputation and cause losses.
- The company may incur losses as a result of ineffective risk management processes and strategies.
- The company is reliant on Group Inc. and other GS Group affiliates for client business, various services, capital and liquidity.

Legal and Regulatory

- The company's businesses and those of its 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 the company's businesses.

- Substantial civil or criminal liability or significant regulatory action against the company could have material adverse financial effects, or cause it significant reputational harm, which in turn could seriously harm its business prospects.
- In conducting its business around the world, the company is subject to political, legal, regulatory and other risks that are inherent in operating in many countries.
- The application of regulatory strategies and requirements to facilitate the orderly resolution of large financial institutions could create greater risk of loss for the company's security holders.
- The company's commodities activities, particularly its physical commodities activities, subject the company to extensive regulation and involve certain potential risks, including environmental, reputational and other risks that may expose the company to significant liabilities and costs.

Competition

- The company's results have been and may in the future be adversely affected by the composition of its 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.
- The company's businesses would be adversely affected if the company is unable to hire and retain qualified employees.

Market Developments and General Business Environment

- The company's 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 the company's businesses and adversely affect client activity levels and the creditworthiness of its clients and counterparties, and the company's actual or perceived action or inaction relating to climate change could result in damage to its reputation.
- The company's 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 company may be adversely affected by negative publicity.
- Certain of the company's businesses and its funding instruments may be adversely affected by changes in reference rates, currencies, indices, baskets or ETFs to which products it offers or funding it raises are linked.
- The company's 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.
- The company faces enhanced risks as GS Group operates in new locations, and the company transacts with a broader array of clients and counterparties.

Risk Management

Risks are inherent in the company's businesses and include liquidity, market, credit, operational, cybersecurity, model, legal, compliance, conduct, regulatory and reputational risks. For further information about the company's risk management processes, see "Overview and Structure of Risk Management", and for information about the company's areas of risk, see "Liquidity Risk Management", "Market Risk Management", "Credit Risk Management", "Operational Risk Management", "Model Risk Management" and "Other Risk Management" below and "Non-Financial and Sustainability Information Statement — Climate-Related and Environment Risk Management" and "Principal Risks and Uncertainties".

Overview and Structure of Risk Management

Overview

The company believes that effective risk management is critical to its success. Accordingly, the company utilises GS Group's enterprise risk management framework that employs a comprehensive, integrated approach to risk management and is designed to enable comprehensive risk management processes through which the risks associated with the company's business are identified, assessed, monitored and managed.

The implementation of the company's risk governance structure and core risk management processes are overseen by Enterprise Risk, which reports to the company's chief risk officer, and is responsible for ensuring that the company's enterprise risk management framework provides the company's board of directors (known hereafter as the "Board"), the company's risk committees and senior management with a consistent and integrated approach to managing the various risks in a manner consistent with the company's risk appetite.

Together with the company's Board, an extensive committee structure with representation from senior management of the company is central to the risk management culture throughout the company. The company's risk management structure, consistent with GS Group, is built around three core components: governance; processes; and people.

Governance. Risk management governance starts with the company's Board, which both directly and through its committees, including the GSI Board Risk Committee, oversees the company's risk management policies and practices implemented through the enterprise risk management framework.

The company's revenue-producing units, as well as Treasury, Engineering, Human Capital Management, Operations, and Corporate and Workplace Solutions, are considered the first line of defence. They are accountable for the outcomes of the company's risk-generating activities, as well as for assessing and managing those risks within the company's risk appetite.

The company's independent risk oversight and control functions are considered as the second line of defence and provide independent assessment, oversight and challenge of the risks taken by the first line of defence, 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 as the third line of defence and reports to the GSI Board Audit Committee and administratively to GS Group's 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 GSI Board Audit Committee, senior management and regulators.

The three lines of defence 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. The company maintains various processes that are critical components of its 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.

The company has a comprehensive data collection process, including policies and procedures that require all employees to report and escalate risk events. The company seeks to have an approach for risk identification and control assessment that is comprehensive across all risk types, is dynamic and forward-looking to reflect and adapt to the company's changing risk profile and business environment, leverages subject matter expertise, and allows for prioritisation of the company's most critical risks. This approach also encompasses the company's control assessment, led by its second line of defence, to review and challenge the control environment to help ensure it supports the company's strategic business plan. The company also recognises that climate change is an emerging risk that presents both challenges and opportunities for its business. Risk management functions continue to develop the company's approach to identify and manage the risks to its assets and counterparties arising from climate change. See "Non-Financial and Sustainability Information Statement — Climate-Related and Environment Risk Management " for further details.

To effectively assess and monitor the company's risks, the company maintains a daily discipline of marking substantially all of its inventory to current market levels.

An important part of the company's risk management process is stress testing. It allows the company to quantify its exposure to tail risks, highlight potential loss concentrations, undertake risk/reward analysis, and assess and mitigate its risk positions. Stress tests are performed on a regular basis and are designed to ensure a comprehensive analysis of the company's vulnerabilities, and idiosyncratic risks combining financial and non-financial 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. Ad hoc stress tests are also performed in anticipation of market events or conditions. Stress tests are also used to assess capital adequacy as part of the company's capital planning and stress testing process. See "Capital Management and Regulatory Capital — Capital Management" for further information.

The company's risk metrics, reporting and monitoring processes are designed to take into account information about both existing and emerging risks, thereby enabling the company's risk committees and senior management to perform their responsibilities with the appropriate level of insight into risk exposures. Furthermore, the company's limit and threshold breach processes provide means for timely escalation. The company evaluates changes in its risk profile and businesses, including changes in business mix and jurisdictions in which it operates, by monitoring risk factors at a company-wide level.

People. The experience of the company's professionals, and their understanding of the nuances and limitations of each risk measure, guide the company in assessing exposures and maintaining them within prudent levels.

Structure

Ultimate oversight of risk in the company is the responsibility of the company's Board, which oversees the risk both directly and through delegation to various committees. A series of committees that generally consist of senior managers from both first and second lines of defence, with specific risk management mandates covering important aspects of the company's businesses also have oversight or decision-making responsibilities for risk management activities. The key committees with oversight of the company's activities are described below.

GSI Board Audit Committee. The GSI Board Audit Committee assists the company's Board in the review of processes for ensuring the suitability and effectiveness of the systems and controls of the company. This committee also has responsibility for overseeing the external audit arrangements and review of internal audit activities. Its membership includes non-executive directors of the company. The GSI Board Audit Committee reports to the company's Board.

GSI Board Risk Committee. The GSI Board Risk Committee is responsible for providing advice to the company's Board on the company's overall current and future risk appetite and assisting the company's Board in overseeing the implementation of that risk appetite by senior management. This includes reviewing and advising on the company's risk strategy and oversight of the capital, liquidity and funding position of the company. Its membership includes non-executive directors of the company. The GSI Board Risk Committee reports to the company's Board.

European Management Committee (EMC). The EMC oversees the activities of GS Group in EMEA. It is chaired by the chief executive officer of the company and its membership includes senior managers from the revenue-producing units and independent control and support functions.

GSI Risk Committee. The GSI Risk Committee is responsible for the ongoing monitoring and control of all financial and non-financial risks associated with the company's activities. This includes reviewing key financial and risk metrics, including, but not limited to profit and loss, capital (including the ICAAP), funding, liquidity, credit risk, market risk, operational risk, price verification and stress tests. The GSI Risk Committee approves market risk, credit risk, liquidity and regulatory capital limits. Its membership includes senior managers from the revenue-producing units and independent risk oversight and control functions. The GSI Risk Committee reports to the GSI Board Risk Committee and the company's Board.

GSI Asset Liability Committee. The GSI Asset Liability Committee reviews and approves the strategic direction for the company's 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. Its membership includes senior managers from the revenue-producing units and independent risk oversight and control functions. The GSI Asset Liability Committee reports to GS Group's Firmwide Asset Liability Committee and the EMC.

EMEA Conduct Committee. The EMEA Conduct Committee has oversight responsibility for conduct risk and business standards and practices in the region. Its membership includes senior managers from the revenue-producing units and independent risk oversight and control functions. The EMEA Conduct Committee reports to the EMC, GS Group's Firmwide Conduct Committee and the company's Board or its committees as appropriate.

GS Group Risk Governance

The comprehensive global risk governance framework in place at the GS Group level forms an integral part of the risk management process at the company. GS Group has established a series of committees with specific risk management mandates. Committees with oversight of matters relevant to the company include representation from the company's senior management. The primary GS Group risk and oversight committees are described below.

Management Committee. The Management Committee oversees the global activities of GS Group. The committee consists of the most senior leaders of GS Group, and is chaired by GS Group's chief executive officer. The chief executive officer of the company is a member of this committee.

Firmwide Enterprise Risk Committee. The Firmwide Enterprise Risk Committee is responsible for overseeing all of GS Group's financial and non-financial risks. As a part of such oversight, the committee is responsible for the ongoing review, approval and monitoring of GS Group's enterprise risk management framework, as well as its risk limits, and thresholds and alerts policy, through delegated authority to the Firmwide Risk Appetite Committee. This committee also reviews new significant strategic business initiatives to determine whether they are consistent with GS Group's 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 GS Group's business units in order to propose uplifts, identify elements that are common to all business units and analyse the consolidated residual risk that GS Group faces. This committee, which reports to GS Group's Management Committee, is co-chaired by GS Group's chief operating officer and chief risk officer, who are appointed as chairs by GS Group's chief executive officer, and the vice-chair is GS Group's chief financial officer, who is appointed as vice-chair by the chairs of the Firmwide Enterprise Risk Committees. The Firmwide Enterprise Risk Committee also periodically provides updates to, and receives guidance from, the Risk Committee of Group Inc.'s board of directors. Its membership includes representation from the company's senior management.

Firmwide Asset Liability Committee. The Firmwide Asset Liability Committee reviews and approves the strategic direction for GS Group's 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 GS Group's chief financial officer and global treasurer, who are appointed as chairs by GS Group's chief executive officer, and reports to GS Group's Management Committee. Its membership includes representation from the company's senior management.

Liquidity Risk Management

Overview (Audited)

Liquidity risk is the risk that the company will be unable to fund itself or meet its liquidity needs in the event of company-specific, broader industry or market liquidity stress events. The company has in place a comprehensive and conservative set of liquidity and funding policies. The company's principal objective is to be able to fund itself and to enable its core businesses to continue to serve clients and generate revenues, even under adverse circumstances.

Treasury, which reports to GS Group's chief financial officer, has primary responsibility for developing, managing and executing GS Group's liquidity and funding strategy within its risk appetite.

Liquidity Risk, which is independent of the revenue-producing units and Treasury, and reports to GS Group's chief risk officer, has primary responsibility for identifying, monitoring and managing GS Group's liquidity risk through oversight across GS Group's global businesses and the establishment of stress testing and limits frameworks. The company's framework for managing liquidity risk is consistent with, and part of, the GS Group framework.

Liquidity Risk Management Principles (Audited)

The company manages 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 the company maintains to meet a broad range of potential cash outflows and collateral needs in a stressed environment. A primary liquidity principle is to pre-fund the company's estimated potential cash and collateral needs during a liquidity crisis and hold this liquidity in the form of unencumbered, highly liquid securities and cash. The company believes that the securities held in its 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 it to meet immediate obligations without needing to sell other assets or depend on additional funding from credit-sensitive markets.

The company's GCLA is distributed across asset types, issuers and clearing agents with the goal of providing sufficient operating liquidity to ensure timely settlement in all major markets, even in a difficult funding environment.

Asset-Liability Management. The company's liquidity risk management policies are designed to ensure the company has a sufficient amount of financing, even when funding markets experience persistent stress. The company manages maturities and diversity of funding across markets, products and counterparties, and seeks to maintain a diversified external funding profile with an appropriate tenor, taking into consideration the characteristics and liquidity profile of its assets.

The company's goal is to ensure it maintains sufficient liquidity to fund its assets and meet its contractual and contingent obligations in normal times, as well as during periods of market stress. Through the dynamic balance sheet management process, actual and projected asset balances are used to determine secured and unsecured funding requirements. In a liquidity crisis, the company would begin by liquidating and monetising its GCLA before selling other assets. However, the company recognises that orderly asset sales may be prudent or necessary in a severe or persistent liquidity crisis.

Contingency Funding Plan. GS Group maintains a contingency funding plan, which has a GSI-specific addendum, to provide a framework for analysing and responding to a liquidity crisis situation or periods of market stress. The 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 the company's potential responses if assessments indicate that the company has entered a liquidity crisis, which include pre-funding for what the company estimates will be its potential cash and collateral needs, as well as utilising 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.

Stress Tests

In order to determine the appropriate size of the company's GCLA, the company models liquidity outflows over a range of scenarios and time horizons. One of the company's primary internal liquidity risk models, referred to as the Modeled Liquidity Outflow, quantifies the company's liquidity risks over a 30-day stress scenario. Other factors are considered, including, but not limited to, an assessment of potential intraday liquidity needs through an additional internal liquidity risk model, referred to as the Intraday Liquidity Model, the results of the company's long-term stress testing models, resolution liquidity models and other applicable regulatory requirements and a qualitative assessment of the condition of the company, 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. GS Group and the company also perform stress tests. See "Overview and Structure of Risk Management" for information about company-wide stress tests.

Modeled Liquidity Outflow. The Modeled Liquidity Outflow is based on conducting multiple scenarios that include combinations of market-wide and GS Group-specific stress. These scenarios are characterised by the following qualitative elements:

- Severely challenged market environments, which includes 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 GS Group-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 modelling elements of the company's Modeled Liquidity Outflow:

- Liquidity needs over a 30-day scenario;
- A two-notch downgrade of the long-term senior unsecured credit ratings of Group Inc. and its rated subsidiaries, including GSI;
- Changing conditions in funding markets, which limit the company's access to unsecured and secured funding; and
- A combination of contractual outflows, such as upcoming maturities of unsecured debt, and contingent outflows, including, among other things, the withdrawal of customer credit balances in the company's prime brokerage business or an increase in variation margin requirements due to adverse changes in the value of the company's exchange-traded and OTC-cleared derivatives.

Intraday Liquidity Model. The company's Intraday Liquidity Model measures the company's 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. The company utilises longer-term stress tests to take a forward view on its liquidity position through prolonged stress periods in which the company experiences a severe liquidity stress and recovers in an environment that continues to be challenging.

Resolution Liquidity Models. In connection with GS Group's resolution planning efforts, GS Group has established a Resolution Liquidity Adequacy and Positioning framework, which estimates liquidity needs of its major subsidiaries, including the company, in a stressed environment. GS Group has also established a Resolution Liquidity Execution Need framework, which measures the liquidity needs of its major subsidiaries, including the company, to stabilise and wind-down following a Group Inc. bankruptcy filing in accordance with GS Group's preferred resolution strategy.

In addition, GS Group has established a triggers and alerts framework, which is designed to provide the Group Inc.'s board of directors with information needed to make an informed decision on whether and when to commence bankruptcy proceedings for Group Inc.

Limits

The company uses liquidity risk limits at various levels and across liquidity risk types to manage the size of its liquidity exposures. Limits are measured relative to acceptable levels of risk given the company's liquidity risk tolerance. The purpose of these limits is to assist senior management in monitoring and controlling the company's overall liquidity profile.

The GSI Board Risk Committee and the GSI Risk Committee approve the company's limits. Limits are reviewed frequently and amended, with required approvals, on a permanent and temporary basis, as appropriate, to reflect changing market or business conditions.

Limits are monitored by the company's Treasury and Liquidity Risk functions. 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 the company's internal liquidity risk models, described above, as well as consideration of other factors, including, but not limited to, a qualitative assessment of the condition of the company, as well as the financial markets, the company believes its liquidity position as of both December 2023 and December 2022 was appropriate. The company strictly limits its GCLA to a narrowly defined list of securities and cash because they are highly liquid, even in a difficult funding environment. The company does not include other potential sources of excess liquidity in its GCLA, such as less liquid unencumbered securities or committed credit facilities.

The table below presents information about the company's GCLA.

	Average for the Year Ended December	
$ in millions	**2023**	2022
Overnight cash deposits	**$ 40,536**	$ 41,225
U.S. government obligations	**26,496**	19,533
Non-U.S. government obligations	**11,965**	18,455
Total	**$ 78,997**	$ 79,213

The GCLA held by the company is intended for use only by the company to meet its liquidity requirements and is assumed not to be available to Group Inc. or Funding IHC. In addition to GCLA held in the company, GS Group holds a portion of global GCLA directly at Group Inc. or Funding IHC, which in some circumstances may be additionally provided to the company or other major subsidiaries.

Other Unencumbered Assets. In addition to its GCLA, the company has 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 its GCLA. The fair value of the company's other unencumbered assets averaged $22.94 billion for 2023 and $21.75 billion for 2022.

Liquidity Regulatory Framework

The implementation of the Basel Committee's international framework for liquidity risk management, standards and monitoring calls for a liquidity coverage ratio (LCR) and a net stable funding ratio (NSFR).

The company is subject to a minimum LCR of 100% under the LCR rule approved by the U.K. regulatory authorities. The company's average monthly LCR for the trailing twelve-month period ended December 2023 and the trailing twelve-month period ended December 2022 exceeded the minimum requirement.

The NSFR is designed to promote medium- and long-term stable funding of the assets and off-balance sheet activities of banking organisations over a one-year time horizon. The Basel Committee's NSFR framework requires banking organisations to maintain a minimum NSFR of 100%. The company is subject to the applicable NSFR requirement implemented in the U.K., which became effective in January 2022. As of both December 2023 and December 2022, the company's NSFR exceeded the minimum requirement.

Amendments to these rules as adopted by the regulatory authorities could impact the company's liquidity and funding requirements and practices in the future.

Credit Ratings

The company relies on the debt capital markets to fund a significant portion of its day-to-day operations and the cost and availability of debt financing is influenced by the company's credit rating and that of Group Inc. Credit ratings are also important when the company is competing in certain markets, such as OTC derivatives, and when it seeks to engage in longer-term transactions.

The table below presents the unsecured credit ratings and outlook of the company and Group Inc.

	As of December 2023		
	Fitch	**Moody's**	**S&P**
GSI			
Short-term debt	**F1**	**P-1**	**A-1**
Long-term debt	**A+**	**A1**	**A+**
Ratings outlook	**Stable**	**Stable**	**Stable**
Group Inc.			
Short-term debt	**F1**	**P-1**	**A-2**
Long-term debt	**A**	**A2**	**BBB+**
Subordinated debt	**BBB+**	**Baa2**	**BBB**
Trust preferred	**BBB-**	**Baa3**	**BB+**
Preferred stock	**BBB-**	**Ba1**	**BB+**
Ratings outlook	**Stable**	**Stable**	**Stable**

Certain of the company's derivatives have been transacted under bilateral agreements with counterparties who may require the company to post collateral or terminate the transactions based on changes in the credit ratings of either the company and/or Group Inc. The company assesses the impact of these bilateral agreements by determining the collateral or termination payments that would occur assuming a downgrade by all rating agencies of both Group Inc. and the company simultaneously and of each entity individually.

The table below presents the additional collateral or termination payments related to the company's net derivative liabilities under bilateral agreements that could have been called by counterparties in the event of a one- or two-notch downgrade in Group Inc.'s and/or the company's credit ratings.

	As of December	
$ in millions	**2023**	2022
Additional collateral or termination payments:		
One-notch downgrade	**$ 142**	$ 132
Two-notch downgrade	**$ 1,144**	$ 568

Cash Flows

As a global financial institution, the company's cash flows are complex and bear little relation to the company's profitability and net assets. Consequently, the company believes that traditional cash flow analysis is less meaningful in evaluating its 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 the company's businesses.

The statement of cash flows is set out on page 52 of this annual report.

Year Ended December 2023. The company's cash and cash equivalents, net of overdrafts increased by $23.81 billion to $35.45 billion at the end of December 2023, primarily due to net cash from operating activities of $27.16 billion, partially offset by net cash used in financing activities of $4.73 billion. The net cash used in financing activities of $4.73 billion primarily reflected the repurchase of $2.80 billion of AT1 notes for $2.27 billion, cash dividends paid of $1.68 billion, interest paid on subordinated loans and MREL-eligible intercompany loans of $1.62 billion and interest paid on AT1 notes of $643 million, partially offset by receipts from issuing long-term subordinated loans of $1.50 billion.

Year Ended December 2022. The company's cash and cash equivalents, net of overdrafts decreased by $40.77 billion to $11.64 billion at the end of December 2022, primarily due to net cash used in operating activities of $32.42 billion, foreign exchange losses on cash and cash equivalents, net of overdrafts of $5.27 billion and net cash used in financing activities of $2.94 billion. The net cash used in financing activities of $2.94 billion primarily reflected the repayment of MREL-eligible intercompany loans of $1.50 billion, interest paid on AT1 notes of $749 million and interest paid on subordinated loans and MREL-eligible intercompany loans of $693 million.

Maturity of Financial Assets, Financial Liabilities and Commitments

See Note 31 to the financial statements for a maturity analysis of the company's financial assets, financial liabilities and commitments.

Market Risk Management

Overview (Audited)

Market risk is the risk of an adverse impact to the company's earnings due to changes in market conditions. The company employs 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 and metals.

Market Risk, which is independent of the revenue-producing units and reports to GS Group's chief risk officer, has primary responsibility for assessing, monitoring and managing GS Group's market risk through oversight across GS Group's global businesses.

Managers in revenue-producing units and Market Risk discuss market information, positions and estimated loss scenarios on an ongoing basis. Managers in revenue-producing units are accountable for managing risk within prescribed limits, both at the GS Group and the company level.

Market Risk Management Process (Audited)

The company's process for managing market risk includes the critical components of the 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 the company's exposures;
- Diversifying exposures;
- Controlling position sizes; and
- Evaluating mitigants, such as economic hedges in related securities or derivatives.

The company's framework for managing market risk is consistent with, and part of, the GS Group framework, and results are analysed by business and in aggregate, at both the GS Group and the company level.

Risk Measures (Audited)

The company produces risk measures and monitors them against established market risk limits. These measures reflect an extensive range of scenarios and the results are aggregated at the product, business and company-wide level.

A variety of risk measures are used to estimate the size of potential losses for both moderate and more extreme market moves over both short- and long-term time horizons. Primary risk measures are VaR, which is used for shorter-term periods, and stress tests. The company's risk report details key risks, drivers and changes for each business, and is distributed daily to senior management of both the revenue-producing units and independent risk oversight and control functions.

VaR. VaR is the potential loss in value due to adverse market movements over a defined time horizon with a specified confidence level. A one-day time horizon with a 95% confidence level is typically employed. The VaR model is a single model that 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 across the company. The VaR model is applied consistently across GS Group, including the company.

VaR is analysed at the company level and a variety of more detailed levels, including by risk category and business. 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 the company's exposures and relevant risks in the VaR calculations, historical simulations with full valuation of market factors at the position level by simultaneously shocking the relevant market factors for that position are used. 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. A sample from five years of historical data is taken to generate the scenarios for the 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 estimates of potential loss. As a result, even if positions included in VaR were unchanged, 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.

The VaR measure does not include:

- Positions that are not accounted for at fair value, such as intercompany loans and unsecured borrowings that are accounted for at amortised cost;
- Positions that are best measured and monitored using sensitivity measures; and
- The impact of changes in counterparty and GS Group's and/or the company's credit spreads on derivatives, as well as changes in GS Group's and/or the company's credit spreads on unsecured borrowings, which are designated at fair value through profit or loss.

Daily backtesting of the VaR model is performed (i.e., comparing daily net revenues for positions included in VaR to the VaR measure calculated as of the prior business day) at the GS Group and company level and for each of GS Group's businesses.

Stress Testing. Stress testing is a method of determining the effect on GS Group of various hypothetical stress scenarios. GS Group uses stress testing to examine risks of specific portfolios, as well as the potential impact of significant risk exposures across GS Group, and the impact specifically on the company. A variety of stress testing techniques to calculate the potential loss from a wide range of market moves on the company's portfolios are used, including firmwide stress tests, sensitivity analysis and scenario analysis. The results of the various stress tests are analysed together for risk management purposes. See "Overview and Structure of Risk Management" for information about company-wide stress tests.

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 GS Group's 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, it is generally assumed that positions cannot be reduced or hedged (although experience demonstrates that the company is generally able to do so).

Limits

The company uses market risk limits at various levels to manage the size of its market exposures. These limits are set based on VaR and on a range of stress tests relevant to the company's exposures.

The GSI Board Risk Committee and the GSI Risk Committee set market risk limits for the company at an entity, business and product level, consistent with the company's risk appetite.

Market 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 (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 the company holds and/or a temporary or permanent increase to the limit, if warranted.

Metrics (Audited)

VaR is analysed at the company level and a variety of more detailed levels, including by risk category and business. 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.

The table below presents the company's average daily VaR.

	Year Ended December	
$ in millions	**2023**	2022
Categories		
Interest rates	**$ 30**	$ 37
Equity prices	**23**	25
Currency rates	**10**	14
Commodity prices	**2**	1
Diversification effect	**(24)**	(29)
Total	**$ 41**	$ 48

The company's average daily VaR decreased to $41 million for 2023 from $48 million for 2022, due to lower levels of volatility and exposures. The total decrease was primarily driven by a decrease in the interest rates and currency rates categories, partially offset by a decrease in the diversification effect.

The table below presents the company's period-end VaR.

	As of December	
$ in millions	**2023**	2022
Categories		
Interest rates	**$ 23**	$ 36
Equity prices	**19**	17
Currency rates	**7**	14
Commodity prices	**1**	4
Diversification effect	**(20)**	(31)
Total	**$ 30**	$ 40

The company's period-end VaR decreased to $30 million as of December 2023 from $40 million as of December 2022, due to lower levels of volatility and exposures. The total decrease was primarily driven by decreases in the interest rates and currency rates categories, partially offset by a decrease in the diversification effect.

The table below presents the company's high and low VaR.

	Year Ended December			
	2023		2022	
$ in millions	**High**	**Low**	High	Low
Categories				
Interest rates	**$ 44**	**$ 19**	$ 57	$ 22
Equity prices	**$ 37**	**$ 17**	$ 36	$ 17
Currency rates	**$ 23**	**$ 5**	$ 32	$ 6
Commodity prices	**$ 4**	**$ 1**	$ 4	$ —
Company-wide				
VaR	**$ 73**	**$ 27**	$ 74	$ 33

Sensitivity Measures (Audited)

The company's sensitivity to other market risk measures is described below.

10% Sensitivity Measures. The market risk for positions, accounted for at fair value, that are not included in VaR is determined by estimating the potential reduction in net revenues of a 10% decline in the value of these positions. The market risk of these positions was $17.9 million as of December 2023 and $8.1 million as of December 2022.

Credit and Funding Spread Sensitivity on Derivatives and Financial Liabilities. VaR excludes the impact of changes in counterparty credit spreads, the company's own credit spreads and unsecured funding spreads on derivatives, as well as changes in the company's own credit spreads (debt valuation adjustment) on financial liabilities designated at fair value. The estimated sensitivity to a one basis point increase in credit spreads (counterparty and the company's own) and unsecured funding spreads on derivatives (including hedges) was a loss of $0.4 million as of both December 2023 and December 2022. In addition, the estimated sensitivity to a one basis point increase in the company's own credit spreads on financial liabilities designated at fair value was a gain of $5 million as of both December 2023 and December 2022. However, the actual net impact of a change in the company's 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 designated at fair value, as well as the relative performance of any hedges undertaken.

Non-Trading Currency Exposure Sensitivity. VaR excludes non-trading currency exposure. The company monitors its non-trading currency exposure on a daily basis and frequently hedges this exposure. As such, there was no significant net exposure to any individual currency as of both December 2023 and December 2022.

Credit Risk Management

Overview (Audited)

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 the company holds. The company's exposure to credit risk comes mostly from client transactions in OTC derivatives. Credit risk also comes from cash placed with banks, securities financing transactions (i.e., resale and repurchase agreements and securities borrowing and lending activities), customer and other receivables and other assets. In addition, the company holds other positions that give rise to credit risk (e.g., bonds). These credit risks are captured as a component of market risk measures, which are monitored and managed by Market Risk.

Credit Risk, which is independent of the revenue-producing units and reports to GS Group's chief risk officer, has primary responsibility for assessing, monitoring and managing GS Group's credit risk through oversight across GS Group's global businesses. The company's framework for managing credit risk is consistent with the framework of GS Group, established by GS Group's Risk Governance Committee.

Credit Risk Management Process (Audited)

The process for managing credit risk includes the critical components of the company's 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 the company's credit exposures and credit concentrations;
- Assessing the likelihood that a counterparty will default on its payment obligations;
- Measuring the company's current and potential credit exposure and losses resulting from a counterparty default;
- Using credit risk mitigants, including collateral and hedging; and
- Maximising recovery through active workout and restructuring of claims.

The company also performs credit analyses, which incorporate initial and ongoing evaluations of the company's counterparties. A credit review is an independent analysis of the capacity and willingness of a counterparty to meet its financial obligations, resulting in an internal credit rating. The determination of internal credit ratings also incorporates assumptions with respect to the nature of and outlook for the counterparty's industry, and the economic environment. Senior personnel, with expertise in specific industries, inspect and approve credit reviews and internal credit ratings.

The 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 aggregate credit risk by product, internal credit rating, industry, country and region.

Risk Measures

Credit risk is measured 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 the company after taking into account applicable netting and collateral arrangements, while potential exposure represents the company's 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.

Stress Tests

The company conducts 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, the company estimates the direct impact of the default on its sovereign credit exposures, changes to its 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. The company also performs company-wide stress tests. See "Overview and Structure of Risk Management" for information about company-wide stress tests.

Limits

Credit limits are used at various levels to manage the size and nature of the company's credit exposures. The GSI Board Risk Committee and the GSI Risk Committee approve credit risk limits at the company-wide, business and product level, consistent with the company's risk appetite. Furthermore, the GSI Risk Committee approves the framework that governs the setting of credit risk sub-limits at the company level, which is delegated to Credit Risk (through delegated authority from GS Group's Risk Governance Committee).

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 credit exposures on derivatives and securities financing transactions, the company may enter into netting agreements with counterparties that permit it to offset receivables and payables with such counterparties. The company may also reduce credit risk with counterparties by entering into agreements that enable it 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. The company monitors the fair value of the collateral to ensure that credit exposures are appropriately collateralised. The company seeks to minimise exposures where there is a significant positive correlation between the creditworthiness of counterparties and the market value of collateral received.

When the company does not have sufficient visibility into a counterparty's financial strength or when it believes a counterparty requires support from its parent company, the company may obtain third-party guarantees of the counterparty's obligations. The company may also seek to mitigate its credit risk using credit derivatives.

Credit Exposures (Audited)

The company's credit exposures are described further below.

Cash and Cash Equivalents. Cash and cash equivalents include both interest-bearing and non-interest-bearing deposits. The company seeks to mitigate the risk of credit loss, by placing substantially all of its deposits with highly rated banks and central banks.

Collateralised Agreements. The company bears credit risk related to collateralised agreements only to the extent that cash advanced to the counterparty exceeds the value of the collateral received. The company's credit exposure on these transactions is therefore significantly lower than the amounts recorded in the balance sheet, which represent fair values or contractual value before consideration of collateral received. The company also has credit exposure on collateralised financings, which are liabilities on its balance sheet, to the extent that the value of collateral pledged to the counterparty for these transactions exceeds the amount of cash or collateral received.

Customer and Other Receivables. The company is exposed to credit risk from its customer and other receivables through its receivables from broker/dealers and clearing organisations and receivables from customer. These primarily consist of receivables related to cash collateral paid to counterparties and clearing organisations in respect of derivative financial instrument liabilities. Customer and other receivables also includes collateralised receivables related to customer securities transactions, which generally have minimal credit risk due to both the value of the collateral received and the short-term nature of these receivables.

Trading Assets. Trading assets includes trading cash instruments and derivatives. In the tables below, trading cash instruments are included in the gross exposure, however, to the extent that they have been captured by market risk they are removed to arrive at net credit exposure. Derivatives are reported at fair value on a gross by counterparty basis in the company's financial statements unless the company has a current legal right of set-off and also intends to settle on a net basis. OTC derivatives are risk managed using the risk processes, measures and limits described above.

Investments. Investments includes debt instruments and equity securities. In the tables below, investments are included in the gross exposure, however, they are removed to arrive at the net credit exposure as they are captured by market risk.

Loans. Loans includes loans held for investment. In addition to the mitigants quantified in "Financial Instruments Measured at Fair Value" below, the company may also obtain credit protection on certain loans through credit derivatives, which can be single name or index-based contracts, to mitigate the credit risk associated with certain lending activity.

Other Assets. The company is exposed to credit risk from its other assets primarily through its intercompany loans, investment in subsidiary and other miscellaneous receivables.

Credit Risk Exposure (Audited)

The table below presents the company's gross credit exposure to financial assets and net credit exposure after taking account of assets captured by market risk in the company's risk management process, counterparty netting (i.e., the netting of financial assets and liabilities for a given counterparty when a legal right of set-off exists under an enforceable netting agreement), and cash and security collateral received and cash collateral posted under credit support agreements, which management considers when determining credit risk.

$ in millions	Fair value	Amortised cost	Total
As of December 2023			
Gross credit exposure	**$ 967,861**	**$ 234,519**	**$ 1,202,380**
Net credit exposure	**$ 21,221**	**$ 63,965**	**$ 85,186**
As of December 2022			
Gross credit exposure	$ 1,025,207	$ 176,668	$ 1,201,875
Net credit exposure	$ 22,606	$ 40,205	$ 62,811

Financial Instruments Measured at Fair Value. The table below presents the company's gross credit exposure to financial assets measured at fair value through profit or loss and net credit exposure after taking account of assets captured by market risk in the company's risk management process, counterparty netting, and cash and security collateral received and cash collateral posted under credit support agreements, which management considers when determining credit risk.

$ in millions	Collateralised agreements	Trading assets	Investments	Loans	Other assets	Total
As of December 2023						
Gross credit exposure	**$ 138,889**	**$828,362**	**$ 289**	**$ 174**	**$ 147**	**$ 967,861**
Assets captured by market risk	**—**	**(121,294)**	**(289)**	**—**	**—**	**(121,583)**
Counterparty netting	**(38,268)**	**(631,428)**	**—**	**—**	**—**	**(669,696)**
Cash collateral	**(109)**	**(40,617)**	**—**	**—**	**—**	**(40,726)**
Security collateral received	**(99,722)**	**(14,796)**	**—**	**(117)**	**—**	**(114,635)**
Net credit exposure	**$ 790**	**$ 20,227**	**$ —**	**$ 57**	**$ 147**	**$ 21,221**
As of December 2022						
Gross credit exposure	$ 151,739	$872,810	$ 280	$ 222	$ 156	$1,025,207
Assets captured by market risk	—	(62,410)	(280)	—	—	(62,690)
Counterparty netting	(31,987)	(733,376)	—	—	—	(765,363)
Cash collateral	(427)	(41,489)	—	—	—	(41,916)
Security collateral received	(118,212)	(14,319)	—	(101)	—	(132,632)
Net credit exposure	$ 1,113	$ 21,216	$ —	$ 121	$ 156	$ 22,606

The table below presents the company's gross and net credit exposure to financial assets measured at fair value through profit or loss by internally determined public rating agency equivalents and other credit metrics.

$ in millions	As of December 2023	2022
Gross credit exposure		
AAA	**$ 10,652**	$ 7,266
AA	**78,738**	83,822
A	**647,143**	767,372
BBB	**68,636**	69,742
BB or lower	**40,575**	33,666
Unrated	**534**	649
Assets captured by market risk	**121,583**	62,690
Total	**$ 967,861**	$ 1,025,207
Net credit exposure		
AAA	**$ 1,993**	$ 2,234
AA	**2,329**	4,007
A	**5,540**	5,351
BBB	**4,056**	6,620
BB or lower	**6,840**	4,118
Unrated	**463**	276
Total	**$ 21,221**	$ 22,606

In the table above:

- Unrated credit exposures relate to financial assets for which the company has not assigned an internally determined public rating agency equivalent.
- The net credit exposure primarily relates to derivatives.

Financial Instruments Measured at Amortised Cost. The company's financial assets measured at amortised cost are set out in Note 29 to the financial statements. These amounts represent the company's gross credit exposure to financial assets measured at amortised cost. See "Risk Mitigants" above for information about collateral and other credit enhancements that mitigate credit risk on these financial assets.

The company's financial assets measured at amortised cost were all classified within stage 1 of the company's impairment model, namely, they were not credit-impaired on initial recognition and there has been no significant increase in credit risk since initial recognition as of December 2023 and December 2022. The expected credit losses (ECL) on these financial assets were not material as of December 2023 and December 2022 as the majority of the company's financial assets measured at amortised cost are short-term in nature or collateralised. There have been no significant changes in estimation techniques or significant assumptions made during the reporting period.

The table below presents the company's gross and net credit exposure to financial assets measured at amortised cost by internally determined public rating agency equivalents and other credit metrics.

$ in millions	As of December 2023	2022
Gross credit exposure		
AAA	**$ 2,588**	$ 1,879
AA	**43,838**	18,222
A	**149,170**	118,772
BBB	**14,999**	15,189
BB or lower	**22,129**	20,844
Unrated	**1,795**	1,762
Total	**$ 234,519**	$ 176,668
Net credit exposure		
AAA	**$ 1,709**	$ 725
AA	**35,634**	12,048
A	**18,233**	19,524
BBB	**4,106**	3,080
BB or lower	**2,624**	3,271
Unrated	**1,659**	1,557
Total	**$ 63,965**	$ 40,205

In the table above:

- Unrated credit exposures relate to financial assets for which the company has not assigned an internally determined public rating agency equivalent.
- The net credit exposure primarily relates to cash and cash equivalents and customer and other receivables.

Commitments. In addition to credit risk on financial assets, the company also has credit exposure in respect of forward starting collateralised agreements and other commitments.

The table below presents the company's gross credit exposure and net credit exposure related to forward starting collateralised agreements and other commitments by internally determined public rating agency equivalents and other credit metrics. The net credit exposure takes into consideration collateral that the company expects to receive on execution of forward starting collateralised agreements.

	As of December	
$ in millions	**2023**	2022
Forward starting collateralised agreements and other commitments measured at fair value		
Gross credit exposure		
AAA	**$ 154**	$ 493
AA	**32,725**	33,992
A	**104,596**	79,645
BBB	**1,756**	5,842
BB or lower	**4,879**	4,037
Unrated	**49**	3
Total	**$ 144,159**	$ 124,012
Net credit exposure		
AAA	**$ 154**	$ 493
AA	**433**	550
A	**1,645**	1,687
BBB	**420**	1,112
BB or lower	**1,939**	2,729
Unrated	**3**	3
Total	**$ 4,594**	$ 6,574
Forward starting collateralised agreements and other commitments measured at amortised cost		
Gross credit exposure		
AAA	**$ —**	$ —
AA	**1**	42
A	**2,678**	329
BBB	**42**	—
BB or lower	**85**	95
Unrated	**3**	2
Total	**$ 2,809**	$ 468
Net credit exposure		
AAA	**$ —**	$ —
AA	**1**	—
A	**14**	3
BBB	**—**	—
BB or lower	**1**	—
Unrated	**—**	—
Total	**$ 16**	$ 3

In the table above:

- Unrated credit exposures relate to forward starting collateralised agreements and other commitments for which the company has not assigned an internally determined public rating agency equivalent.
- The net credit exposure for forward starting collateralised agreements and other commitments measured at fair value primarily relates to collateral commitments and forward starting collateralised agreements.

Forward starting collateralised agreements and other commitments measured at amortised cost were all classified within stage 1 of the company's impairment model.

Credit Concentrations (Audited)

The company's concentrations to credit risk arise from its market making, client facilitation, investing, underwriting, lending and collateralised transactions, and cash management activities, and may be impacted by changes in economic, industry or political factors. These activities expose the company to many different industries and counterparties, and may also subject the company to a concentration of credit risk to a particular central bank, counterparty, borrower or issuer, including sovereign issuers, or to a particular clearing house or exchange. The company seeks to mitigate credit risk by actively monitoring aggregate exposures against limits on individual entities and their consolidating groups, as well as countries and industries, and obtaining collateral from counterparties as deemed appropriate.

The company measures and monitors its credit exposure based on amounts owed to the company after taking into account risk mitigants that management 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 company to offset receivables and payables with such counterparties and/or enable the company to obtain collateral on an upfront or contingent basis.

Collateral obtained by the company related to derivative assets is principally cash and is held by the company or a third-party custodian. Collateral obtained by the company related to collateralised agreement transactions is primarily government and agency obligations and equities.

The table below presents the company's net credit exposure to financial assets by industry and region.

	As of December	
$ in millions	**2023**	2022
Credit Exposure by Industry		
Funds	**$ 6,806**	$ 8,220
Financial Institutions	**37,964**	36,349
Sovereign	**33,780**	9,099
Natural Resources & Utilities	**1,358**	4,034
Diversified Industrials	**1,053**	839
Other (including Special Purpose Vehicles)	**4,225**	4,270
Total	**$ 85,186**	$ 62,811
Credit Exposure by Region		
EMEA	**$ 56,412**	$ 39,796
Americas	**20,734**	15,729
Asia	**8,040**	7,286
Total	**$ 85,186**	$ 62,811

Operational Risk Management

Overview (Audited)

Operational risk is the risk of an adverse outcome resulting from inadequate or failed internal processes, people, systems or from external events. The company's 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 revenue-producing units and reports to GS Group's chief risk officer, has primary responsibility for developing and implementing a formalised framework for assessing, monitoring and managing operational risk with the goal of maintaining GS Group's exposure to operational risk at levels that are within its risk appetite. The company's framework for managing operational risk is consistent with, and part of, the GS Group framework.

Operational Risk Management Process (Audited)

The company's process for managing operational risk includes the critical components of the company's risk management framework described in the "Overview and Structure of Risk Management", including a comprehensive data collection process, as well as company-wide policies and procedures, for operational risk events.

Top-down and bottom-up approaches are combined to manage and measure operational risk. From a top-down perspective, senior management assesses company-wide and business-level operational risk profiles. From a bottom-up perspective, the first and second lines of defence are responsible for risk identification and risk management on a day-to-day basis, including escalating operational risks and risk events to senior management.

The company seeks to maintain a comprehensive control framework designed to provide a well-controlled environment to minimise operational risks. The EMEA Operational Risk and Resilience Committee is responsible for overseeing operational risk of the company and the operational resilience of the company's business.

The operational risk management framework is designed to comply with the operational risk measurement rules under Basel III and has evolved based on the changing needs of the company's businesses and regulatory guidance.

Policies have been established that require all employees and consultants to report and escalate operational risk events. When operational risk events are identified, policies require that the events be documented and analysed to determine whether changes are required in the systems and/or processes to further mitigate the risk of future events.

Operational risk management applications are used to capture, analyse, aggregate and report operational risk event data and key metrics. One of the company's key risk identification and control assessment tools is an operational risk and control self-assessment process, which is performed by the company's 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 analysed to evaluate operational risk exposures and identify businesses, activities or products with heightened levels of operational risk.

Risk Measurement

The company's operational risk exposure is measured using both statistical modelling and scenario analyses, which involve qualitative and quantitative assessments of internal and external operational risk event data and internal control factors for each of the company's businesses.

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. The company also performs company-wide stress tests. See "Overview and Structure of Risk Management" for information about company-wide stress tests.

Types of Operational Risks

Increased reliance on technology and third-party relationships has resulted in increased operational risks, such as information and cybersecurity risk, third-party risk and business resilience risk. The company manages those risks as follows:

Information and Cybersecurity Risk. Information and cybersecurity risk is the risk of compromising the confidentiality, integrity or availability of the company's data and systems, leading to an adverse impact to the company, its reputation, its clients and/or the broader financial system. The company seeks to minimise the occurrence and impact of unauthorised access, disruption or use of information and/or information systems. The company deploys and operates preventive and detective controls and processes to mitigate emerging and evolving information security and cybersecurity threats, including monitoring the company's network for known vulnerabilities and signs of unauthorised attempts to access its data and systems. There is increased information risk through diversification of the company's 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.

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 the company's behalf. These risks may include legal, regulatory, information security, cybersecurity, reputational, operational or other risks inherent in engaging a third party. The company identifies, manages and reports key third-party risks and conducts due diligence across multiple risk domains, including information security and cybersecurity, resilience and additional supply chain dependencies. The company evaluates whether vendors design, implement, and maintain information security controls consistent with its security policies and standards. Vendors that access and process the company's information on their infrastructure external to GS Group's 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, the company conducts re-certifications at a depth and frequency that is commensurate with each vendor's inherent risk rating as a component of its risk-based approach to vendor oversight. Vendors are required to agree to standard contractual provisions before receiving sensitive information from the company. These provisions have specific information security control requirements, which apply to vendors that store, access, transmit or otherwise process sensitive information on the company's behalf. The Third-Party Risk Program monitors, reviews and reassesses third-party risks on an ongoing basis.

Business Resilience Risk. Business resilience risk is the risk of disruption to the company's critical processes. The company monitors threats and assesses risks and seeks to ensure its state of readiness in the event of a significant operational disruption to the normal operations of its critical functions or their dependencies, such as critical facilities, systems, third parties, data and/or personnel. The company's resilience framework defines the fundamental principles for business continuity planning and crisis management to ensure that critical functions can continue to operate in the event of a disruption. The company seeks to maintain a business continuity programme that is comprehensive, consistent on a firmwide basis, and up-to-date, incorporating new information, including resilience capabilities. The company's resilience assurance programme encompasses testing of response and recovery strategies on a regular basis with the objective of minimising and preventing significant operational disruptions.

Model Risk Management

Overview (Audited)

Model risk is the potential for adverse consequences from decisions made based on model outputs that may be incorrect or used inappropriately. The company relies on quantitative models across its business activities primarily to value certain financial assets and liabilities, to monitor and manage its risk, and to measure and monitor the company's regulatory capital.

Model Risk, which is independent of the revenue-producing units, model developers, model owners and model users, and reports to GS Group's chief risk officer, has primary responsibility for assessing, monitoring and managing GS Group's model risk through oversight across GS Group's global businesses, and provides periodic updates to senior management, risk committees and the Risk Committee of Group Inc.'s board of directors. The company's framework for managing model risk is consistent with, and part of, GS Group's framework.

GS Group's model risk management framework is managed through a governance structure and risk management controls, which encompass standards designed to ensure it maintains a comprehensive model inventory, including risk assessment and classification, sound model development practices, independent review and model-specific usage controls. GS Group's Firmwide Model Risk Control Committee oversees the model risk management framework.

Model Review and Validation Process

Model Risk consists of quantitative professionals who perform an independent review, validation and approval of the 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.

The company regularly refines and enhances its models to reflect changes in market or economic conditions and its 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, suitability of calculation techniques, accuracy in reflecting the characteristics of the related product and its significant risks, and sensitivity to input parameters and assumptions, as well as the scope of testing performed by the model developers.

See "Liquidity Risk Management", "Market Risk Management", "Credit Risk Management", and "Operational Risk Management" for further information about the company's use of models within these areas.

Other Risk Management

In addition to the areas of risks disclosed above, the company also manages other risks, including capital, compliance and conflicts. These areas of risks are disclosed below.

Capital Risk Management

Capital risk is the risk that the company's capital is insufficient to support its business activities under normal and stressed market conditions, or it faces capital reductions or RWA increases, including from new or revised rules or changes in interpretations of existing rules, and is therefore unable to meet its internal capital targets or external regulatory capital requirements. Capital adequacy is of critical importance to the company. Accordingly, the company has 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. The company's capital management framework is designed to provide it 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 capitalised even after experiencing a severe stress event. See "Capital Management and Regulatory Capital" for further information about the company's capital management process.

The company has established a comprehensive governance structure to manage and oversee its day-to-day capital management activities and to ensure compliance with capital rules and related policies. The company's capital management activities are overseen by the Board and its committees. The Board is responsible for approving the company's ICAAP and the GSI Board Risk Committee approves its capital management policy, which details the risk committees who are responsible for the ongoing monitoring of the company's capital adequacy, evaluation of current and future regulatory capital requirements and review of the results of its capital planning and stress tests processes. In addition, risk committees and senior management are responsible for the review of its capital plan, key capital adequacy metrics, including regulatory capital ratios, and capital plan metrics, such as capital distributions, as well as monitoring capital targets and potential breaches of capital requirements. The company's framework for capital risk management is consistent with, and part of, the GS Group framework.

Compliance Risk Management

Compliance risk is the risk of legal or regulatory sanctions, material financial loss or damage to the company's reputation arising from its failure to comply with the requirements of applicable laws, rules and regulations, and its internal policies and procedures. GS Group's Compliance Risk Management Program, administered by Compliance, assesses its 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 GS Group's responses to regulatory examinations, audits and inquiries. GS Group monitors and reviews business practices to assess whether they meet or exceed minimum regulatory and legal standards in all markets and jurisdictions in which it conducts business. The company's framework for managing compliance risk is consistent with, and part of, the GS Group framework.

Conflicts Management

GS Group's 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. The responsibility for identifying potential conflicts, as well as complying with GS Group's policies and procedures, is shared by all GS Group employees.

As a general matter, Conflicts Resolution reviews financing and advisory engagements in Investment Banking and certain of GS Group's investing, lending and other activities. In addition, GS Group has various transaction oversight 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 the chief legal officer of GS Group who reports to the chief executive officer of GS Group. GS Group regularly assesses its policies and procedures that address conflicts of interest in an effort to conduct its business in accordance with the highest ethical standards and in compliance with all applicable laws, rules and regulations. The company's framework for conflicts resolution is consistent with, and part of, the GS Group framework.

E.U. Regulation

The company lists debt instruments on certain E.U. trading venues and as a result the E.U. Transparency Directive and Delegated Regulation 2019/815 on European Single Electronic Format (ESEF Regulation) apply to the company.

Non-Financial and Sustainability Information Statement

Introduction

This non-financial and sustainability information statement provides information about the company's climate-related financial disclosures and information on environmental matters, the company's employees, social matters, respect for human rights and anti-corruption and anti-bribery matters, and has been prepared in accordance with the Companies Act 2006, Section 414CB.

The Board is responsible for the business of the company as a whole, including its strategy and risk framework. The company is a wholly owned subsidiary within GS Group and, since GS Group seeks to take a consistent approach in its identification and management of sustainability matters within its operations and business, the company applies GS Group's firmwide policies and procedures, and where applicable also contributes to GS Group's strategy, metrics and targets. The Board oversees the company's application of GS Group policies and procedures, with a view to also ensuring that risks specific to the company and its operations are also appropriately considered.

GS Group has a long-standing commitment to sustainability. Its two priorities in this area are helping clients across industries decarbonise 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). GS Group's strategy is to advance these two priorities through its work with its clients, and with strategic partners whose strengths and areas of focus complement its own, as well as through its supply chain.

While the company does not have its own sustainability targets, it contributes towards GS Group's sustainability targets, which include:

- A $750 billion sustainable finance commitment to support the increasing demand for sustainable finance solutions across financing, investing, and advisory work with clients.
- Physical emissions intensity reduction targets for 2030 across energy, power, and automotive manufacturing financing portfolios.
- Net zero target for own operations and supply chain by 2030.

More information on GS Group's strategy and approach to sustainability, including its 2022 Sustainability Report can be found at www.goldmansachs.com/our-commitments/sustainability/sustainable-finance/index.html.

Business Activities

The company generates revenues from the following business activities: Investment Banking; FICC; Equities; and Investment Management. See "Results of Operations – Net revenues" for further information.

Having regard to the nature of the company's business and the manner in which it is carried on, the disclosures required by Section 414CB(2A)(e) - (h) of the Companies Act 2006, are not at this point necessary for an understanding of the company's business.

Climate-Related and Environment Risk Management

GS Group categorises climate-related and environmental risks into physical risk and transition risk. Physical risk is the risk that asset values may decline as a result of changes in the climate, while transition risk is that risk the asset values may decline because of changes in climate policies, or changes in the underlying economy, as it decarbonises. Risks related to the physical impacts of climate change include acute risks (event-driven risks, including damage to assets from extreme weather events, disruption to operations/supply chains) and chronic risks (longer-term shifts impacting resource availability, including sea level risk, chronic heat waves).

GS Group categorises climate risks into short-term (0-5 years), medium-term (5-10 years), and long-term risks (10+ years). These time horizons are relevant for the evaluation of climate-related risks and opportunities and were selected to reflect a combination of tenures over which transition and physical risks are generally relevant for scenario analysis, risk management, investment processes, and on the positioning of relevant portfolios. GS Group's scenario analysis capabilities analyse the impact of climate risks across a range of time horizons. Its methodology provides flexibility to assess short-, medium-, and long-term tenures as well as different shock applications along the climate scenario pathway. GS Group leverages open-source data and models used by the scientific and climate policy communities for both physical and transition risk scenario analysis.

GS Group integrates climate-related risks and considerations into its governance structures. Given the interdisciplinary nature of the oversight of sustainability risks, including climate-related risks, the Group Inc.'s board of directors carries out its oversight of these matters directly, at the full board level, as well as through its committees, in particular its Risk and Public Responsibilities Committees. The Board is responsible for the implementation of GS Group's climate strategy and framework, and is supported by the GSI Board Risk Committee (as appropriate). As part of its oversight responsibility, the GSI Board Risk Committee and the GSI Risk Committee receive regular reporting on risk appetite metrics for physical and transition risk and updates on its risk management approach to climate risk, including its approach towards scenario analysis and integration into existing risk management processes. The GSI Board Risk Committee reports to the Board as appropriate on climate risk.

More information on GS Group's strategy and approach to climate-related risks and opportunities, as well as how it is integrating climate across its business and risk practices can be found in its Task Force on Climate-related Financial Disclosures Report 2023 (GS Group 2023 TCFD Report) at www.goldmansachs.com/investor-relations/corporate-governance/sustainability-reporting.

Physical Risk

The company assesses physical risk for its own operations and direct commercial real estate exposures. Under this approach, the company is actively monitoring the estimated loss impact from physical risk but deems the impact to be low as it currently has no direct commercial real estate loans that generate such risk.

For physical risk, the company employs a combination of open-source data, General Circulation Models (GCM) and internal hazard methodologies to project how climate variables such as temperature may evolve over time at different geographical locations. The company has developed a climate scoring approach for a number of significant physical climate risks indices, such as, extreme temperature, water stress and wildfire. For each of these indices, and based on the scenario used, the company categorises the physical risk severity of the relevant assets in its portfolio. The company continues to monitor the severity of impacts on its resiliency. The company uses a model that analyses concentrations of real estate loan exposure in cities with extremely high physical risk as projected under the climate change scenarios. Additionally, the company recognises that through its own operational footprint in the U.K., foreign branch offices, and GS service entities across the world, the company may have exposure to physical risk.

Transition Risk

The company assesses transition risk for all affected assets on the company's balance sheet. Under this approach, the company is actively monitoring the estimated loss impact from transition risk but currently deems the impact to be low in comparison to other downside stress scenarios the company assesses.

For transition risk, the company leverages Integrated Assessment Models (IAM), which combine a physical climate model with an underlying economic model. The company has developed a climate scenario analysis framework that is able to leverage a number of climate risk scenarios. For example, the company models both Representative Concentration Pathway (RCP) scenarios that project how emissions will evolve over time as well as Network for Greening the Financial System (NGFS) scenarios. When implementing scenario analysis, it is assumed a credible policy change is announced and the market consequently adjusts credit ratings and prices of affected companies and trades. In each scenario for the company's relevant portfolios, the change in credit ratings that would result from each policy change as well as the changes in equity and credit prices that are consistent with those credit rating changes is estimated. All affected assets on the company's balance sheet are then repriced to measure the total change in value that would result under each scenario. Given the company's current business mix and structure, and based on the company's initial climate scenario analysis, the company has estimated the magnitude of potential losses for various scenarios. These estimates assume an immediate and credible change in climate policies that are factored into current market prices. The company continues to refine these estimates and methodologies, such as measuring impacts along the path.

Other Relevant Climate Risks

The company acknowledges that climate risks may overlap with pre-existing risk categories, and also give rise to reputational and legal risks. See "Principal Risks and Uncertainties" for further information on reputational and legal risks.

Risk Identification and Appetite

Risk identification serves as the foundation for the company's risk processes, informing risk strategy, mitigants, and controls. The company's risk identification process is supported by quantification methods, data, infrastructure, and analytics, culminating in the company's comprehensive Risk Factor Inventory encompassing financial and non-financial risks, including climate-related risks. This inventory contributes to the company's quantitative modelling, including climate scenario analysis, capturing both granular and broader, challenging-to-quantify risks. Quarterly Risk Identification workshops with first and second-line teams assess material risks in collaboration with teams like Credit and Market Risk to understand their impact on the overall risk profile.

This identification of climate-related risks precedes a materiality assessment of risk factors that may manifest across the company's businesses. GS Group has also updated the Firmwide Risk Taxonomy to capture climate-related risks more comprehensively. The risk taxonomy is the classification structure by which GS Group organises potential risks and risk events, providing common terms for risk identification, assessment, monitoring, and reporting processes. Within this taxonomy, climate-related risks are categorised within the broader Strategic and Business Environment Risk category as distinct, stand-alone risks. Additionally, GS Group also consider climate-related risks to be potential drivers across all risk categories.

In describing physical and transition risks as risk drivers, it is emphasised how they may impact other risk categories (Credit and Market Risk, Liquidity and Funding Risk, and Operational Risk) over a range of time horizons. In the assessment of the company's climate risk drivers and their transmission channels, it recognises the importance of understanding their integration into existing processes, practices, and procedures across the aforementioned risk categories.

Climate Risk Integration

In order to effectively manage climate-related risks, GS Group continues to integrate these risks into its management and decision-making processes. This includes embedding climate risk across its three lines of defence model, incorporating climate risk into the way it manages its operations, and integrating climate risk into portfolio management and investment decision making. In general, the company is integrated into and thereby benefits from the broader firmwide risk management and control framework supporting climate change risk management commensurate with the company's activities. As of December 2023, climate-related and environmental risks were identified as relevant but based on the quantification analysis and risk category assessments (credit, market, liquidity, operational), they have been assessed as non-material risks to the company.

First Line of Defence. A significant focus of the company's climate risk management programme is appropriate integration into the company's first-line businesses. GS Group, including the company, incorporates climate-related and environmental risk assessments in select transaction underwriting decisions and continues to further strengthen business adoption of climate-related and environmental risk management. The company's upfront business selection and due diligence processes include sector and geographic guidelines and are overseen through designated committee review processes. Enhanced considerations for assessing climate-related and environmental risk during underwriting are in place, including a dedicated section to document physical and transition risk exposure and potential mitigation within select capital and investment committee reporting. Targeted trainings have been conducted with global teams most frequently impacted by these changes.

Second Line of Defence. Climate risk is identified as a risk driver that could materialise across various risk categories. As such, GS Group assesses and manages climate risk in each risk category as follows:

- **Credit and Market Risk.** To monitor the impact of climate risk on the credit risk of companies with material lending exposure, transition risk analysis is performed for high transition risk companies (determined by the relative emissions intensity of the relevant company's sector). This analysis includes an assessment of companies' disclosures related to the low carbon transition and evaluation of ongoing and future initiatives to mitigate their transition risk. The outcome of this analysis is a transition risk mitigation score which factors into the counterparty's overall credit rating. For select transactions across the company's businesses, physical risk impact of climate risk on the company's portfolios and value of its positions are also assessed. Second line of defence quantification teams are exploring how market risk factors can be further incorporated into existing transition risk climate scenario analysis capabilities. At present, climate scenario analysis focuses on credit and equity spread shocks, and GS Group continues to assess how market risk sensitivity interacts with transition risks in the company's scenario-specific projections.
- **Liquidity and Funding Risk.** Liquidity Risk uses climate scenario analysis to quantitatively assess the impact on the company's liquidity from transition risks (e.g., policies and market dynamics that influence the demand for certain goods and services). This climate scenario analysis assessment specifically measures the liquidity impacts in a scenario where government policy changes result in more expensive access to capital markets for high emission intensity companies.
- **Operational Risk.** GS Group's Operational Resilience Framework is designed to ensure GS Group's ability to prevent, respond to, recover from, and adapt to operational disruptions, such as those caused by physical risk impacts. GS Group maintains a resilience testing programme and has developed a 'severe but plausible' business disruption scenario library utilised in integrated resilience testing of the company's important business services. The scenario library incorporates climate-related scenarios such as severe weather impacts, flooding, and extreme heat.

Third Line of Defence. As GS Group's third line of defence, Internal Audit independently assesses GS Group's internal control structure applicable to climate risk management, raises awareness of control risk, and reviews the implementation of management's control measures in line with regulatory requirements and expectations. Internal Audit maintains a working group tasked with monitoring emerging developments and coordinating Internal Audit coverage of climate risk management. The climate risk management audit plan is developed using a risk-based methodology in order to focus on the most significant risks as informed through risk assessment.

Environmental Matters

GS Group believes that a healthy environment is necessary for the well-being of society, its people and its business, and is the foundation for a sustainable and strong economy. GS Group recognises that diverse, healthy natural resources are a critical component of the society and economy. GS Group's Environmental Policy Framework guides its overall approach to sustainability issues, including management of environmental and climate risk across a broad scope of sectors and products, which can be found at www.goldmansachs.com/s/environmental-policy-framework/index.html. This policy framework equally applies to and has been adopted by the company.

Corporate and Workplace Solutions is responsible for GS Group's global workplace, including sustainability initiatives across its operations and supply chain. Managing these is integral to operating GS Group sustainably to minimise GS Group's impact on the environment and actively foster a diverse and sustainable supply chain. This approach is applied consistently across all entities in GS Group, including the company.

The company's main sources of Greenhouse Gas (GHG) emissions are the operation of office facilities, dedicated data centres and business travel. In 2015, GS Group achieved carbon neutrality in its operations and business travel, ahead of its 2020 goal announced in 2009. Since then, GS Group has committed to procuring 80% of renewable electricity from long-term, impactful agreements by 2025. GS Group has expanded its operational carbon commitment to include its supply chain, targeting net-zero carbon emissions by 2030.

More information on GS Group's sustainability efforts, including its sustainable finance strategy, energy consumption and carbon emissions can be found in the annual Goldman Sachs Sustainability Report, available at www.goldmansachs.com/investor-relations/corporate-governance/sustainability-reporting.

Streamlined Energy and Carbon Reporting (SECR). The tables below present the company's U.K. energy consumption and associated GHG emissions, as well as normalisation metrics for the purposes of SECR. As multiple GS Group subsidiaries occupy the same office space, the U.K. energy consumption and associated Scope 1 and 2 GHG emissions across GS Group have been allocated to the company based on the company's U.K. headcount, less any employees seconded to other GS Group U.K. entities, as a proportion of GS Group's total U.K. headcount.

The table below presents the company's energy consumption.

	Year Ended December	
MWh	**2023**	2022
Total energy consumption	**42,407**	49,589

The table below presents the company's GHG emissions.

	Year Ended December	
tCO_2e	**2023**	2022
Scope 1: Direct emissions		
Direct	**1,046**	1,664
Scope 2: Indirect emissions		
Location - indirect	**8,009**	8,216
Market - indirect	**—**	125
Scope 3: Other indirect emissions - Business travel		
Commercial air	**13,841**	11,858
Ground transportation	**3**	4
Totals		
Scope 1, 2 (location)	**9,055**	9,880
Scope 1, 2 (location) and 3 business travel	**22,899**	21,742
Scope 1, 2 (market) and 3 business travel	**14,890**	13,651

The table below presents the company's normalisation metrics.

	Year Ended December	
tCO_2e/U.K. employee	**2023**	2022
Scope 1, 2 (location)	**2.8**	2.7

During 2023, the company updated its energy consumption and GHG emissions methodologies to reflect the latest carbon accounting approaches and standards and as a result, comparatives in the tables above have been conformed to the current period presentation. In addition, comparatives have been revised to incorporate updated energy consumption and emissions data where available.

During 2023 in comparison to 2022:

- The company's energy consumption and scope 1 GHG emissions have decreased primarily due to a reduction in natural gas consumed and a decrease in the company's share of U.K. headcount. Natural gas consumed decreased as COVID-19 protocols for heating and cooling, which resulted in higher consumption, reverted to lower demand-based usage from the fourth quarter of 2022.
- The company's scope 3 business travel GHG emissions have increased primarily due to a significant increase in air transportation emissions factors published by the U.K. government, partially offset by a decrease in the company's global commercial air business travel mileage.

GS Group's GHG emissions are calculated in line with the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (revised edition). The boundaries of the GHG inventory are defined using the operational control approach and cover the emissions GS Group is responsible for across Scope 1, 2 and material Scope 3 business travel. The emissions are calculated by multiplying actual consumption data by industry accepted emission factors. Where actual data is unavailable, data is estimated based on GHG accounting best practices.

GS Group gathers data from its operations on an ongoing basis, with primary evidence sourced from office managers and managed centrally via GS Group's GHG Emissions Reporting Operating Procedure. GS Group seeks to ensure the accuracy of its environmental metrics and data collection processes by maintaining a robust internal inventory management plan, continuously enhancing its carbon accounting methodology and obtaining third party verification of its Scope 1, 2 and Scope 3 business travel emissions.

Maximising Energy Efficiency

GS Group aims to maximise energy efficiency in its corporate real estate by occupying energy efficient real estate, consolidating space, where possible, and leveraging efficient technology and equipment. As of December 2023, 79% of Goldman Sachs' U.K. rentable square footage as of holds BREEAM certification (83% as of December 2022).

During 2023, GS Group continued to maximise the operational efficiency of its real estate through initiatives such as optimising heating, ventilation and air conditioning settings and enhanced lighting sensors to better align energy consumption with occupancy. For further information about GS Group's operational impact in sustainability, see www.goldmansachs.com/our-commitments/sustainability/sustainable-finance/our-operational-impact/index.html.

Other Environmental, Social and Governance (ESG) Reporting. In December 2021, the FCA introduced mandatory Task Force on Climate-related Financial Disclosures (TCFD)-aligned disclosure requirements for certain FCA regulated firms. The company published its first TCFD report for in-scope asset and wealth management activity due under these requirements in 2023, which can be found at www.goldmansachs.com/investor-relations/corporate-governance/sustainability-reporting.

The company continues to assess the impact of other ESG-related regulatory frameworks that will, or are proposed to, in the future apply to the company, including the rules adopted by the FCA in December 2023 on sustainability disclosure requirements and investment labels. The company is 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.

Employee Matters

The company as a wholly owned subsidiary of GS Group applies GS Group's firmwide policies and procedures, and where applicable also contributes to GS Group's strategy, metrics and targets in relation to employee matters. The company considers its employees as its greatest asset and the Board is responsible for overseeing the company's engagement with them. This includes regular updates from management on various metrics, including on diversity and inclusion.

Senior management engaged with employees in various ways during the year including: 'Town Halls', where questions are solicited in advance and feedback gathered afterwards; Talks at GS with external and internal speakers; periodic employee feedback surveys; email and voicemail communications and manager engagement. Employees are invited to watch quarterly earnings announcements and receive internal briefings so that they are made aware of the financial and economic factors affecting the performance of GS Group, including the company. A sophisticated firmwide intranet further enables employees to be engaged.

It is company policy that there should be effective communication with all employees who, subject to practical and commercial considerations, should be made aware of financial and economic factors affecting the performance of the company and consulted on and involved in decisions that affect their current jobs or future prospects. Employees share in performance-based incentive schemes.

The company supports the diversity and inclusion initiatives of GS Group and seeks to help its people achieve their full potential by investing in them and supporting a culture of continuous development. The company's goals are to maximise individual capabilities, increase commercial effectiveness and innovation, reinforce GS Group's culture, expand professional opportunities and help its people contribute positively to their communities.

GS Group's Environmental Policy Framework guides its overall approach to sustainability issues, including in relation to employee matters. GS Group has a range of initiatives in place to increase diverse representation at all levels and foster inclusion. Various affinity groups for employees are supported by the company. The company is a signatory to the U.K. Race at Work Charter and the U.K. Women in Finance Charter and in September 2021 the company met its commitment to have women professionals comprise 30% of senior talent (vice presidents and above) by 2023.

For further information about Goldman Sachs' people, culture and commitment to diversity, see www.goldmansachs.com/our-commitments/diversity-and-inclusion/.

Social Matters

The company as a wholly owned subsidiary of GS Group applies GS Group's firmwide policies and procedures, and where applicable also contributes to GS Group's strategy, metrics and targets in relation to social matters. GS Group's Environmental Policy Framework guides its overall approach to sustainability issues, including in relation to social matters. The company supports its communities in many ways, with global initiatives coordinated through GS Group's Office of Corporate Engagement. In the U.K., these include the 10,000 Small Businesses entrepreneurship programme which helps small business owners create jobs and economic opportunity by providing access to education and business support services, and the 10,000 Women programme which fosters economic growth by providing women entrepreneurs with a business and management education, mentoring and networking, and access to capital. Charitable initiatives include Goldman Sachs Gives, a donor advised fund through which Goldman Sachs' current and retired senior employees work together to recommend grants to qualifying non-profit organisations to help them achieve their goals, Community TeamWorks, which enables the company's employees to participate in high-impact, team-based volunteer opportunities, and supporting relief efforts.

Human Rights

The company as a wholly owned subsidiary of GS Group applies GS Group's firmwide policies and procedures in relation to human rights. The company recognises and takes seriously its responsibility to help protect, preserve, and promote human rights around the world. The company's respect for human rights is fundamental to and informs its business, it guides the company in how it treats and trains its employees, and how it works with its clients and vendors. GS Group's Business Principles and its Code of Conduct and Business Ethics, which apply to the company as a subsidiary of GS Group, also play an important role in determining its responsibilities as corporate citizens. They help to inform its business selection process and to guide its business decisions and judgments.

GS Group has globally consistent standards and procedures for the on-boarding, use and payment of external suppliers (vendors). In partnering with GS Group to deliver on its objectives, suppliers are required to meet business, compliance and financial stability requirements and adhere to GS Group's vendor code of conduct, which describes its expectations that suppliers conduct business responsibly. Suppliers in industries perceived to be of higher risk in relation to ESG or modern slavery and human trafficking are subject to enhanced due diligence and monitoring. The company reports its activities on this within its annual Modern Slavery Act statement, which is reviewed and approved by the GSI Board. GS Group has a long history of working with small and diverse businesses as part of its vendor diversity programme and has implemented strategies to promote greater diversity within its supplier base. In 2020, GS Group committed to increase spend with small and diverse suppliers by 50% by 2025 (from its 2020 baseline), a goal which was achieved in 2022. In 2023, GS Group set a new goal to spend a further $1.5 billion on goods and services from small and diverse vendors globally by the end of 2025.

GS Group's Statement on Modern Slavery and Human Trafficking, which includes the company, can be found at www.goldmansachs.com/investor-relations/corporate-governance/corporate-governance-documents/statement-on-modern-slavery-and-human-trafficking.pdf.

Anti-Corruption and Anti-Bribery Matters

The company as a wholly owned subsidiary of GS Group applies GS Group's firmwide policies and procedures in relation to anti-corruption and anti-bribery matters. The company is fully committed to complying with all applicable laws and regulations designed to combat bribery and corruption and seeking and retaining business based on merit and the excellence of its performance, not through bribery or corruption. The company does not tolerate bribery or corruption involving its employees, vendors, agents, or other business partners.

The core principles of GS Group's Anti-Bribery policy, which applies to the company as a subsidiary of GS Group, include no bribery, no accepting bribes, no bribes by or through third parties and no facilitation payments. GS Group provides its employees and the public various channels through which integrity concerns can be raised without reprisal via the Goldman Sachs Business Integrity programme.

GS Group maintains robust written policies, procedures and internal controls reasonably designed to prevent, detect, and mitigate legal, regulatory, and reputational risks associated with bribery and corruption. GS Group's Anti-Bribery programme includes governance and oversight by the Anti-Bribery Group, third party due diligence, review of significant and complex transactions, pre-approval before anything of value is provided to restricted recipients, pre-and post-hire reviews and controls for candidates referred by client, potential client or public official, pre-approval for charitable contributions presenting higher bribery or corruption risk, requirements and policies governing political contributions.

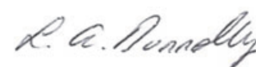
GS Group regularly reviews and assesses its Anti-Bribery Program, including through participation in anti-bribery and anti-corruption professional forums to keep informed of relevant developments, monitoring for evolving international and industry standards, and applying lessons learned from external and internal events.

Section 172(1) Statement

The directors have included the Section 172(1) statement in the directors' report, consistent with corporate governance disclosures.

Date of Authorisation of Issue

The strategic report was authorised for issue by the Board on March 20, 2024.



On behalf of the Board
L. A. Donnelly
Director
March 22, 2024

The directors present their report and the audited financial statements for the year ended December 2023.

Introduction

In accordance with Section 414A of the Companies Act 2006, the directors have prepared a strategic report, which is included in Part I of this annual report and which contains a review of the company's businesses and a description of the principal risks and uncertainties facing the company. The directors have chosen to disclose the company's risk management objectives and policies (including exposures to market risk, credit risk and liquidity risk), Streamlined Energy and Carbon Reporting, elements of Corporate Governance, and the future outlook of the company in the strategic report in accordance with Section 414C(11) of the Companies Act 2006.

Corporate Governance

The company has a robust corporate governance framework which is embedded in its approach to running its business. This framework is designated to align with legal and regulatory requirements and guidance issued by various bodies as relevant to the company and as appropriate for its business and shareholding structure. As a wholly-owned subsidiary within GS Group, the company also aligns its corporate governance with that of GS Group. While the company does not formally apply any single corporate governance code, its governance arrangements are broadly consistent with the Financial Reporting Council (FRC) Wates Corporate Governance Principles for Large Private Companies.

Role of the Board. The Board has overall responsibility for the management of the company. As part of this role, the Board approves and oversees implementation of the company's strategic objectives, risk strategy and internal governance. The Board monitors the integrity of the company's accounting and financial reporting systems including financial and operational controls and regulatory compliance and has oversight of senior management.

Purpose, Values and Culture. Whilst some of these areas of responsibility are delegated to Board committees, the Board as a whole is responsible for overseeing the company's strategic direction and culture.

The purpose of GS Group as a whole is to advance sustainable economic growth and financial opportunity. Its values which underpin this purpose are client service, excellence, partnership and integrity. As a subsidiary within GS Group, the company is aligned to this purpose and these values.

The company strives to maintain a work environment that fosters professionalism, excellence, high standards of business ethics, diversity, teamwork and cooperation amongst employees. The company recognises that it needs the most talented people to deliver outstanding results for clients. A diverse workforce in terms of gender, ethnicity, sexual orientation, background, culture and education ensures the development of better ideas, products and services.

The Board recognises the importance of maintaining and developing the culture of the company, and does so by setting the 'tone from the top' and overseeing how culture and values are fostered by the management of the company. The Board receives regular updates on culture, conduct and diversity and inclusion from management.

GS Group maintains a Code of Business Conduct and Ethics, supplemented by 14 Business Principles, and a compendium of internal policies to inform and guide employees in their roles.

Strategy. GS Group's focus is on delivering sustainable, long-term returns for its shareholders through a strategy that revolves around its clients. Its strategy comprises three core objectives:

- To grow and strengthen its existing businesses: to capture higher wallet share across a wider range of clients.
- To diversify its products and services: to build a more durable source of earnings; and
- To operate more efficiently: so that it can drive higher margins and returns across the organisation.

The company's strategy, aligned with that of GS Group, is implemented by the executive management of the company with Board oversight. The chief executive officer of the company updates the Board on the company's performance against its strategic objectives at Board meetings.

Composition of the Board. The directors collectively possess a broad range of skills, backgrounds, experience and knowledge appropriate for the effective oversight of the company's business. The roles of the chair of the Board and the chief executive officer are held by different individuals.

The Board considers that the size and structure of the Board is appropriate to oversee the businesses conducted by the company. As of December 2023, the Board is comprised of nine directors, six of whom are independent. The company has Audit, Risk, Nominations and Remuneration Board Committees.

The Board Nominations Committee is responsible for identifying and recommending qualified candidates for Board membership and utilises a Succession Planning Framework. This sets out the process and criteria, which includes the consideration of Board diversity, for the selection of new directors. The use of a skills matrix enables the experience and expertise of the Board both individually and as a whole to be assessed. New directors are provided with a comprehensive and bespoke induction programme. The chair of the Board oversees an ongoing training and development programme for the directors to enhance their knowledge and engagement.

The Board Nominations Committee oversees the effectiveness of the Board, its Committees and their chairs and members, and evaluates this annually. It also reviews the size, structure and composition of the Board, including the balance of independent and non-independent directors.

The approach to directors' conflicts of interest and the anticipated time commitment required is discussed with each director on their joining the Board and reviewed annually as part of the fitness and propriety assessment process. All the directors meet the applicable regulatory requirements for the number of directorships they are permitted to hold.

Responsibilities and Accountability. The company's governance model fully incorporates the Senior Managers and Certification Regime.

The Board is supported by various Board Committees, each with a charter setting out its duties and the responsibilities delegated to it. The Committees are comprised of non-executives only to enable them to provide oversight and challenge to management. The chairs of these Board Committees report to the Board on the proceedings and recommendations of the Committees. Certain matters are reserved for decision by the Board alone.

Further details of the GSI Board Risk Committee and GSI Board Audit Committee are set out in the "Overview and Structure of Risk Management — Structure" section of the strategic report.

Opportunity and Risk. The company believes that effective risk management is critical to its success, and so utilises GS Group's enterprise risk management framework that employs a comprehensive, integrated approach to risk management, and through which the risks associated with the company's businesses are identified, assessed, monitored and managed. The company's risk management structure is built around three core components: governance; processes; and people.

Risk management governance starts with the Board, which both directly and through its committees, including the GSI Board Risk Committee and the GSI Risk Committee, oversee the company's risk management policies and practices implemented through the enterprise risk management framework. The Board is responsible for the annual review and approval of the company's risk appetite statement, which describes the levels and types of risk it is willing to accept, in order to achieve the objectives included in its strategic business plan, while remaining in compliance with regulatory requirements. The company's strategy set out above is aligned with that of GS Group and the Board is ultimately responsible for overseeing and providing direction about the company's strategic business plan and risk appetite.

The chief risk officer reports to the GSI Board Risk Committee and GS Group's chief risk officer. As part of the review of the firmwide risk portfolio, the chief risk officer regularly advises the GSI Board Risk Committee of relevant risk metrics and material exposures, including risk limits and thresholds established in the company's risk appetite statement.

Further details of the GSI Board Risk Committee are set out in the "Overview and Structure of Risk Management — Structure" section of the strategic report.

Remuneration Framework. Attracting and retaining talent is fundamental to GS Group's long-term success as a firm. Compensation, when structured appropriately, is an important way of attracting, retaining and incentivising talent and in reinforcing GS Group's culture. GS Group's remuneration philosophy is reflected in the Goldman Sachs Compensation Principles as posted on the Goldman Sachs public website. In particular, effective remuneration practices should: (i) Encourage a real sense of teamwork and communication, binding individual short-term interests to the institution's long-term interests; (ii) Evaluate performance on a multi-year basis; (iii) Discourage excessive or concentrated risk-taking; (iv) Allow an institution to attract and retain proven talent; (v) Align aggregate compensation for GS Group with performance over the cycle; and (vi) Promote a strong risk management and control environment.

The company develops remuneration policies and practices in accordance with applicable regulatory rules whilst ensuring that these are aligned so far as possible with the Goldman Sachs Compensation Principles.

The GSI Board Remuneration Committee oversees the development and implementation of these remuneration policies and practices.

Stakeholder Engagement. The company's stakeholders include its shareholder, employees, suppliers, clients, regulators and the environment and communities in which it operates.

Engagement with Shareholder

The company is a wholly-owned subsidiary of Group Inc. As such its purpose, culture, values and strategies are aligned with those of its ultimate shareholder. The Board receives regular updates on GS Group strategy. Chairs of Board Committees meet regularly with their counterparts on Group Inc.'s board of directors. The company's chief executive officer is a member of GS Group's Management Committee and one non-executive director is a member of Group Inc.'s board of directors.

Engagement with Employees

The company considers its employees as its greatest asset and the Board is responsible for overseeing the company's engagement with them. This includes regular updates from management on various metrics, including on diversity and inclusion. See "Non-Financial and Sustainability Information Statement — Employee Matters" for further details.

Engagement with Other Stakeholders

Clients – the chief executive officer of the company regularly meets with clients and hosts and participates in client events. The Board as a whole regularly receives updates from management on client engagement.

Suppliers – GS Group has globally consistent standards and procedures for the on-boarding, use and payment of external suppliers (vendors). In partnering with GS Group to deliver on its objectives, suppliers are required to meet business, compliance and financial stability requirements and adhere to GS Group's vendor code of conduct, which describes its expectations that suppliers conduct business responsibly. See "Non-Financial and Sustainability Information Statement — Human Rights" for further details.

Regulators – the company has an active dialogue with its regulators. Senior management and directors meet with regulators on a frequent basis.

Environment – GS Group has a global approach to sustainability through its platform for sustainable finance. GS Group's approach to sustainable finance is focused on two long-term imperatives: advancing the climate transition by helping industries usher in, and thrive in, a low-carbon economy; and driving inclusive growth by leveraging its business capabilities to improve access and affordability and to advance economic empowerment. In 2020, GS Group announced a target to deploy $750 billion in sustainable financing, investing and advisory activity by the beginning of 2030. As of December 2023, GS Group achieved approximately 75% of that goal, in which the company has played a part.

Corporate and Workplace Solutions is responsible for GS Group's global workplace, including sustainability initiatives across its operations and supply chain. See "Non-Financial and Sustainability Information Statement — Environmental Matters" for further details.

Communities – the company supports its communities in many ways, with global initiatives coordinated through GS Group's Office of Corporate Engagement. See "Non-Financial and Sustainability Information Statement — Social Matters" for further details.

Internal Control over Financial Reporting. Management of the company is responsible for establishing and maintaining adequate internal control over financial reporting. The company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the company's financial statements for external reporting purposes in accordance with U.K.-adopted international accounting standards and IFRS as it applies in the E.U.

The company's 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.K.-adopted international accounting standards and IFRS as it applies in the E.U., and that receipts and expenditures are being made only in accordance with authorisations of management and the directors of the company; and provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use or disposition of the company's assets that could have a material effect on the company's financial statements.

Section 172(1) Statement

Under Section 172 of the Companies Act 2006, the directors of the company are required to act in the way they consider, in good faith, would be most likely to promote the success of the company for the benefit of its stakeholders as a whole. In doing this, Section 172 requires a director to have regard, among other matters, to: the likely consequences of any decision in the long-term; the interests of the company's employees; the need to foster the company's business relationships with clients, suppliers and others; the impact of the company's operations on the community and the environment; the desirability of the company maintaining a reputation for high standards of business conduct; and the need to act fairly with stakeholders of the company.

The directors give careful consideration to the factors set out above in discharging their duties under Section 172 and they inform the directors' decision-making as a board. The company endorses GS Group's Code of Business Conduct and Ethics set out on the Goldman Sachs public website and looks to conduct its business in accordance with the highest ethical standards and in compliance with all applicable laws, rules and regulations.

The directors are committed to effective engagement with all of the company's stakeholders. They recognise that building strong relationships with these stakeholders will help the company deliver its strategy in line with its long-term values, and operate the business in a sustainable way. The Board seeks to understand and balance the relative interests and priorities of each group and to have regard to these, as appropriate, in their discussions and in the decision-making process. As part of this, the Board receives regular updates from the chief executive officer of the company on his interactions with clients and how these are shaping the company's strategy. It also receives feedback from the company's shareholder. The agenda setting process for Board meetings is designed to ensure topics relevant to stakeholders are brought to the Board in a frequent and timely manner.

In addition, the Board may receive training and other information to further develop its understanding of key issues impacting the company's stakeholders. The Board is further supported by the GSI Board Audit Committee, the GSI Board Risk Committee and the GSI Board Remuneration Committee who consider in more detail the systems and controls in place in relation to engagement with stakeholders.

More details about the company's engagement with its stakeholders can be found in "Corporate Governance — Stakeholder Engagement" above.

Employment of Disabled Persons

Applications for employment by disabled persons are fully and fairly considered with regard to the aptitudes and abilities of each applicant. Efforts are made to enable any employees who become disabled during employment to continue their careers within GS Group. Training, career development and promotion of disabled persons are, to the extent possible, identical to that of other employees who are not disabled.

Dividends and Distributions

During 2023, the company paid cash dividends of $1.68 billion to GSG UK and made a non-cash distribution of $1.42 billion to GSG UK for the consideration it received from the transfer of its U.K. asset management business.

No cash dividends were paid and no distributions were made for 2022.

Charitable Contributions

The company made donations to charity of $32 million for 2023 and $23 million for 2022. This included donations of $30 million for 2023 and $20 million for 2022 to Goldman Sachs Gives (UK), a registered charity, for general charitable purposes in England and Wales.

Exchange Rate

The British pound/U.S. dollar exchange rate was £/$1.2746 as of December 2023 and £/$1.2063 as of December 2022. The average rate for 2023 was £/$1.2469 and for 2022 was £/$1.2329.

Disclosure of Information to Auditors

In the case of each of the persons who are directors of the company at the date when this report was approved:

- So far as each of the directors is aware, there is no relevant audit information of which the company's auditors are unaware; and
- Each of the directors has taken all the steps that they ought to have taken as a director to make themselves aware of any relevant audit information and to establish that the company's auditors are aware of that information.

Independent Auditors

The company has passed a resolution to re-appoint PricewaterhouseCoopers LLP as auditors of the company for financial periods commencing on or after January 1, 2021.

Statement of Directors' Responsibilities in Respect of the Financial Statements

The directors are responsible for preparing the annual report and the financial statements in accordance with applicable law and regulation.

Company law requires the directors to prepare financial statements for each financial year. Under that law, the directors have prepared the financial statements in accordance with U.K.-adopted international accounting standards.

The company has also prepared financial statements in accordance with International Financial Reporting Standards (IFRS) adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the E.U.

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

- Select suitable accounting policies and then apply them consistently;
- State whether applicable U.K.-adopted international accounting standards and IFRS adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the E.U. have been followed, subject to any material departures disclosed and explained in the financial statements;
- Make judgements and estimates that are reasonable and prudent; and
- Prepare the financial statements on the going concern basis unless it is inappropriate to presume that the company will continue in business.

The directors are responsible for safeguarding the assets of the company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The directors are also responsible for keeping adequate accounting records that are sufficient to show and explain the company's transactions and disclose with reasonable accuracy at any time the financial position of the company and enable them to ensure that the financial statements comply with the Companies Act 2006.

The directors are responsible for:

- The maintenance and integrity of the company's financial statements on the Goldman Sachs website.
- Presenting the financial statements in compliance with the requirements set out in the Delegated Regulation 2019/815 on European Single Electronic Format (ESEF Regulation).

Legislation in the U.K. governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Directors' Confirmations

Each of the directors, whose names and functions are listed in "Directors" below, confirm that to the best of their knowledge:

- The financial statements, which have been prepared in accordance with U.K.-adopted international accounting standards and IFRS adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the E.U., give a true and fair view of the assets, liabilities, financial position and profit or loss of the company; and
- The strategic report includes a fair review of the development and performance of the business and the position of the company, together with a description of the principal risks and uncertainties that the company faces.

Directors

The directors of the company who served throughout the year and to the date of this report, except where noted, were:

Name
J. M. D. Barroso (resigned March 31, 2023)
E. E. Stecher (resigned January 31, 2023)
M. O. Winkelman (resigned January 31, 2023)
M. M. Burns (appointed March 1, 2023)
C. Cripps
L. A. Donnelly
Sir Bradley Fried, Chair (appointed February 1, 2023)
R. J. Gnodde, Chief executive officer
S. P. Gyimah
N. Harman
T. L. Miller OBE
N. Pathmanabhan

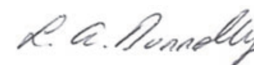
No director had, at the year end, any interest requiring note herein.

Qualifying Third Party Indemnity Provisions

An indemnity provision, as defined by Section 234 of the Companies Act 2006, is provided to the directors of the company under the by-laws of The Goldman Sachs Group, Inc. This indemnity was in force throughout the year and to the date of this report.

Date of Authorisation of Issue

The financial statements were authorised for issue by the Board on March 20, 2024.



On behalf of the Board
L. A. Donnelly
Director
March 22, 2024

Independent auditors' report to the member of Goldman Sachs International (unlimited company)

Report on the audit of the financial statements

Opinion

In our opinion, Goldman Sachs International's financial statements:

- give a true and fair view of the state of the company's affairs as at 31 December 2023 and of its profit and cash flows for the year then ended;
- have been properly prepared in accordance with UK-adopted international accounting standards; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

We have audited the financial statements, included within the Annual Report, which comprise: the balance sheet as at 31 December 2023; the income statement, the statement of comprehensive income, the statement of changes in equity and the statement of cash flows for the year then ended; and the notes to the financial statements, comprising material accounting policy information and other explanatory information.

Our opinion is consistent with our reporting to the GSI Board Audit Committee.

Separate opinion in relation to international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union

As explained in Note 2 'Basis of Preparation' to the financial statements, the company, in addition to applying UK-adopted international accounting standards, has also applied international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union.

In our opinion, the company financial statements have been properly prepared in accordance with international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)"), International Standards on Auditing issued by the International Auditing and Assurance Standards Board ("ISAs") and applicable law. Our responsibilities under ISAs (UK) and ISAs are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We remained independent of the company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, as applicable to listed public interest entities, and the International Code of Ethics for Professional Accountants (including International Independence Standards) issued by the International Ethics Standards Board for Accountants (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with these requirements.

To the best of our knowledge and belief, we declare that non-audit services prohibited by either the FRC's Ethical Standard or Article 5(1) of Regulation (EU) No 537/2014 were not provided.

Other than those disclosed in Note 6 'Net Operating Expenses' to the financial statements, we have provided no non-audit services to the company or its controlled undertakings in the period under audit.

Our audit approach

Overview

Audit scope

- We perform a full scope audit of the financial statements of the company as a whole as a single component. The scope of the audit and the nature, timing and extent of audit procedures were determined by our risk assessment, the financial significance of financial statement line items and qualitative factors (including history of misstatement through fraud or error). In particular, we looked at where the directors made subjective judgements, for example in respect of critical accounting estimates that involved making assumptions and considering future events that are inherently uncertain.

Key audit matters

- Valuation of financial assets and liabilities held at fair value.

Materiality

- Overall materiality: $413 million (2022: $404 million) based on approximately 1% of total Tier 1 capital resources.
- Performance materiality: $309 million (2022: $303million).

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements.

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

This is not a complete list of all risks identified by our audit.

The key audit matters below are consistent with last year.

Key audit matter	How our audit addressed the key audit matter
Valuation of financial assets and liabilities held at fair value ***Refer to Note 30 'Fair Value Measurement' in the financial statements.*** In accordance with the accounting policies set out in Note 3 'Material Accounting Policies' to the financial statements, the majority of financial assets and liabilities are recorded in the balance sheet at fair value and changes in fair value are recorded in net revenues. Total financial assets and liabilities at fair value were $967.86 billion and $899.33 billion, respectively, as at 31 December 2023. The audit of the valuation of financial assets and liabilities required significant audit resources and is an area of estimation uncertainty and therefore represents a key audit matter. The fair values for substantially all of the company's financial assets and liabilities measured at fair value detailed in Note 30 'Fair Value Measurement' are based on observable prices and inputs and are classified in levels 1 and 2 of the fair value hierarchy. The valuations of derivative financial instruments are calculated by financial models using a variety of inputs. The company also enters into complex and less liquid cash and derivative financial instruments where a limited or no active market exists. In these instances, there is less observable evidence to support the valuations and hence there is greater estimation uncertainty. When one or more valuation inputs are unobservable and significant, the financial instrument is classified as level 3 in the valuation hierarchy. Level 3 financial assets and liabilities measured at fair value were $4.95 billion and $8.50 billion, respectively, as at 31 December 2023. We performed a risk assessment of the financial instruments held by the company using our industry experience and knowledge of the company's business. We used this analysis to identify areas of greater judgement and focus our testing. We concluded that the higher assessed risks of material misstatement relate to the valuation of certain credit and equity derivatives. Within credit derivatives, this included the valuation of a portfolio of financial instruments sensitive to secured funding spreads, the methodology for which involves a number of assumptions in developing the estimate, and within equity derivatives, a portfolio of financial instruments sensitive to correlation and stochastic volatility inputs.	We understood and evaluated the design and implementation of key controls over the valuation of financial assets and liabilities. These controls included: • Validation of new and existing models by a specialist team within the risk function, as well as access and change management controls in respect of models in use; • The price verification process performed by the Product Control function using prices and model inputs sourced from third parties; and • Calculation and approval of key valuation adjustments. We tested the operating effectiveness of these controls and noted no significant exceptions and we determined we could rely on these controls for the purposes of our audit. In addition, we performed the substantive testing described below. We tested the valuation of a sample of cash instruments to third party sources. We utilised internal valuation experts to revalue a sample of derivative and cash financial instruments, including level 3 instruments, using independent models and inputs to the extent available. In relation to a portfolio of credit derivatives in level 3, we utilised our internal valuation experts to: • Assess the appropriateness of fair value by identifying potential alternative funding spreads using external sources and evaluating the difference in valuation; • Test a sample of management's valuation inputs to external sources; and • Reperform the valuation of a sample of positions using our own models and, to the extent available, independent inputs. Where we utilised management's inputs to revalue the instruments, we assessed the reasonableness of the inputs used. Additionally, we valued a sample of equity derivatives sensitive to correlation and stochastic volatility inputs and, to the extent available, independently sourced inputs. For samples where we utilised management's inputs to revalue the instruments, we assessed the reasonableness of the inputs used. We evaluated the methodology and underlying assumptions used to determine valuation adjustments. We tested a sample of valuation adjustments as at the period-end. Based on the work performed, we found management's estimates of the fair value of financial assets and liabilities to be within a reasonable range and supported by the evidence obtained. We read and assessed the disclosures in Note 30 'Fair Value Measurement' regarding significant unobservable inputs and the fair value hierarchy and found them to be appropriate.

Independent auditors' report to the member of Goldman Sachs International (unlimited company)

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the company, the accounting processes and controls, and the industry in which it operates.

The company provides financial services to clients worldwide. The company also operates a number of branches and representative offices across Europe, the Middle East and Africa to provide financial services to clients in those regions. We consider the company and its branches to represent a single audit component. Traders based in overseas group locations enter into transactions on behalf of the company. In these circumstances, certain internal controls relevant to financial reporting operate in those locations. In addition, there are a number of centralised functions operated by the ultimate parent company, The Goldman Sachs Group, Inc. ("Group Inc."), in the U.S. or in group shared service centres in other locations that are relevant to the audit of the company. We determined the scope of the work required in each of these locations and issued instructions to PwC network firms. We interacted regularly with the firms responsible for the work throughout the course of the audit. This included making visits to certain overseas PwC network firms, reviewing key working papers and discussing and challenging the results of work in higher risk areas of the audit. We concluded that the procedures performed on our behalf were sufficient for the purposes of issuing our opinion.

The impact of climate risk on our audit

As part of our audit we made enquiries of management to understand the extent of the potential impact of climate risk on the company's financial statements, and we remained alert when performing our audit procedures for any indicators of the impact of climate risk. Our procedures did not identify any material impact as a result of climate risk on the company's financial statements.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

Overall company materiality	$413 million (2022: $404 million).
How we determined it	Approximately 1% of total Tier 1 capital resources
Rationale for benchmark applied	The company is a wholly owned subsidiary of Group Inc. We consider the primary users of the financial statements to be Group Inc., regulators and market counterparties, who are focused on whether the company has sufficient capital resources to meet minimum regulatory requirements, fulfil its future market obligations and absorb any future losses should they arise. Overall materiality amounts to $413 million, approximately 1% of total Tier 1 capital resources.

We use performance materiality to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds overall materiality. Specifically, we use performance materiality in determining the scope of our audit and the nature and extent of our testing of account balances, classes of transactions and disclosures, for example in determining sample sizes. Our performance materiality was 75% (2022: 75%) of overall materiality, amounting to $309 million (2022: $303 million) for the company financial statements.

In determining the performance materiality, we considered a number of factors - the history of misstatements, risk assessment and aggregation risk and the effectiveness of controls - and concluded that an amount at the upper end of our normal range was appropriate.

We agreed with the Board Audit Committee that we would report to them misstatements identified during our audit above $41,000,000 (2022: $40,400,000) as well as misstatements below that amount that, in our view, warranted reporting for qualitative reasons.

Independent auditors' report to the member of Goldman Sachs International (unlimited company)

Conclusions relating to going concern

Our evaluation of the directors' assessment of the company's ability to continue to adopt the going concern basis of accounting included:

- Performing a risk assessment to identify factors that could impact the going concern basis of accounting;
- Evaluating the company's current financial position and financial forecasts, including the substantiation of the financial resources available to the company at the balance sheet date;
- Understanding and evaluating the company's current capital and liquidity position and reviewing the results of stress testing performed by management of both liquidity and regulatory capital, including considering the severity of the stress scenarios that were used;
- Considering the results of procedures performed by the group auditor to support the going concern assessment for Group Inc., together with its consolidated subsidiaries; and
- Evaluating the adequacy of the disclosures made in the financial statements in relation to going concern.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

However, because not all future events or conditions can be predicted, this conclusion is not a guarantee as to the company's ability to continue as a going concern.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The directors are responsible for the other information. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic Report and Directors' Report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on our work undertaken in the course of the audit, the Companies Act 2006 requires us also to report certain opinions and matters as described below.

Strategic Report and Directors' Report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic Report and Directors' Report for the year ended 31 December 2023 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements.

In light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic Report and Directors' Report.

Independent auditors' report to the member of Goldman Sachs International (unlimited company)

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Statement of Directors' Responsibilities in respect of the Financial Statements, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

The directors are responsible for presenting the financial statements in compliance with the requirements set out in the Delegated Regulation 2019/815 on European Single Electronic Format (ESEF Regulation).

Auditors' responsibilities for the audit of the financial statements

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

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud, is detailed below.

Based on our understanding of the company and industry, we identified that the principal risks of non-compliance with laws and regulations related to rules of the Financial Conduct Authority ("FCA") and Prudential Regulation Authority ("PRA"), and we considered the extent to which non-compliance might have a material effect on the financial statements. We also considered those laws and regulations that have a direct impact on the financial statements such as the Companies Act 2006 and corporate tax legislation. We evaluated management's incentives and opportunities for fraudulent manipulation of the financial statements (including the risk of override of controls), and determined that the principal risks were related to posting of inappropriate journal entries and management bias through the manipulation of the valuation of financial instruments held at fair value. Audit procedures performed by the engagement team included:

- Discussions with management, including Internal Audit, and those charged with governance in relation to known or suspected instances of non-compliance with laws and regulations and fraud;
- Evaluating and testing of the operating effectiveness of management's controls designed to prevent and detect fraud in financial reporting;
- Assessing matters reported on the company's whistleblowing helpline and the results of management's investigation of such matters;
- Reviewing key correspondence with regulatory authorities (the FCA and the PRA);
- Identifying and testing selected journal entries, in particular any journal entries posted by senior management, account owners, individuals in particular departments (including front office) and unusual account combinations with a credit to revenue;
- Challenging assumptions and judgments made by management in their critical accounting estimates, in particular in relation to the valuation of financial assets and liabilities held at fair value; and
- Incorporating unpredictability into the nature, timing and/or extent of our testing.

There are inherent limitations in the audit procedures described above. We are less likely to become aware of instances of non-compliance with laws and regulations that are not closely related to events and transactions reflected in the financial statements. Also, the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion.

Independent auditors' report to the member of Goldman Sachs International (unlimited company)

Our audit testing might include testing complete populations of certain transactions and balances, possibly using data auditing techniques. However, it typically involves selecting a limited number of items for testing, rather than testing complete populations. We will often seek to target particular items for testing based on their size or risk characteristics. In other cases, we will use audit sampling to enable us to draw a conclusion about the population from which the sample is selected.

A further description of our responsibilities for the audit of the financial statements in accordance with ISAs (UK) is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditors' report.

As part of an audit in accordance with ISAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the company to express an opinion on the financial statements. We are responsible for the direction, supervision and performance of the company audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, actions taken to eliminate threats or safeguards applied.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Use of this report

This report, including the opinions, has been prepared for and only for the company's member as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Other required reporting

Companies Act 2006 exception reporting

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

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

We have no exceptions to report arising from this responsibility.

Report on other legal and regulatory requirements

We have checked the compliance of the financial statements of the company as at 31 December 2023 with the relevant statutory requirements set out in the ESEF Regulation that are applicable to financial statements. That is, for the company:

- The financial statements are prepared in a valid xHTML format.

In our opinion, the financial statements of the company as at 31 December 2023, identified as gsinternational-12-31-23-financial-statements.xhtml, have been prepared, in all material respects, in compliance with the requirements laid down in the ESEF Regulation.

Appointment

We were appointed by the directors on 22 September 1988 to audit the financial statements for the year ended 24 November, 1989 and subsequent financial periods. The period of total uninterrupted engagement is 35 years, covering the years ended 24 November 1989 to 31 December 2023.

Goldman Sachs International is not a UK public-interest entity, and as such mandatory firm rotation requirements do not apply.

Other matter

In the event that the English version of this report and a translation of it into a language other than English differ, the English version shall prevail.

Nick Morrison (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London
March 22, 2024

Income Statement

$ in millions	Note	Year Ended December 2023	2022
Gains or losses from financial instruments at fair value through profit or loss		**$ 10,304**	$ 10,372
Fees and commissions		**1,886**	2,058
Other income		**1,443**	—
Non-interest income		**13,633**	12,430
Interest income from financial instruments measured at fair value through profit or loss		**10,362**	4,013
Interest income from financial instruments measured at amortised cost		**12,304**	3,968
Interest expense from financial instruments measured at fair value through profit or loss		**(11,324)**	(4,834)
Interest expense from financial instruments measured at amortised cost		**(13,773)**	(4,775)
Net interest expense		**(2,431)**	(1,628)
Net revenues	5	**11,202**	10,802
Net operating expenses	6	**(6,136)**	(5,828)
Profit before taxation		**5,066**	4,974
Income tax expense	9	**(915)**	(946)
Profit for the financial year		**$ 4,151**	$ 4,028

Net revenues and profit before taxation of the company are derived from continuing operations in the current and prior years.

Statement of Comprehensive Income

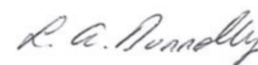
$ in millions	Note	Year Ended December 2023	2022
Profit for the financial year		**$ 4,151**	$ 4,028
Other comprehensive income			
Items that will not be reclassified subsequently to profit or loss			
Actuarial loss relating to the pension scheme	15	**(118)**	(246)
Debt valuation adjustment	20	**(183)**	301
U.K. deferred tax attributable to the components of other comprehensive income	16	**85**	(19)
U.K. current tax attributable to the components of other comprehensive income		**(1)**	(1)
Other comprehensive income/(loss) for the financial year, net of tax		**(217)**	35
Total comprehensive income for the financial year		**$ 3,934**	$ 4,063

The accompanying notes are an integral part of these financial statements.

Balance Sheet

$ in millions	Note	As of December 2023	2022
Assets			
Cash and cash equivalents	25	**$ 35,689**	$ 11,707
Collateralised agreements	10	**262,817**	235,796
Customer and other receivables	11	**72,888**	78,967
Trading assets (includes **$58,352** and $20,708 pledged as collateral)	12	**828,362**	872,810
Investments (includes **$25** and $3 pledged as collateral)	13	**289**	280
Loans		**174**	222
Other assets	14	**3,336**	3,259
Total assets		**$ 1,203,555**	$ 1,203,041
Liabilities			
Collateralised financings	18	**$ 215,476**	$ 124,735
Customer and other payables	19	**115,201**	110,983
Trading liabilities	12	**737,610**	844,313
Unsecured borrowings	20	**90,267**	76,205
Other liabilities	21	**4,882**	4,596
Total liabilities		**1,163,436**	1,160,832
Shareholder's equity			
Share capital	22	**598**	598
Share premium account		**5,568**	5,568
Other equity instruments	23	**5,500**	8,300
Retained earnings		**28,800**	27,870
Accumulated other comprehensive income		**(347)**	(127)
Total shareholder's equity		**40,119**	42,209
Total liabilities and shareholder's equity		**$ 1,203,555**	$ 1,203,041

The financial statements were approved by the Board on March 20, 2024 and signed on its behalf by:



L. A. Donnelly
Director
March 22, 2024

The accompanying notes are an integral part of these financial statements.
Company number: 02263951

Statement of Changes in Equity

$ in millions	Note	Year Ended December 2023	2022
Share capital			
Beginning balance		**$ 598**	$ 598
Ending balance		**598**	598
Share premium account			
Beginning balance		**5,568**	5,568
Ending balance		**5,568**	5,568
Other equity instruments			
Beginning balance		**8,300**	8,300
Repurchase of Additional Tier 1 notes	23	**(2,800)**	—
Ending balance		**5,500**	8,300
Retained earnings			
Beginning balance		**27,870**	24,590
Profit for the financial year		**4,151**	4,028
Transfer of realised debt valuation adjustment into retained earnings, net of tax	20	**3**	1
Difference between carrying value and fair value of repurchased Additional Tier 1 notes	23	**527**	—
Interest on Additional Tier 1 notes	23	**(643)**	(749)
Cash dividends paid	24	**(1,684)**	—
Non-cash distribution	24	**(1,424)**	—
Share-based payments		**334**	650
Management recharge related to share-based payments		**(334)**	(650)
Ending balance		**28,800**	27,870
Accumulated other comprehensive income			
Beginning balance		**(127)**	(161)
Other comprehensive income/(loss)		**(217)**	35
Transfer of realised debt valuation adjustment into retained earnings, net of tax	20	**(3)**	(1)
Ending balance		**(347)**	(127)
Total shareholder's equity		**$ 40,119**	$ 42,209

See Note 24 for information about dividends and distributions.

The accompanying notes are an integral part of these financial statements.

Statement of Cash Flows

		Year Ended December	
$ in millions	**Note**	**2023**	2022
Cash flows from operating activities			
Cash generated from/(used in) operations	25	**$ 27,672**	$ (31,721)
Taxation received		**1**	4
Taxation paid		**(515)**	(701)
Net cash from/(used in) operating activities		**27,158**	(32,418)
Cash flows from investing activities			
Capital expenditure for property, leasehold improvements and equipment and intangible assets		**(223)**	(249)
Purchase of investments		**—**	(26)
Proceeds from sales of investments		**17**	136
Net cash used in investing activities		**(206)**	(139)
Cash flows from financing activities			
Repurchase of Additional Tier 1 notes	25	**(2,273)**	—
Repayment of MREL-eligible intercompany loans	25	**—**	(1,500)
Receipts from issuing long-term subordinated loans	25	**1,500**	—
Interest paid on Additional Tier 1 notes	25	**(643)**	(749)
Interest paid on subordinated loans and MREL-eligible intercompany loans	25	**(1,623)**	(693)
Cash dividends paid	24	**(1,684)**	—
Payments for lease liabilities		**(2)**	(1)
Net cash used in financing activities		**(4,725)**	(2,943)
Net increase/(decrease) in cash and cash equivalents, net of overdrafts		**22,227**	(35,500)
Cash and cash equivalents, net of overdrafts, beginning balance		**11,639**	52,408
Foreign exchange gains/(losses) on cash and cash equivalents, net of overdrafts		**1,586**	(5,269)
Cash and cash equivalents, net of overdrafts, ending balance	25	**$ 35,452**	$ 11,639

See Note 28 for information about non-cash activities related to the transfer of the company's U.K. asset management business.

The accompanying notes are an integral part of these financial statements.

Note 1.

General Information

The company is a private unlimited company and is incorporated and domiciled in England and Wales. The address of its registered office is Plumtree Court, 25 Shoe Lane, London, EC4A 4AU, United Kingdom.

The company's immediate parent undertaking is Goldman Sachs Group UK Limited (GSG UK), a company incorporated and domiciled in England and Wales. GSG UK together with its consolidated subsidiaries form "GSG UK Group".

The ultimate controlling undertaking and the parent company of the smallest and largest group for which consolidated financial statements are prepared is The Goldman Sachs Group, Inc., a company incorporated in the United States of America. Copies of its consolidated financial statements, as well as certain regulatory filings, for example Quarterly Reports on Form 10-Q and the Annual Report on Form 10-K, that provide further information about GS Group and its business activities, can be obtained from Investor Relations, 200 West Street, New York, NY 10282, United States of America, GS Group's principal place of business, or at www.goldmansachs.com/investor-relations.

Basel III Pillar 3 Disclosures

The company is included in the consolidated Pillar 3 disclosures of GSG UK, as required by the U.K. capital framework. GSG UK's December 2023 Pillar 3 disclosures will be made available in conjunction with the publication of its consolidated financial information at www.goldmansachs.com/disclosures.

Country-by-Country Reporting

The company is included in the consolidated country-by-country reporting disclosures of GSG UK, as required by the Capital Requirements (Country-by-Country Reporting) Regulations 2013. GSG UK's December 2023 Country-by-Country Reporting will be made available by December 31, 2024 at www.goldmansachs.com/disclosures.

Note 2.

Basis of Preparation

Statement of Compliance

These financial statements have been prepared in accordance with U.K.-adopted international accounting standards, the requirements of the Companies Act 2006, as applicable to companies reporting under those standards, and International Financial Reporting Standards (IFRS) adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the E.U. (IFRS as it applies in the E.U.).

As of and for the year ended December 2023, U.K.-adopted international accounting standards, applicable to the company, were consistent with IFRS as it applies in the E.U.

These financial statements have been prepared under the historical cost basis (modified as explained in "Financial Assets and Liabilities" and "Pension Arrangements" below).

Going Concern

These financial statements have been prepared on a going concern basis. The directors are satisfied that the company has sufficient capital and resources to continue to operate for a period of at least twelve months from the date of approval of these financial statements. In reaching this conclusion, the directors have considered the financial results of the company, its capital management activities and liquidity as set out in Part I of this annual report.

Consolidation

The company has elected not to prepare consolidated financial statements as permitted by Section 402 of the Companies Act 2006 as its subsidiaries are not material for the purpose of giving a true and fair view. These financial statements are separate financial statements.

Note 3.

Material Accounting Policies

New Standards, Amendments and Interpretations
Amendments to IAS 1 'Presentation of Financial Statements' (IAS 1) and IFRS Practice Statement 2 'Making Materiality Judgements' and IAS 12 'Income Taxes' (IAS 12). The company has applied the following amendments:

- **Disclosure of Accounting Policies (Amendments to IAS 1 and to IFRS Practice Statement 2 'Making Materiality Judgements').** This amendment requires the disclosure of material accounting policies, replacing the requirement to disclose significant accounting policies. This amendment had a limited impact on the company's accounting policies disclosures, but did not have any impact on the amounts recognised in the financial statements.
- **International Tax Reform – Pillar Two Model Rules (Amendments to IAS 12).** This amendment was introduced in response to the Organisation for Economic Co-operation and Development Global Anti-Base Erosion Model Rules (Pillar Two), providing a mandatory temporary exception to recognise and disclose information about deferred tax assets and liabilities related to Pillar Two income taxes and requiring disclosure of known or reasonable estimable information about an entity's exposure to Pillar Two income taxes. See Note 9 'Income Tax Expense' for the company's Pillar Two Model Rules disclosure.

Accounting Policies
Revenue Recognition. Net revenues include the net profit arising from transactions, with both third parties and affiliates, in derivatives, securities and other financial instruments, and fees and commissions. This is inclusive of associated interest and dividends.

Financial Assets and Liabilities Measured at Fair Value Through Profit or Loss
Financial assets and liabilities measured at fair value through profit or loss are recognised at fair value with realised and unrealised gains and losses, as well as associated interest and dividend income and expenses included in net revenues, with the exception of changes in the fair value of financial liabilities designated at fair value through profit or loss attributable to own credit spreads (debt valuation adjustment or DVA), which is recognised in other comprehensive income, unless this would create or enlarge an accounting mismatch in profit or loss. Financial assets are marked to bid prices and financial liabilities are marked to offer prices. Fair value measurements do not include transaction costs. The company measures certain financial assets and liabilities as a portfolio (i.e., based on its net exposure to market and/or credit risks).

Unrealised gains and losses related to the change in fair value of financial assets and liabilities measured at fair value through profit or loss are recognised from trade date in net revenues or other comprehensive income in the case of DVA.

Contractual interest is included in interest income and expense for all instruments other than hybrid financial instruments at fair value through profit or loss, for which contractual interest is included in gains and losses from financial instruments measured at fair value through profit or loss.

Revenue from Contracts with Customers
Revenues earned from contracts with customers for services, such as investment banking, investment management, and execution and clearing (contracts with customers) are recognised when the performance obligations related to the underlying transaction are completed.

Where the company recognises revenues in its capacity as principal to a transaction and incurs expenses to satisfy some or all of its performance obligations under these transactions, it is required by IFRS 15 'Revenue from Contracts with Customers' (IFRS 15) to report these revenues gross of the associated expenses. Such revenue is included in net revenues and such expenses are included in transaction based and other expenses (known hereafter as "IFRS 15 expenses").

The company is principal to the transaction if it has the primary obligation to provide the service to the customer. The company satisfies the performance obligation by itself, or by engaging other GS Group affiliates to satisfy some or all of its performance obligations on its behalf.

Net revenues are recognised as follows:

- **Financial Advisory and Underwriting**
  Fees from financial advisory and underwriting engagements are recognised in profit and loss when the services related to the underlying transactions are completed under the terms of the engagement.
- **Execution and Client Clearing Transactions**
  Revenue from commissions and fees from executing and clearing client transactions on stock, options and futures markets, as well as OTC transactions is recognised in net revenues on the day the trade is executed.
- **Investment Management Services**
  Management fees are recognised on an accrual basis and are generally calculated as a percentage of a fund or a separately managed account's average net asset value. All management fees are recognised over the period that the related service is provided.

  Incentive fees are calculated as a percentage of a fund's return or a percentage of a fund's excess return above a specified benchmark or other performance target. Incentive fees earned from a fund or a separately managed account are recognised 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.

Segment Reporting. The directors manage the company's business activities as a single operating segment and accordingly no segmental reporting has been provided.

Short-Term Employee Benefits. Short-term employee benefits, such as wages and salaries, are measured on an undiscounted basis and accrued as an expense over the period in which the employee renders the service to the company. Provision is made for discretionary year-end compensation whether to be paid in cash or share-based awards where, as a result of company policy and past practice, a constructive obligation exists at the balance sheet date.

Share-Based Payments. Group Inc. issues awards in the form of restricted stock units (RSUs) to the company's employees in exchange for employee services. Group Inc. generally issues new shares of common stock upon delivery of share-based awards and the company has no obligation to settle the awards. The awards are therefore classified as equity settled. As a result the cost of share-based transactions with employees is measured based on the grant-date fair value of the award. The company recognises the grant-date fair value of the award in compensation and benefits in the income statement, with a corresponding credit directly to equity. For share-based awards that do not require future service (i.e., vested awards, which include awards granted to retirement eligible employees), the grant-date fair value is expensed immediately. For share-based awards that require future service, the grant-date fair value is recognised over the relevant service period. Expected forfeitures are included in determining the amount of awards expected to vest and thus the share-based employee compensation expense. Cash dividend equivalents, unless prohibited by regulation, are generally paid on outstanding RSUs.

The company has also entered into a chargeback agreement with Group Inc. under which it is committed to pay to Group Inc., at the delivery date of the shares, an amount in cash equal to (a) the grant-date fair value of those awards and (b) subsequent movements in the fair value of those awards between the grant date and ultimate delivery to employees (subsequent to the vesting date). The company accounts for (a) by recognising a payable to Group Inc. in other liabilities based on the grant-date fair value of the award, with a corresponding debit directly to equity and for (b) by recognising the subsequent movement in the fair value of awards between the grant date and ultimate delivery to employees in compensation and benefits in the income statement, with a corresponding increase or decrease in other liabilities. As a result, the share-based payment transaction and chargeback agreement, in aggregate, gives rise to a total charge to the income statement based on the grant-date fair value of the awards adjusted for subsequent movements in the fair value of those awards up to delivery.

Current and Deferred Taxation. Current tax is calculated on the basis of the tax laws enacted or substantively enacted at the balance sheet date in the countries where the company operates and generates taxable income.

Deferred tax is recognised in respect of all temporary differences that have originated, but not reversed at the balance sheet date, where transactions or events have occurred at that date that will result in an obligation to pay more tax or a right to pay less tax in the future with the following exceptions:

- Deferred tax assets are recognised only to the extent that it is more likely than not that there will be suitable taxable profits from which the future reversal of the underlying temporary differences can be deducted.
- Deferred tax is measured on an undiscounted basis at the tax rates that are expected to apply in the periods in which temporary differences reverse, based on tax rates and laws enacted or substantively enacted at the balance sheet date.

Current tax and deferred tax is generally recognised in the income statement or directly in other comprehensive income according to where the associated gain or loss was recognised. The income tax on interest on AT1 notes is recognised in the income statement.

Dividends and Distributions. Final cash dividends are recognised as a liability and deducted from equity in the period in which the dividends are approved by the company's shareholder. Interim cash dividends are recognised and deducted from equity when paid. Non-cash distributions are recognised and deducted from equity when approved by the company's shareholder.

Cash and Cash Equivalents. This includes cash at bank and highly liquid overnight deposits held in the ordinary course of business.

Foreign Currencies. The company's financial statements are presented in U.S. dollars, which is also the company's functional currency.

Transactions denominated in foreign currencies are translated into U.S. dollars at rates of exchange ruling on the date the transaction occurred. Monetary assets and liabilities, and non-monetary assets and liabilities measured at fair value, denominated in foreign currencies are translated into U.S. dollars at rates of exchange ruling at the balance sheet date. Foreign exchange gains and losses are recognised in profit before taxation.

Financial Assets and Liabilities

Recognition and Derecognition

Financial assets and liabilities, other than cash instruments purchased or sold in regular way transactions, are recognised when the company becomes party to the contractual provisions of the instrument. Financial assets are derecognised when the contractual rights to the cash flows from the financial asset expire or if the company transfers the financial asset and the transfer qualifies for derecognition. A transferred financial asset qualifies for derecognition if the company transfers substantially all the risks and rewards of ownership of the financial asset; or if the company neither transfers nor retains substantially all the risks and rewards of ownership of the financial asset but does not retain control. Financial liabilities are derecognised only when they are extinguished, i.e., when the obligation specified in the contract is discharged or cancelled or expires.

Cash instruments purchased or sold in regular way transactions are recognised and derecognised using settlement date accounting.

Classification and Measurement: Financial Assets

The company classifies financial assets as subsequently measured at amortised cost or fair value through profit or loss on the basis of both the company's business model for managing financial assets and the contractual cash flow characteristics of the financial assets. The business model reflects how the company manages particular groups of assets in order to generate future cash flows. Where the company's business model is to hold the assets to collect contractual cash flows, the company subsequently assesses whether the financial assets' cash flows represent solely payments of principal and interest. Financial assets with embedded derivatives (hybrid instruments) are also subject to the same assessment.

- **Financial assets measured at amortised cost.** Financial assets that are held for the collection of contractual cash flows and have cash flows that represent solely payments of principal and interest are measured at amortised cost. The company considers whether the cash flows represent basic lending arrangements, and where contractual terms introduce exposure to risk or volatility inconsistent with a basic lending arrangement, the financial asset is mandatorily measured at fair value through profit or loss (see below). Financial assets measured at amortised cost are initially measured at fair value plus transaction costs and subsequently at amortised cost using the effective interest method. The effective interest method is a method of calculating the amortised cost of a financial instrument and allocating the interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset or, when appropriate, a shorter period to the net carrying value of the financial asset. When calculating the effective interest rate, the company estimates cash flows considering all contractual terms of the financial asset but does not consider future credit losses. Finance revenue is recorded in net revenues. Financial assets measured at amortised cost include:
  - Cash and cash equivalents;
  - Certain collateralised agreements, which consists of certain resale agreements and the majority of securities borrowed;
  - Customer and other receivables; and
  - Certain other assets, which consists of certain intercompany loans and substantially all miscellaneous receivables and other.
- **Financial assets mandatorily measured at fair value through profit or loss.** Financial assets that are not held for the collection of contractual cash flows and/or do not have cash flows that represent solely payments of principal and interest are mandatorily measured at fair value through profit or loss. Financial assets mandatorily measured at fair value are initially measured at fair value with transaction costs expensed in the income statement. Such financial assets are subsequently measured at fair value with gains or losses recognised in net revenues. Financial assets mandatorily measured at fair value include:
  - Certain collateralised agreements, which consists of substantially all resale agreements and certain securities borrowed;
  - Trading assets, which consists of trading cash instruments and derivatives;
  - Investments;
  - Loans; and
  - Certain other assets, which consists of certain intercompany loans and an investment in a subsidiary.

Classification and Measurement: Financial Liabilities

The company classifies its financial liabilities into the below categories based on the purpose for which they were acquired or originated.

- **Financial liabilities held for trading.** Financial liabilities held for trading are initially measured at fair value and subsequently at fair value through profit or loss, with gains or losses recognised in net revenues. Financial liabilities held for trading include trading liabilities, which consists of:
  - Trading cash instruments; and
  - Derivatives.
- **Financial liabilities designated at fair value through profit or loss.** The company designates certain financial liabilities at fair value through profit or loss. Financial liabilities designated at fair value through profit or loss are initially measured at fair value and subsequently at fair value through profit or loss, with DVA being recognised in other comprehensive income, if it does not create or enlarge an accounting mismatch, and the remaining changes in the fair value being recognised in net revenues. Amounts recognised in other comprehensive income attributable to own credit spreads are not subsequently transferred to the income statement, even upon derecognition of the financial liability. The primary reasons for designating such financial liabilities at fair value through profit or loss are:
  - To eliminate or significantly reduce a measurement or recognition inconsistency that would otherwise arise from measuring assets or liabilities or recognising the gains and losses on them on different bases; and
  - The group of financial liabilities, or financial assets and liabilities, is managed and its performance evaluated on a fair value basis.

  Financial liabilities designated at fair value through profit or loss include:
  - The majority of repurchase agreements;
  - Certain securities loaned;
  - Secured debt securities issued, intercompany loans, bank loans and other borrowings, which consists of hybrid financial instruments, transfers of assets accounted for as financings rather than sales, certain prepaid commodity contracts; and
  - Certain unsecured borrowings, which consists of certain debt securities issued, substantially all other borrowings, certain intercompany loans and certain prepaid commodity contracts.

  Hybrid financial instruments are instruments that contain embedded derivatives that are able to be bifurcated. The company can either bifurcate the embedded derivative from the associated debt or designate the entire hybrid financial instrument at fair value through profit or loss. If the company bifurcates the embedded derivative from the associated debt, the derivative is accounted for at fair value and the host contract is accounted for at amortised cost.
- **Financial liabilities measured at amortised cost.** Financial liabilities measured at amortised cost are initially measured at fair value plus transaction costs and subsequently measured at amortised cost using the effective interest method. See “Financial assets measured at amortised cost” above for further information on the effective interest method. Finance costs, including discounts allowed on issue, are recorded in net interest income and interest expense. Financial liabilities measured at amortised cost include:
  - Certain repurchase agreements and substantially all securities loaned;
  - Certain intercompany loans;
  - Customer and other payables;
  - Certain unsecured borrowings that have not been designated at fair value through profit or loss; and
  - Other liabilities, which primarily consists of compensation and benefits and accrued expenses and other.

Impairment

The company assesses the expected credit losses associated with financial assets measured at amortised cost on a forward-looking basis in accordance with the provisions of IFRS 9. Expected credit losses (ECL) are recorded in net revenues. As of both December 2023 and December 2022, the company’s expected credit losses were not material.

The company’s impairment model is based on changes in credit quality since initial recognition of financial assets measured at amortised cost and incorporates the following three stages:

- **Stage 1.** Financial assets measured at amortised cost that are not credit-impaired on initial recognition and where there has been no significant increase in credit risk since initial recognition. The ECL is measured at an amount equal to the expected credit losses that result from default events possible within the next twelve months.
- **Stage 2**. Financial assets measured at amortised cost where there has been a significant increase in credit risk since initial recognition, however not yet deemed to be credit-impaired. The ECL is measured based on expected credit losses on a lifetime basis.
- **Stage 3.** Financial assets measured at amortised cost that are in default, or are defined as credit-impaired. The ECL is measured based on expected credit losses on a lifetime basis.

Determination of the relevant staging for each financial asset is dependent on the definition of 'significant increase in credit risk' (stage 1 to stage 2) and the definition of 'credit-impaired' (stage 3). The company considers a financial asset to have experienced a significant increase in credit risk when certain quantitative or qualitative conditions are met. The company considers a financial asset to be credit-impaired when it meets Credit Risk's definition of default, which is either when the company considers that the obligor is unlikely to pay its credit obligations to the company in full, without recourse by the company to actions such as realising security (if held), or the obligor has defaulted on a payment and/or is past due more than 90 days.

The ECL is determined by projecting the probability of default, loss given default and exposure at default for each individual exposure. To calculate expected credit losses these three components are multiplied together and discounted back to the reporting date. The discount rate used in the ECL calculation is the original effective interest rate. The probability of default represents the likelihood of a borrower defaulting on its financial obligation. The loss given default is the company's expectation of the extent of loss on the default exposure, and takes into consideration, amongst other things, collateral on the financial asset. The exposure at default is the amount the company expects to be owed at the time the financial obligation defaults. The company uses internal credit risk ratings that reflect the assessment of the probability of default of individual counterparties. The company uses multiple macroeconomic scenarios within the ECL calculation, the weightings for which are subject to ongoing internal review and approval.

The ECL model takes into account the weighted average of a range of forecasts of future economic conditions. The forecasts include baseline, favourable and adverse economic scenarios over a three-year period. To the extent the company has financial assets in Stage 2 or Stage 3 which have an expected life beyond three years, the model reverts to historical loss information based on a non-linear modelled approach. The company applies judgement in weighing individual scenarios each quarter based on a variety of factors, including internally derived economic outlook, market consensus, recent macroeconomic conditions and industry trends.

Forward-looking information, such as key economic variables impacting credit risk and expected credit losses, is incorporated into both the assessment of staging and the calculation of ECL.

The company writes off financial assets, in whole or in part, when it has concluded that there is no reasonable expectation of recovery.

Classification of Financial Liabilities and Equity

Financial liabilities and equity instruments are classified according to the substance of the contractual arrangements. A financial liability is any liability that is a contractual obligation to deliver cash or another financial asset to another entity; or to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the entity. An equity instrument is any contract that evidences a residual interest in the assets of the entity after deducting all liabilities. Instruments are evaluated to determine if they contain both liability and equity components. The initial carrying value of a compound financial instrument is allocated first to the liability component, measured at fair value, and the equity is assigned the residual amount.

Offsetting Financial Assets and Liabilities

Financial assets and liabilities are offset and the net amount presented in the balance sheet where there is:

- Currently a legally enforceable right to set-off the recognised amounts; and
- Intent to settle on a net basis or to realise the asset and settle the liability simultaneously.

Where these conditions are not met, financial assets and liabilities are presented on a gross basis in the balance sheet.

Fair Value Measurement

See Note 30 for details about the fair value measurement of the company's financial assets and liabilities.

Fair Value Hedges

The company applies hedge accounting under IAS 39 'Financial Instruments: Recognition and Measurement' for certain interest rate swaps used to manage the interest rate exposure of certain fixed-rate unsecured long- and short-term borrowings. To qualify for hedge accounting, the derivative hedge must be highly effective at reducing the risk from the exposure being hedged. Additionally, the company must formally document the hedging relationship at inception and assess the hedging relationship at least on a quarterly basis to ensure the derivative hedge continues to be highly effective over the life of the hedging relationship.

The company applies a statistical method that utilises regression analysis when assessing the effectiveness of its fair value 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%. Possible sources of ineffectiveness on these hedges include:

- Differences in timing of cash flows between the hedged item and hedging instrument.
- Differences in discounting between the hedged item and the hedging instrument, as cash collateralised derivatives are discounted using Overnight Indexed Swap discount curves, which are not consistently applied to the hedged item.
- Counterparty credit risk impacting fair value movements on uncollateralised interest rate swaps but not the underlying hedged item.

For qualifying fair value hedges, gains or losses on derivatives and the change in fair value of the hedged item attributable to the hedged risk are included in net revenues. 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 amortised over the remaining life of the hedged item using the effective interest method.

Collateralised Agreements and Collateralised Financings

Collateralised agreements include resale agreements and securities borrowed. Collateralised financings include repurchase agreements, securities loaned, secured debt securities issued, intercompany loans and other borrowings. See "Classification and Measurement: Financial Assets" and "Classification and Measurement: Financial Liabilities" above for details on the classification and measurement of these instruments. Collateral received or posted can be in the form of cash or securities. Cash collateral is recognised/derecognised when received/paid. Collateral posted by the company in the form of securities is not derecognised from the balance sheet, whilst collateral received in the form of securities is not recognised in the balance sheet. If collateral received is subsequently sold, the obligation to return the collateral and the cash received are recognised in the balance sheet.

Pension Arrangements. The company is a sponsor of a defined contribution pension plan, and a hybrid pension plan for the benefit of certain employees. The hybrid pension plan has both a defined benefit section (the Plan) and a defined contribution section. These are accounted for as follows:

- For the defined contribution pension plan and the defined contribution section of the hybrid pension plan, the contributions payable for the period are charged to net operating expenses. Differences between contributions payable for the period and contributions actually paid are shown as either accruals or prepayments in the balance sheet.
- For the Plan, the amounts charged to net operating expenses are any past service costs, administration costs and any gains or losses on settlements and curtailments. These amounts are included in compensation and benefits. The net interest is included in net interest income/(expense). Actuarial gains and losses are recognised immediately in other comprehensive income. Plan assets are measured at fair value and Plan liabilities are measured on an actuarial basis using the projected unit credit method and discounted at a rate equivalent to the current rate of return on a high-quality corporate bond of equivalent currency and term to the Plan liabilities. Full actuarial valuations are obtained at least triennially and updated at each balance sheet date. Any surplus or deficit of Plan assets over Plan liabilities is recognised in the balance sheet as an asset (surplus) or liability (deficit).

Intangible Assets. Intangible assets are stated at cost less accumulated amortisation and provision for impairment. Subject to the recognition criteria in IAS 38 'Intangible Assets' being met, costs incurred during the period that are directly attributable to the development or improvement of new business application software are capitalised as assets in the course of construction. Assets in the course of construction are transferred to computer software once completed and ready for their intended use.

Computer software is amortised on a straight-line basis over its estimated useful life, which is three years. No amortisation is charged on assets in the course of construction. Amortisation is included in net operating expenses and the amortisation policies are reviewed on an annual basis.

Intangible assets are tested for impairment whenever events or changes in circumstances suggest that an asset's or asset group's carrying value may not be fully recoverable.

Provisions, Contingent Liabilities and Contingent Assets. Provisions are recognised in the financial statements when it is probable that an outflow of economic benefits will be required to settle a present (legal or constructive) obligation, which has arisen as a result of past events, and for which a reliable estimate can be made of the amount of the obligation. Legal obligations that may arise as a result of proposed new laws are recognised as obligations only when the legislation is virtually certain to be enacted as drafted.

A contingent liability is a possible obligation that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the company or a present obligation that arises from past events but is not recognised because either an outflow of economic benefits is not probable or the amount of the obligation cannot be reliably measured.

A contingent asset is a possible asset that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the company.

Contingent liabilities and contingent assets are not recognised in the financial statements. However, disclosure is made for contingent liabilities unless the probability of settlement is remote.

Equity Instruments. The company's AT1 notes have been classified as equity instruments. Associated interest is recognised directly in retained earnings when paid.

Note 4.

Critical Accounting Estimates and Judgements

The preparation of financial statements requires management to make judgements, estimates and assumptions that affect the amounts recognised in these financial statements. The nature of estimation means that actual outcomes could differ from those estimates. The following estimates have had the most significant effect on amounts recognised in the financial statements:

Fair Value Measurement

Certain of the company's financial assets and liabilities include significant unobservable inputs (i.e., level 3). See Note 30 for information about the carrying value, valuation techniques and significant inputs of these instruments.

Defined Benefit Pension

The cost of the Plan and the value of the Plan liabilities are determined using actuarial valuations. This involves making assumptions about discount rates, future salary increases, mortality rates and future pension increases. Due to the complexity of the valuation, such estimates are subject to significant uncertainty. See Note 15 for further information about the company's Plan.

Note 5.

Net Revenues

Net revenues include net interest expense and non-interest income. Net interest expense includes interest and dividends on financial instruments measured at fair value and amortised cost.

The table below presents the company's net revenues.

	Year Ended December	
$ in millions	**2023**	2022
Non-interest income		
Financial instruments mandatorily measured at fair value through profit or loss	**$ 13,703**	$ 2,948
Financial instruments designated at fair value through profit or loss	**(3,399)**	7,424
Fees and commissions	**1,886**	2,058
Other income	**1,443**	—
Non-interest income	**13,633**	12,430
Interest income		
Financial instruments measured at fair value through profit or loss	**10,362**	4,013
Financial instruments measured at amortised cost	**12,304**	3,968
Total interest income	**22,666**	7,981
Interest expense		
Financial instruments measured at fair value through profit or loss	**(11,324)**	(4,834)
Financial instruments measured at amortised cost	**(13,773)**	(4,775)
Total interest expense	**(25,097)**	(9,609)
Net interest expense	**(2,431)**	(1,628)
Net revenues	**$ 11,202**	$ 10,802

In the table above:

- Non-interest income from financial instruments mandatorily measured at fair value through profit or loss primarily relates to non-interest gains and losses on trading assets, investments, loans, trading liabilities and certain collateralised agreements.
- Non-interest income from financial instruments designated at fair value through profit or loss primarily relates to non-interest gains and losses on certain unsecured borrowings and collateralised financings.
- Fees and commissions primarily relates to net revenues from certain financial advisory and underwriting engagements, executing and clearing client transactions and certain investment management services.
- Other income primarily includes the gain of $1.42 billion for 2023 related to the transfer of the company's U.K. asset management business. See "Executive Overview — Transfer of U.K. Asset Management Business" in Part I of this annual report for further information.
- Financial instruments designated at fair value through profit or loss are frequently economically hedged with financial instruments measured mandatorily at fair value through profit or loss. Accordingly, gains or losses that are reported in financial instruments designated at fair value through profit or loss can be partially offset by gains or losses reported in financial instruments measured mandatorily at fair value through profit or loss.

Geographic Information

Due to the highly integrated nature of international financial markets, the company manages its businesses based on the net revenues of the enterprise as a whole. The methodology for allocating net revenues to geographic regions is dependent on estimates and management judgement.

Geographic results are generally allocated as follows:

- Investment Banking: location of the client, investment banking team and underlying risk.
- FICC and Equities: location of the market-making desk or the primary market for the underlying security.
- Investment Management: location of the investment management team.

The table below presents the company's net revenues by geographic region allocated based on the methodology referred to above.

	Year Ended December	
$ in millions	**2023**	2022
EMEA	**$ 7,675**	$ 7,451
Americas	**1,763**	1,712
Asia	**1,764**	1,639
Total	**$ 11,202**	$ 10,802

Revenue from Contracts With Customers

The table below presents the company's revenue from contracts with customers subject to IFRS 15, which are included in fees and commissions within non-interest income.

	Year Ended December	
$ in millions	**2023**	2022
Financial advisory and underwriting engagements	**$ 806**	$ 1,111
Execution and client clearing transactions	**573**	521
Investment management services	**507**	426
Total	**$ 1,886**	$ 2,058

Note 6.

Net Operating Expenses

The table below presents the company's net operating expenses.

	Year Ended December	
$ in millions	**2023**	2022
Compensation and benefits	**$ 2,188**	$ 1,906
Transaction based expenses	**1,651**	1,689
Market development	**54**	61
Communications and technology	**137**	147
Depreciation and amortisation	**264**	248
Professional fees	**159**	154
Management charges from GS Group affiliates	**1,139**	1,090
Other expenses	**863**	724
Operating expenses	**6,455**	6,019
Management charges to GS Group affiliates	**(319)**	(191)
Net operating expenses	**$ 6,136**	$ 5,828

In the table above:

- Management charges includes charges relating to operational and administrative support and management services, received from and provided to GS Group affiliates.
- Other expenses primarily includes IFRS 15 expenses, miscellaneous taxes, provisions for liabilities, regulatory fees and charitable contributions.

The table below presents the fees payable to the company's auditors, which are included in professional fees.

	Year Ended December	
$ in millions	**2023**	2022
Audit fees	**$ 5.6**	$ 5.4
Audit related assurance services	**2.3**	2.1
Other assurance services	**1.2**	1.2
Total fees for non-audit services	**3.5**	3.3
Total fees	**$ 9.1**	$ 8.7

In the table above:

- Audit related assurance services primarily related to client money and asset reporting.
- Other assurance services included the company's share of fees related to certain services provided by a network firm of the company's auditors to various GS Group affiliates. These fees were apportioned to the various GS Group affiliates, including the company, by reference to each entity's asset size.

Note 7.

Compensation and Benefits

The table below presents the company's average monthly employee headcount, including executive directors.

	Average for the Year Ended December	
Number	**2023**	2022
Investment Banking	**700**	750
FICC	**690**	773
Equities	**730**	851
Investment Management	**357**	566
Support Functions	**947**	902
Total average headcount	**3,424**	3,842

Total headcount was 3,332 as of December 2023 and 3,882 as of December 2022.

The table below presents compensation and benefits costs incurred by the company, including those relating to directors.

	Year Ended December	
$ in millions	**2023**	2022
Wages and salaries	**$ 1,882**	$ 1,638
Social security costs	**262**	222
Pension costs:		
Defined contribution plan and defined contribution section of the hybrid pension plan	**42**	42
Defined benefit section of the hybrid pension plan	**2**	4
Total	**$ 2,188**	$ 1,906

In the table above, total compensation and benefits included a charge of $216 million for 2023 and a credit of $103 million for 2022 representing changes in the fair value of share-based payment awards recharged from Group Inc. during the year.

Note 8.

Share-Based Payments

Stock Incentive Plan

Group Inc. sponsors a stock incentive plan, The Goldman Sachs Amended and Restated Stock Incentive Plan (2021) (2021 SIP), which provides for, amongst others, grants of RSUs, restricted stock, dividend equivalent rights and incentive stock options, each of which may be subject to terms and conditions, including performance or market conditions. On April 29, 2021, Group Inc.'s shareholders approved the 2021 SIP. The 2021 SIP is a successor to several predecessor stock incentive plans, the first of which was adopted on April 30, 1999, and each of which was approved by Group Inc.'s shareholders. The 2021 SIP is scheduled to terminate on the date of Group Inc.'s annual meeting of shareholders that occurs in 2025.

The company recorded share-based compensation in respect of the amortisation of granted equity awards, net of forfeitures, of $334 million for 2023 and $650 million for 2022. The resultant credit to equity arising from these share-based payments has been offset in equity as a result of the recognition of a liability for amounts arising under the terms of the chargeback agreement with Group Inc. under which the company is committed to pay to Group Inc. the grant-date fair value, as well as subsequent movements in the fair value of those awards to Group Inc. at the time of delivery to its employees.

Restricted Stock Units

Group Inc. grants RSUs (including RSUs subject to performance or market conditions) to the company's 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 GS Group 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 activity related to 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
Year Ended December 2023				
Beginning balance	**872,454**	**3,700,126**	**$ 277.97**	**$ 261.02**
Granted	**574,879**	**572,878**	**$ 308.43**	**$ 317.83**
Forfeited	**(81,263)**	**(25,112)**	**$ 292.33**	**$ 284.72**
Delivered	**—**	**(1,729,787)**	**$ —**	**$ 263.88**
Vested	**(741,438)**	**741,438**	**$ 289.42**	**$ 289.42**
Transfers	**(68,353)**	**76,384**	**$ 292.45**	**$ 295.29**
Ending balance	**556,279**	**3,335,927**	**$ 287.15**	**$ 276.32**
Year Ended December 2022				
Beginning balance	756,025	3,725,700	$ 243.70	$ 223.32
Granted	869,222	1,417,779	$ 301.06	$ 311.74
Forfeited	(132,657)	(68,209)	$ 274.34	$ 249.43
Delivered	—	(2,006,662)	$ —	$ 229.13
Vested	(632,062)	632,062	$ 267.03	$ 267.03
Transfers	11,926	(544)	$ 248.53	$ 235.56
Ending balance	872,454	3,700,126	$ 277.97	$ 261.02

In the table above:

- The weighted average grant-date fair value of RSUs granted was $313.12 during 2023 and $307.68 during 2022. The grant-date fair value of these RSUs included an average liquidity discount of 5.01% during 2023 and 5.6% during 2022, to reflect post-vesting and delivery transfer restrictions, generally of 1 year for both 2023 and 2022.
- The aggregate fair value of awards that vested was $423 million during 2023 and $638 million during 2022.
- The ending balance included RSUs subject to future service requirements and performance or market conditions of 65,942 RSUs as of both December 2023 and December 2022, and the maximum amount of such RSUs that may be earned was 98,914 as of both December 2023 and December 2022.
- The ending balance also included RSUs not subject to future service requirements but subject to performance conditions of 240,909 RSUs as of December 2023 and 223,150 RSUs as of December 2022, and the maximum amount of such RSUs that may be earned was 361,364 RSUs as of December 2023 and 334,726 RSUs as of December 2022.

Note 9.

Income Tax Expense

The table below presents an analysis of the company's income tax expense.

	Year Ended December	
$ in millions	**2023**	2022
Current tax		
U.K. taxation	**$ 493**	$ 532
Adjustments in respect of prior periods	**158**	(6)
Overseas taxation	**250**	232
Total current tax	**901**	758
Deferred tax		
Origination and reversal of temporary differences	**14**	147
Effect of decreased combined U.K. corporation tax rate	**—**	49
Adjustments in respect of prior periods	**—**	(8)
Total deferred tax	**14**	188
Total income tax expense	**$ 915**	$ 946

The table below presents a reconciliation between income tax expense and the amount calculated by applying the weighted average combined U.K. corporation tax rate (including banking surcharge) applicable to the company for 2023 of 27.75% (2022: 27.0%) to profit before taxation. The company's weighted average combined U.K. corporation tax rate for 2023 of 27.75% included three months from January 1, 2023 to March 31, 2023 at 27.0% and nine months from April 1, 2023 to December 31, 2023 at 28.0%.

	Year Ended December	
$ in millions	**2023**	2022
Profit before taxation	**$ 5,066**	$ 4,974
Profit multiplied by combined U.K. corporation tax rate of 27.75% (2022: 27.0%)	**1,406**	1,343
Changes in recognition and measurement of deferred tax assets	**4**	(16)
Non-taxable gain related to transfer of U.K. asset management business	**(395)**	—
Tax deductible on interest on AT1 notes	**(178)**	(202)
Non-taxable income on index-linked government bonds	**(80)**	(239)
Other permanent differences	**(5)**	14
Effect of higher taxes on overseas earnings	**—**	2
Exchange differences and other	**5**	9
Adjustments in respect of prior periods	**158**	(14)
Effect of decreased combined U.K. corporation tax rate	**—**	49
Total income tax expense	**$ 915**	$ 946

In July 2023, the Finance (No. 2) Act 2023 enacted certain provisions of the Organisation for Economic Co-operation and Development Global Anti-Base Erosion Model Rules (Pillar Two), including a Domestic Minimum Top-Up Tax, which will apply to GS Group from January 2024. Pillar Two aims to ensure that multinational companies pay a minimum effective corporate tax rate of 15% in each jurisdiction in which they operate. The company does not expect a material impact to its 2024 annual effective tax rate, absent a significant change in GS Group's U.K. profitability or mix of earnings, based on its current understanding of these rules. The company has applied the exception to recognising and disclosing information about deferred tax assets and liabilities related to Pillar Two income taxes.

The Finance Act 2022, which decreased the bank surcharge applicable to the company from 8.0% to 3.0% from April 1, 2023, was enacted in February 2022. As a result, during 2022, the company's deferred tax assets were remeasured and a deferred tax expense of $49 million was recognised in the income statement. This change, coupled with the increase in the U.K. corporate tax main rate from 19.0% to 25.0% from April 1, 2023, enacted in June 2021, resulted in the combined U.K. corporation tax rate (including banking surcharge) applicable to the company increasing from 27.0% to 28.0% from April 1, 2023.

Note 10.

Collateralised Agreements

The table below presents the company's collateralised agreements.

	As of December	
$ in millions	**2023**	2022
Resale agreements	**$ 126,309**	$ 129,433
Securities borrowed	**136,508**	106,363
Total	**$ 262,817**	$ 235,796

Note 11.

Customer and Other Receivables

The table below presents the company's customer and other receivables.

	As of December	
$ in millions	**2023**	2022
Receivables from broker/dealers and clearing organisations	**$ 14,536**	$ 19,200
Receivables from customers and counterparties	**58,352**	59,767
Total	**$ 72,888**	$ 78,967

In the table above:

- Total customer and other receivables primarily consists of receivables resulting from collateral posted in connection with certain derivative transactions, customer margin loans and balances related to listed derivative activity.
- Receivables from customers and counterparties includes receivables from contracts with customers, which were $114 million as of December 2023 and $170 million as of December 2022.

Note 12.

Trading Assets and Liabilities

Trading assets and liabilities include trading cash instruments and derivatives held in connection with the company's market-making or risk management activities, including securities held for liquidity risk management purposes. Trading assets includes assets pledged as collateral. See Note 29 for further information.

The table below presents the company's trading assets.

	As of December	
$ in millions	**2023**	2022
Trading cash instruments		
Money market instruments	**$ 20**	$ 20
Government and agency obligations	**48,747**	18,301
Mortgage and other asset-backed loans and securities	**225**	198
Corporate debt instruments	**25,998**	20,092
Equity securities	**57,360**	33,670
Commodities	**312**	148
Total trading cash instruments	**132,662**	72,429
Derivatives		
Interest rates	**509,246**	599,737
Credit	**20,668**	19,782
Currencies	**95,575**	111,249
Commodities	**9,002**	19,647
Equities	**61,209**	49,966
Total derivatives	**695,700**	800,381
Total trading assets	**$ 828,362**	$ 872,810

The table below presents the company's trading liabilities.

	As of December	
$ in millions	**2023**	2022
Trading cash instruments		
Government and agency obligations	**$ 27,935**	$ 14,109
Corporate debt instruments	**4,868**	5,532
Equity securities	**32,936**	37,037
Commodities	**11**	16
Total trading cash instruments	**65,750**	56,694
Derivatives		
Interest rates	**486,163**	585,621
Credit	**18,200**	17,453
Currencies	**97,849**	114,335
Commodities	**8,826**	20,207
Equities	**60,822**	50,003
Total derivatives	**671,860**	787,619
Total trading liabilities	**$ 737,610**	$ 844,313

In the tables above:

- 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.
- Equity securities includes public equities and exchange-traded funds.

Note 13.

Investments

Investments includes debt instruments and equity securities that are accounted for at fair value and are generally held by the company in connection with its long-term investing activities. Investments includes assets pledged as collateral. See Note 29 for further information.

The table below presents information about the company's investments.

	As of December	
$ in millions	**2023**	2022
Corporate debt instruments	**$ 51**	$ 45
Equity securities	**238**	235
Total	**$ 289**	$ 280

In the table above:

- Corporate debt instruments primarily includes senior, mezzanine and distressed debt.
- Equity securities consists of the company's public and private equity-related investments in corporate entities.

Note 14.

Other Assets

The table below presents the company's other assets by type.

	As of December	
$ in millions	**2023**	2022
Intercompany loans	**$ 532**	$ 683
Investment in subsidiary	**114**	136
Miscellaneous receivables and other	**1,515**	1,274
Total financial assets	**2,161**	2,093
Property, leasehold improvements and equipment	**5**	5
Intangible assets	**518**	560
Right-of-use assets	**7**	8
Pension surplus (see Note 15)	**—**	40
Deferred tax assets (see Note 16)	**456**	385
Prepayments and accrued income	**35**	43
Tax-related assets	**150**	121
Miscellaneous receivables and other	**4**	4
Total non-financial assets	**1,175**	1,166
Total	**$ 3,336**	$ 3,259

In the table above:

- The company's investment in subsidiary has been measured at fair value in accordance with IFRS 9.
- Miscellaneous receivables and other included in financial assets primarily includes receivables from GS Group affiliates, including receivables for allocation of net revenues among GS Group affiliates for their participation in GS Group's business activities.

Property, Leasehold Improvements and Equipment

The table below presents the movements in property, leasehold improvements and equipment during the current and prior year.

$ in millions	Leasehold improvements	Fixtures, fittings and equipment	Total
Cost			
As of December 2021	$ 16	$ 6	$ 22
Additions	—	—	—
Disposals	**(4)**	**—**	**(4)**
As of December 2022	**12**	**6**	**18**
Additions	**2**	**—**	**2**
Disposals	**—**	**—**	**—**
As of December 2023	**14**	**6**	**20**
Accumulated depreciation			
As of December 2021	9	4	13
Charge for the year	1	—	1
Disposals	**(1)**	**—**	**(1)**
As of December 2022	**9**	**4**	**13**
Charge for the year	**1**	**1**	**2**
Disposals	**—**	**—**	**—**
As of December 2023	**10**	**5**	**15**
Net book value			
As of December 2023	**$ 4**	**$ 1**	**$ 5**
As of December 2022	$ 3	$ 2	$ 5

Leasehold improvements are depreciated over the shorter of the useful economic life of the asset or the remaining life of the lease when the asset is brought into use. Fixtures, fittings and equipment are depreciated on a straight-line basis over their estimated useful lives, which is between 3 to 7 years.

Intangible Assets

The table below presents the movements in intangible assets, related to computer software, during the current and prior year.

$ in millions	Computer software	Assets in the course of construction	Total
Cost			
As of December 2021	$ 843	$ 253	$ 1,096
Additions/Transfers	245	7	252
Disposals	(1)	—	(1)
As of December 2022	**1,087**	**260**	**1,347**
Additions/Transfers	**258**	**(37)**	**221**
Disposals	**(4)**	**—**	**(4)**
As of December 2023	**1,341**	**223**	**1,564**
Accumulated amortisation			
As of December 2021	543	—	543
Charge for the year	245	—	245
Disposals	(1)	—	(1)
As of December 2022	**787**	**—**	**787**
Charge for the year	**261**	**—**	**261**
Disposals	**(2)**	**—**	**(2)**
As of December 2023	**1,046**	**—**	**1,046**
Net book value			
As of December 2023	**$ 295**	**$ 223**	**$ 518**
As of December 2022	$ 300	$ 260	$ 560

Note 15.

Pension Arrangements

The company sponsors a pension plan with a hybrid structure, having both a defined benefit section (the Plan) and a defined contribution section. The Plan provides retirement benefits on the basis of members' final salary, with a normal retirement age of 65 for most members. The Plan is funded, with the assets of the scheme held separately from those of the company, in separate trustee-administered funds.

The Plan was closed to new entrants with effect from April 1, 2008, and was replaced by a defined contribution plan. As of March 31, 2016, the Plan was closed to future benefit accruals for existing participants.

The Plan operates under trust law and is managed and administrated by the Goldman Sachs UK Retirement Plan Trustee Limited (the Trustee) on behalf of the members and beneficiaries in accordance with the terms of the Trust Deed and Rules and relevant legislation. The Trustees act on behalf of the members and beneficiaries and have the responsibility for setting the investment strategy and agreeing funding requirements with the company through the valuation process.

A full actuarial valuation of the Plan was carried out by a qualified independent actuary as of December 31, 2023 using the projected unit credit method based upon membership data as of July 31, 2022. As of December 2023, Plan liabilities consisted of 91% in respect of future beneficiaries and 9% in respect of current beneficiaries. As of December 2022, Plan liabilities consisted of 92% in respect of future beneficiaries and 8% in respect of current beneficiaries.

There is no asset ceiling imposed on the amount of pension surplus recognised in the financial statements as the company is able to utilise the Plan surplus in the scenarios set out in "IFRIC 14 - IAS 19 - The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction".

Several valuations are prepared for the Plan, including valuations on an accounting basis (in line with IFRS), on a funding basis (used by the Trustees to manage the funding of the Plan) and on a discontinuance basis (used to determine the funding level if the Plan were to wind up immediately). The two main differences between the accounting valuation and funding valuation is the method used to determine the discount rate assumption and the margins of prudence required.

Investment Strategy of the Plan

The Plan may make use of three key types of investments as considered appropriate at various stages of the Plan's life:

- A range of instruments that provide a broad match to changes in liability values.
- A portfolio of secure income assets.
- A diversified portfolio of return-seeking assets.

The Plan Trustees monitor the liability profile of the Plan and regularly review the appropriateness of its investment strategy in relation to the nature and duration of the Plan's liabilities.

The Plan Trustees have a long-term asset allocation strategy to invest 41% of assets in return seeking investments (such as equity funds/indices, alternative investments and fixed income securities) and 59% in liability matching assets (such as Gilts, swaps and resale/repurchase agreements). The primary objective of the Plan's hedging programme is to hedge the majority of the Plan's interest rate and inflation exposure based on the funding valuation of Plan liabilities.

Risks of the Plan

The main risks of the Plan are:

- **Funding Shortfall.** Additional contributions will be required if the investment returns are not sufficient to pay for benefits. The level of equity returns will be a key determinant of overall investment return; the investment portfolio is also subject to a range of other risks typical of the asset classes held, in particular interest rate risk and inflation risk on bonds.
- **Asset Volatility.** A consequence of the Plan's investment strategy, with a significant proportion of the assets invested in equities and other return-seeking assets, is that the difference between Plan assets and Plan liabilities may be volatile. In addition, whilst liability matching instruments contribute to volatility in Plan assets due to changes in market conditions (see below), they seek to minimise the difference between Plan assets and Plan liabilities. In the event of market volatility, the Plan has put in place a revolving credit facility with a GS Group affiliate to mitigate the risk of having to sell assets in distressed markets to meet collateral calls.
- **Plan Liabilities Sensitivity.** Plan liabilities are sensitive to the assumptions made about future inflation and life expectancy. It is also sensitive to the discount rate, which depends on market yields on sterling-denominated AA corporate bonds.

Financial and Mortality Assumptions

The table below presents the significant financial and mortality assumptions used to determine the present value of the defined benefit obligation.

% per annum, except mortality assumptions	As of December 2023	2022
Financial Assumptions		
Discount rate	**4.70**	4.89
Rate of price inflation – RPI	**3.22**	3.35
Rate of price inflation – CPI	**2.72**	2.85
Rate of increase in pensions in payments (post-November 30, 1996 accrual)	**3.02**	3.15
Rate of increase in pensions in deferment (post-November 30, 1996 accrual)	**2.72**	2.85
Rate of increase in pensions in deferment (post-April 5, 2009 accrual)	**2.50**	2.50
Mortality Assumptions		
Life expectancy at 65 for a member currently at 65:		
Males	**23.8 years**	24.3 years
Females	**25.2 years**	25.6 years
Life expectancy at 65 for a member currently at 45:		
Males	**25.0 years**	25.5 years
Females	**26.5 years**	26.9 years

In the table above, the mortality assumptions adopted as of December 2023 were the "SAPS S3 very light (All Pensioners) series" base table with an allowance for future improvements from 2013 onwards in line with the CMI 2022 core projections with a long-term rate of improvement of 1.25% per annum and an initial addition to mortality improvement parameter of 0.50% per annum. This assumption allows for no weighting on mortality experience in 2020 and 2021, and only 25% on experience in 2022 in light of higher than expected mortality experienced during the COVID-19 pandemic.

Reconciliation of Pension Surplus/(Deficit)

The table below presents a reconciliation of Plan assets, Plan liabilities and the net pension surplus/(deficit).

$ in millions	Plan assets	Plan liabilities	Net pension surplus/ (deficit)
Year Ended December 2023			
As of January 1, 2023	**$ 1,233**	**$ (1,193)**	**$ 40**
Administrative cost	**—**	**(3)**	**(3)**
Interest income/(expense)	**62**	**(60)**	**2**
Return on Plan assets less than discount rate	**(77)**	**—**	**(77)**
Actuarial loss – liability experience	**—**	**(31)**	**(31)**
Actuarial gain/(loss) – financial assumptions	**—**	**(26)**	**(26)**
Actuarial gain – demographic assumptions	**—**	**16**	**16**
Benefits paid	**(15)**	**15**	**—**
Foreign exchange gain/(loss)	**70**	**(71)**	**(1)**
As of December 31, 2023	**$ 1,273**	**$ (1,353)**	**$ (80)**
Year Ended December 2022			
As of January 1, 2022	$ 3,249	$ (2,938)	$ 311
Administrative cost	—	(2)	(2)
Interest income/(expense)	57	(51)	6
Return on Plan assets less than discount rate	(1,733)	—	(1,733)
Actuarial loss – liability experience	—	(172)	(172)
Actuarial gain/(loss) – financial assumptions	—	1,657	1,657
Actuarial gain – demographic assumptions	—	2	2
Benefits paid	(22)	22	—
Foreign exchange gain/(loss)	(318)	289	(29)
As of December 31, 2022	$ 1,233	$ (1,193)	$ 40

The company's net pension surplus of $40 million as of December 2022 decreased to a deficit of $80 million as of December 2023, primarily due to the impact of credit spreads tightening on the discount rate used in the accounting valuation of Plan liabilities.

Fair Value of Plan Assets

The table below presents the fair value of Plan assets.

$ in millions	Quoted	Unquoted	Total
As of December 2023			
Equity funds/indices	**$ 96**	**$ —**	**$ 96**
Gilts and resale/repurchase agreements	**1,259**	**(526)**	**733**
Swaps	**—**	**11**	**11**
Cash and cash equivalents	**183**	**—**	**183**
Other	**133**	**117**	**250**
Total	**$ 1,671**	**$ (398)**	**$ 1,273**
As of December 2022			
Equity funds/indices	$ 199	$ —	$ 199
Gilts and resale/repurchase agreements	850	(285)	565
Swaps	—	(334)	(334)
Cash and cash equivalents	517	—	517
Other	154	132	286
Total	$ 1,720	$ (487)	$ 1,233

In the table above, other primarily consists of investments in alternative investments and fixed income securities.

Defined Benefit Cost

The table below presents the defined benefit loss/(gain) related to the Plan recognised in the income statement and in other comprehensive income.

$ in millions	Year Ended December 2023	2022
Income statement		
Administrative cost	**$ 3**	$ 2
Interest income	**(2)**	(6)
Total charged/(credited) to the income statement	**1**	(4)
Other comprehensive income		
Return on Plan assets less than discount rate	**77**	1,733
Actuarial loss – liability experience	**31**	172
Actuarial loss/(gain) – financial assumptions	**26**	(1,657)
Actuarial gain – demographic assumptions	**(16)**	(2)
Total loss recognised in other comprehensive income	**118**	246
Total defined benefit loss	**$ 119**	$ 242

Sensitivity Analysis

The table below presents a sensitivity analysis of Plan liabilities for each significant actuarial assumption.

	Impact to Plan Liabilities			
	Increase in assumption		Decrease in assumption	
	$ in millions	%	$ in millions	%
As of December 2023				
0.25% change in discount rate	**$ (77)**	**(5.7)**	**$ 83**	**6.1**
0.25% change in price inflation	**$ 65**	**4.8**	**$ (61)**	**(4.5)**
1 year change in life expectancy	**$ 37**	**2.7**	**$ (39)**	**(2.9)**
As of December 2022				
0.25% change in discount rate	$ (71)	(6.0)	$ 76	6.4
0.25% change in price inflation	$ 59	4.9	$ (55)	(4.6)
1 year change in life expectancy	$ 31	2.6	$ (33)	(2.8)

In the table above, the sensitivities are based on a change in each assumption while holding all other assumptions constant.

There are inherent limitations in the sensitivity analysis, as such idiosyncratic movements are unlikely to occur. The methodology used to calculate the sensitivities is consistent across the two periods presented in the table above.

Nature of Future Cash Flows

Since the Plan's closure to future accruals from March 31, 2016, the company has ceased to make regular contributions into the Plan but will continue to assess the funding requirements of the Plan with the Trustees on a periodic basis.

On a triennial basis, a formal funding valuation of the Plan is performed for the Trustees to assess the funding needs of the Plan. This valuation differs from the actuarial valuation required for accounting purposes due to the use of different assumptions.

The most recent triennial funding valuation of the Plan was performed by a qualified independent actuary as of December 31, 2021, which indicated that the Plan was in a funding surplus of $383 million. During 2023, the estimated funding valuation of the Plan has improved from a deficit of $60 million as of December 2022 to a deficit of $36 million as of December 2023, following a significant decrease in 2022. The next formal funding valuation of the Plan is due as of December 31, 2024. If the funding valuation is still in a deficit as of December 31, 2024, the company and the Trustees will agree a plan to remediate any deficit.

As of December 2023, the company expected $13 million of benefits to be paid out of the Plan to members in 2024 and as of December 2022, the company expected $22 million to be paid out of the Plan to members in 2023.

The weighted average duration of Plan liabilities was approximately 25 years as of December 2023 and approximately 26 years as of December 2022.

Note 16.

Deferred Tax Assets

The table below presents the components of the company's deferred tax assets.

	As of December	
$ in millions	**2023**	2022
Deferred compensation	**$ 544**	$ 576
Post-retirement benefits	**22**	(11)
Property, leasehold improvements and equipment and intangible assets	**(139)**	(149)
Debt valuation adjustment	**21**	(31)
Intercompany secured funding	**2**	1
Other temporary differences	**6**	(1)
Total	**$ 456**	$ 385

The table below presents changes in each component of the company's deferred tax assets.

	Year ended December	
$ in millions	**2023**	2022
Deferred compensation		
Beginning balance	**$ 576**	$ 816
Transfer to the income statement	**(32)**	(240)
Ending balance	**$ 544**	$ 576
Post-retirement benefits		
Beginning balance	**$ (11)**	$ (103)
Transfer to the income statement	**—**	25
Transfer to other comprehensive income	**33**	67
Ending balance	**$ 22**	$ (11)
Property, leasehold improvements and equipment and intangible assets		
Beginning balance	**$ (149)**	$ (161)
Transfer to the income statement	**10**	12
Ending balance	**$ (139)**	$ (149)
Debt valuation adjustment		
Beginning balance	**$ (31)**	$ 55
Transfer to other comprehensive income	**52**	(86)
Ending balance	**$ 21**	$ (31)
Intercompany secured funding		
Beginning balance	**$ 1**	$ (12)
Transfer to the income statement	**1**	13
Ending balance	**$ 2**	$ 1
Other temporary differences		
Beginning balance	**$ (1)**	$ (3)
Transfer to the income statement	**7**	2
Ending balance	**$ 6**	$ (1)
Total		
Beginning balance	**$ 385**	$ 592
Transfer to the income statement (see Note 9)	**(14)**	(188)
Transfer to other comprehensive income	**85**	(19)
Ending balance	**$ 456**	$ 385

In the tables above, deferred compensation is mainly in respect of share-based compensation.

Note 17.

Interests in Other Entities

The table below presents the subsidiaries over which the company exercised control as of both December 2023 and December 2022.

Name of company	Country of incorporation	Holding and proportion of voting rights	Class of shares held	Shares held	Nature of business
Goldman Sachs (Cayman) Limited	Cayman Islands	100%	Ordinary shares	250	Financial services
Griffin Trust	South Africa	*	*	*	Financial services

* This subsidiary undertaking is controlled other than through voting rights attached to shares.

The registered office addresses of the company's subsidiaries as of December 2023 are:

- Goldman Sachs (Cayman) Limited: the offices of Maples Corporate Services Limited, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands.
- Griffin Trust: 1st Floor, Boundary Place, 18 Rivonia Road, Illovo, Sandton, Gauteng, 2196, South Africa.

The company has interests in a number of special purpose entities and capital guaranteed funds which do not meet the definition of a legal subsidiary, but give rise to the risks and rewards that are, in substance, no different than if they were legal subsidiaries. The activities of these special purpose entities and capital guaranteed funds consist of the issuance of loan notes under the terms of a repackaging programme. These special purposes entities and capital guaranteed funds are consolidated in the financial statements of Group Inc.

Unconsolidated Structured Entities

The company has interests in structured entities that it does not control (unconsolidated structured entities), which primarily includes: senior and subordinated debt; derivatives and guarantees. Structured entities generally finance the purchase of assets by issuing debt securities that are either collateralised by or indexed to the assets held by the structured entity. The debt securities issued by a structured entity may include tranches of varying levels of subordination. The company's involvement with structured entities primarily includes the purchase and sale of beneficial interests issued by mortgage-backed structured entities in connection with market-making activities and derivatives the company has entered into with structured entities, such as total return swaps. In certain instances, the company provides guarantees, including derivative guarantees, to unconsolidated structured entities or holders of interests in unconsolidated structured entities.

The table below presents a summary of the unconsolidated structured entities in which the company holds interests.

	As of December	
$ in millions	**2023**	2022
Assets in structured entities	**$ 4,237**	$ 4,106
Carrying value of interests - assets	**$ 571**	$ 527
Carrying value of interests - liabilities	**$ (58)**	$ (44)
Maximum exposure to loss	**$ 3,938**	$ 3,835

In the table above:

- The carrying values of the company's interests are included in the balance sheet in trading assets or trading liabilities.
- The company's maximum exposure to loss is mainly a result of derivatives, commitments and guarantees, for which the maximum exposure to loss is the notional amount, which does not represent anticipated losses and also has not been reduced by unrealised losses already recorded. As a result, the maximum exposure to loss exceeds liabilities recorded for derivatives, commitments and guarantees.

Note 18.

Collateralised Financings

The table below presents the company's collateralised financings.

	As of December	
$ in millions	**2023**	2022
Repurchase agreements	**$ 124,125**	$ 80,172
Securities loaned	**76,018**	31,019
Intercompany loans	**7,884**	7,027
Debt securities issued	**2,004**	2,393
Bank loans	**71**	—
Other borrowings	**5,374**	4,124
Total	**$ 215,476**	$ 124,735

In the table above, intercompany loans, debt securities issued, bank loans and other borrowings are secured by securities which have been pledged as collateral. This pledged collateral is either recognised in trading assets or collateralised agreements.

Note 19.

Customer and Other Payables

The table below presents the company's customer and other payables.

	As of December	
$ in millions	**2023**	2022
Payables to broker/dealers and clearing organisations	**$ 1,305**	$ 3,133
Payables to customers and counterparties	**113,896**	107,850
Total	**$ 115,201**	$ 110,983

In the table above, total customer and other payables primarily consists of cash collateral received in connection with certain derivative transactions, customer credit balances related to the company's prime brokerage activities and balances related to listed derivative activity.

Note 20.

Unsecured Borrowings

The table below presents the company's unsecured borrowings.

	As of December	
$ in millions	**2023**	2022
Bank loans	**$ 100**	$ 100
Overdrafts	**237**	68
Intercompany loans – non-MREL-eligible	**32,474**	19,519
Intercompany loans – MREL-eligible	**16,791**	16,774
Debt securities issued	**25,022**	26,929
Subordinated loans	**6,924**	5,407
Other borrowings	**8,719**	7,408
Total	**$ 90,267**	$ 76,205

In the table above:

- Payments on debt securities issued and other borrowings instruments are typically referenced to underlying financial assets, which are predominately interest rates, equities and currencies-related.
- Subordinated loans of $6.92 billion as of December 2023 and $5.41 billion as of December 2022 consists of long-term loans of $6.88 billion as of December 2023 and $5.38 billion as of December 2022 from GSG UK and associated accrued interest. These loans are unsecured and carry interest at a margin over the U.S. Federal Reserve's Federal Funds rate. The margin is reset on a periodic basis to reflect changes in GS Group's weighted average cost of debt. These loans constitute Tier 2 regulatory capital as approved by the PRA and are repayable subject to PRA approval. These loans are repayable between December 26, 2029 and September 9, 2030.

Debt Valuation Adjustment

The company calculates the fair value of debt securities issued that are designated at fair value through profit or loss by discounting future cash flows at a rate which incorporates GS Group's credit spreads. The table below presents information about the company's cumulative net pre-tax DVA gains/(losses) on such financial liabilities, which is included in accumulated other comprehensive income.

	Year Ended December	
$ in millions	**2023**	2022
Beginning balance	**$ 111**	$ (188)
Debt valuation adjustment for the year	**(183)**	301
Transfer to retained earnings	**(4)**	(2)
Ending balance	**$ (76)**	$ 111

In the table above, net gains of $4 million ($3 million, net of tax) for 2023 and net gains of $2 million ($1 million, net of tax) for 2022 realised upon early redemption of certain such financial liabilities, have been transferred from accumulated other comprehensive income to retained earnings.

Hedge Accounting

The company designates certain interest rate swaps as fair value hedges that are used to manage the interest rate exposure of certain fixed-rate unsecured long- and short-term debt. These interest rate swaps hedge changes in fair value attributable to the relevant benchmark interest rate (e.g., EURIBOR), effectively converting fixed-rate obligations into floating-rate obligations.

The carrying value of hedging instruments, classified in derivatives within trading assets in the balance sheet, was $2 million as of December 2023 and $3 million as of December 2022.

The table below presents the notional of hedging instruments by contractual maturity date.

	As of December	
$ in millions	**2023**	2022
1 – 3 months	**$ —**	$ —
3 months – 1 year	**532**	—
1 – 5 years	**1,070**	1,519
Greater than 5 years	**1,411**	1,810
Total	**$ 3,013**	$ 3,329

The average fixed rate of the company's hedging instruments was 0.97% for 2023 and 2.05% for 2022.

The table below presents the carrying value of hedged items that are designated in a 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
As of December 2023		
Unsecured short-term borrowings	**$ 530**	**$ —**
Unsecured long-term borrowings	**$ 2,227**	**$ (201)**
As of December 2022		
Unsecured short-term borrowings	$ 8	$ —
Unsecured long-term borrowings	$ 2,866	$ (291)

In addition, cumulative hedging adjustments for items no longer designated in a hedging relationship was $6 million as of December 2023 and $8 million as of December 2022.

The table below presents the company's gains/(losses) from interest rate derivatives accounted for as hedges, the related hedged borrowings and the hedge ineffectiveness on these derivatives recognised in net revenues.

	Year Ended December	
$ in millions	**2023**	2022
Interest rate hedges	**$ 85**	$ (363)
Hedged borrowings	**(99)**	341
Hedge ineffectiveness	**$ (14)**	$ (22)

Note 21.

Other Liabilities

The table below presents the company's other liabilities by type.

	As of December	
$ in millions	**2023**	2022
Compensation and benefits	**$ 1,981**	$ 2,000
Income tax-related liabilities	**294**	240
Lease liabilities	**7**	9
Accrued expenses and other	**1,952**	1,949
Total financial liabilities	**4,234**	4,198
Income tax-related liabilities	**197**	3
Other taxes and social security costs	**371**	395
Pension deficit (see Note 15)	**80**	—
Total non-financial liabilities	**648**	398
Total	**$ 4,882**	$ 4,596

In the table above, accrued expenses and other includes contract liabilities, which represent consideration received by the company in connection with its contracts with customers prior to providing the service. As of both December 2023 and December 2022, contract liabilities were not material.

Provisions

The table below presents provisions, which are in respect of legal and regulatory proceedings in which the company is involved.

$ in millions	
As of December 2021	$ 1
Charge during the year	8
Utilised during the year	(9)
As of December 2022	$ —
Charge during the year	—
Utilised during the year	—
As of December 2023	**$ —**

Note 22.

Share Capital

The table below presents the company's share capital.

Allotted, called up and fully paid	Ordinary shares of $1 each	*$ in millions*
As of December 2023	**598,182,053**	**$ 598**
As of December 2022	598,182,053	$ 598
As of December 2021	598,182,053	$ 598

Note 23.

Other Equity Instruments

The table below presents information about the company's unsecured AT1 notes.

Month of issuance	Number of AT1 notes	*$ millions*	Interest rate
June 2017	**5,500**	**$ 5,500**	**9.00% p.a.**
November 2018	**—**	**—**	
As of December 2023	**5,500**	**$ 5,500**	
June 2017	5,800	$ 5,800	9.00% p.a.
November 2018	2,500	2,500	8.67% p.a.
As of December 2022	8,300	$ 8,300	

The company's AT1 notes of $1 million each have been issued to GSG UK. They have no fixed maturity date and are not callable.

The AT1 notes will be irrevocably written-down in the event that the CET1 capital ratio of the company or the GSG UK Group falls below 7%.

During 2023, the company repurchased and cancelled $2.80 billion of its AT1 notes at their fair value of $2.27 billion. The difference between the carrying value and fair value of these repurchased notes of $527 million was recognised in retained earnings.

In addition, the company paid interest of $643 million for 2023 and $749 million for 2022, on its AT1 notes, which was recognised directly in retained earnings. The associated tax effect was recognised in income tax expense.

Note 24.

Dividends and Distributions

During 2023, the company paid cash dividends of $1.68 billion to GSG UK:

- $655 million on May 31, 2023, representing $1.09 per share.
- $1.03 billion on November 30, 2023, representing $1.72 per share.

In addition, during 2023, the company made a non-cash distribution of $1.42 billion to GSG UK, for the consideration it received from the transfer of its U.K. asset management business.

No cash dividends were paid and no distributions were made for 2022.

Note 25.

Statement of Cash Flows Reconciliations

The table below presents the company's cash and cash equivalents, net of overdrafts for the purpose of the statement of cash flows. Overdrafts have been included as they are a part of the company's cash management.

	As of December	
$ in millions	**2023**	2022
Cash and cash equivalents	**$ 35,689**	$ 11,707
Overdrafts (see Note 20)	**(237)**	(68)
Total	**$ 35,452**	$ 11,639

In the table above, cash and cash equivalents included cash that is restricted for use by the company of $2.23 billion as of December 2023 and $2.82 billion as of December 2022.

Reconciliation of Cash Flows From Operating Activities

The table below presents a reconciliation of cash flows from/(used in) operating activities.

	Year Ended December	
$ in millions	**2023**	2022
Profit before taxation	**$ 5,066**	$ 4,974
Adjustments for		
Depreciation and amortisation (see Note 6)	**264**	248
Loss on disposal of intangible assets	**2**	—
Charge/(credit) for defined benefit plan (see Note 15)	**1**	(4)
Foreign exchange losses/(gains)	**(1,566)**	5,243
Share-based compensation expense	**606**	282
Provisions (see Note 21)	**—**	8
Interest on subordinated loans and MREL-eligible intercompany loans	**1,657**	772
Losses/(gains) on investments	**(25)**	8
Gain related to transfer of U.K. asset management business	**(1,424)**	—
Cash generated before changes in operating assets and liabilities	**4,581**	11,531
Changes in operating assets		
Decrease/(increase) in collateralised agreements	**(27,021)**	21,570
Decrease in customer and other receivables	**6,079**	7,168
Decrease/(increase) in trading assets	**44,448**	(130,572)
Decrease in loans	**48**	176
Decrease/(increase) in other assets	**(141)**	697
Changes in operating assets	**23,413**	(100,961)
Changes in operating liabilities		
Increase/(decrease) in collateralised financings	**90,741**	(79,804)
Increase/(decrease) in customer and other payables	**4,218**	(8,900)
Increase/(decrease) in trading liabilities	**(106,703)**	149,331
Increase/(decrease) in unsecured borrowings	**12,178**	(1,940)
Decrease in other liabilities	**(756)**	(978)
Changes in operating liabilities	**(322)**	57,709
Cash generated from/(used in) operations	**$ 27,672**	$ (31,721)

In the table above:

- Cash generated from/(used in) operations included interest paid of $23.11 billion for 2023 and $8.39 billion for 2022 (comparatives have been restated to update interest paid for 2022), and interest received of $22.22 billion for 2023 and $7.57 billion for 2022.
- Foreign exchange losses/(gains) primarily relate to the non-cash revaluation of British pounds and Euro cash balances, primarily held in central banks for liquidity management purposes. The revaluation of cash balances and other monetary assets and liabilities is recognised in profit before taxation.

Reconciliation of Cash Flows From Financing Activities Excluding Lease Liabilities

The company includes MREL-eligible borrowings as financing activity for the purposes of its statement of cash flows, which consists of its AT1 notes, subordinated loans and MREL-eligible intercompany loans. Both the principal and interest related to these borrowings is classified as financing activity. The table below presents a reconciliation of cash flows from financing activities excluding lease liabilities.

$ in millions	Subordinated loans and MREL-eligible intercompany loans	AT1 notes	Total
As of December 2021	$ 23,602	$ 8,300	$ 31,902
Repayment/repurchase	(1,500)	—	(1,500)
Issuance	—	—	—
Interest charged	772	749	1,521
Interest paid	(693)	(749)	(1,442)
Other	—	—	—
As of December 2022	22,181	8,300	30,481
Repayment/repurchase	**—**	**(2,273)**	**(2,273)**
Issuance	**1,500**	**—**	**1,500**
Interest charged	**1,657**	**643**	**2,300**
Interest paid	**(1,623)**	**(643)**	**(2,266)**
Other	**—**	**(527)**	**(527)**
As of December 2023	**$ 23,715**	**$ 5,500**	**$ 29,215**

In the table above, other relates to the difference between the carrying value and fair value of the $2.80 billion of AT1 notes that the company repurchased during 2023.

Note 26.

Financial Commitments and Contingencies

Commitments

The table below presents commitments.

	As of December	
$ in millions	**2023**	2022
Collateralised agreements	**$ 143,596**	$ 119,659
Collateralised financings	**45,173**	72,086
Other	**3,372**	4,821
Total	**$ 192,141**	$ 196,566

Collateralised agreements commitments includes forward starting resale and securities borrowing agreements, and collateralised financings commitments includes forward starting repurchase and secured lending agreements that settle at a future date, generally within three business days. Collateralised agreements commitments also include transactions where the company has entered into commitments to provide contingent financing to its clients and counterparties through resale agreements. The company's funding of these commitments depends on the satisfaction of all contractual conditions to the resale agreement and these commitments can expire unused.

Other commitments primarily relate to collateral, underwriting and lending commitments as of December 2023 and collateral and lending commitments as of December 2022.

In addition, there are registered charges on the company's assets which have arisen in the ordinary course of business.

Legal Proceedings

The company 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 company's business. Except as noted in the first matter below, it is not practicable to reliably estimate the possible financial impact in excess of provisions, if any, of these proceedings on the company.

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 the company, 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, the company and, with respect to the BoP's December 2015 decision, Goldman Sachs International Bank 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 the company's action unless and until the Portuguese Administrative Court finds against BoP in the company's parallel action. In July 2018, the Liquidation Committee for BES issued a decision seeking to claw back from the company $54 million paid to the company and $50 million allegedly paid to Oak Finance in connection with the Facility, alleging that the company acted in bad faith in extending the Facility, including because the company allegedly knew that BES was at risk of imminent failure. In October 2018, the company 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.

Interest Rate Swap Antitrust Litigation. The company is 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 company is 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. The company 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.

The company is 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 aluminium and aluminium 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 company has paid the full amount of its contribution to the settlement.

Credit Default Swap Antitrust Litigation. The company is 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 Goldman Sachs & Co. LLC, the company 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.

Regulatory Investigations and Reviews and Related Litigation. Group Inc. and certain of its affiliates, including the company, 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 organisations and litigation relating to various matters relating to GS Group's businesses and operations, including:

- The securities offering process and underwriting practices;
- Investment management and financial advisory services;
- Conflicts of interest;
- Transactions involving government-related financings and other matters;
- 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 GS Group's supervision and controls relating to such activities, including compliance with applicable short sale rules, algorithmic, high-frequency and quantitative trading, futures trading, options trading, when-issued trading, transaction and regulatory reporting, technology systems and controls, securities lending practices, prime brokerage activities, trading and clearance of credit derivatives 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 U.K. Bribery Act and the U.S. Foreign Corrupt Practices Act;
- Hiring and compensation practices;
- System of risk management and controls; and
- Insider trading, the potential misuse and dissemination of material non-public information regarding corporate and governmental developments and the effectiveness of insider trading controls and information barriers.

In addition, investigations, reviews and litigation involving the company's affiliates and such affiliates' businesses and operations, including various matters referred to above but also other matters, may have an impact on the company's businesses and operations.

Note 27.

Maturity of Assets and Liabilities

The table below presents the expected maturity of the company's assets and liabilities.

$ in millions	Non-current	Current	Total
As of December 2023			
Assets			
Cash and cash equivalents	$ **—**	$ **35,689**	$ **35,689**
Collateralised agreements	**1,249**	**261,568**	**262,817**
Customer and other receivables	**—**	**72,888**	**72,888**
Trading assets	**—**	**828,362**	**828,362**
Investments	**289**	**—**	**289**
Loans	**152**	**22**	**174**
Other assets	**1,410**	**1,926**	**3,336**
Total assets	$ **3,100**	$ **1,200,455**	$ **1,203,555**
Liabilities			
Collateralised financings	$ **55,225**	$ **160,251**	$ **215,476**
Customer and other payables	**—**	**115,201**	**115,201**
Trading liabilities	**—**	**737,610**	**737,610**
Unsecured borrowings	**71,100**	**19,167**	**90,267**
Other liabilities	**1,128**	**3,754**	**4,882**
Total liabilities	$ **127,453**	$ **1,035,983**	$ **1,163,436**
As of December 2022			
Assets			
Cash and cash equivalents	$ —	$ 11,707	$ 11,707
Collateralised agreements	1,200	234,596	235,796
Customer and other receivables	—	78,967	78,967
Trading assets	—	872,810	872,810
Investments	269	11	280
Loans	220	2	222
Other assets	1,251	2,008	3,259
Total assets	$ 2,940	$ 1,200,101	$ 1,203,041
Liabilities			
Collateralised financings	$ 38,521	$ 86,214	$ 124,735
Customer and other payables	—	110,983	110,983
Trading liabilities	—	844,313	844,313
Unsecured borrowings	56,180	20,025	76,205
Other liabilities	1,097	3,499	4,596
Total liabilities	$ 95,798	$ 1,065,034	$ 1,160,832

In the table above:

- Current assets and liabilities include amounts that the company expects to realise or settle in its normal operating cycle and includes assets and liabilities held for trading purposes and cash and cash equivalents.
- Non-current assets are amounts that the company expects to be recovered after more than twelve months and primarily includes certain collateralised agreements, substantially all investments, certain loans, intangible assets, deferred tax assets, pension surplus and certain intercompany loans.
- Non-current liabilities are amounts that the company expects to be settled after more than twelve months and primarily includes collateralised financings and unsecured borrowings with contractual maturities greater than one year, with the exception of contracts that have trigger events that are not in the control of the company, which are classified as current.

Note 28.

Related Party Disclosures

Parties are considered to be related if one party has the ability to directly or indirectly control the other party or exercise significant influence over the party in making financial or operational decisions. The company's related parties include:

- The company's parent entities;
- Other GS Group affiliates;
- Key management personnel of the company;
- Key management personnel of the company's parent entities; and
- Other related parties, which includes the company's defined benefit scheme and associates of GS Group.

Key management personnel are defined as those persons having authority and responsibility for planning, directing and controlling the activities of the company. Key management personnel of the company include the directors of the company, members of the EMC who are employees of the company and members of senior management who are designated as managers under the PRA and FCA's Senior Managers and Certification Regime.

Key Management Compensation

The table below presents the compensation paid or payable by the company for employee services to key management personnel of the company and its parent entities.

	Year Ended December	
$ in millions	**2023**	2022
Salaries and other short-term benefits	**$ 146**	$ 158
Post-employment benefits	**1**	2
Share-based compensation	**162**	68
Total	**$ 309**	$ 228

In the table above:

- Salaries and other short-term benefits includes fees paid to the non-executive directors of the company.
- Share-based compensation included a charge of $72 million for 2023 and a credit of $11 million for 2022 representing changes in the fair value of share-based payment awards recharged from Group Inc. during the year.

Directors' Emoluments

In accordance with the Companies Act 2006, directors' emoluments represent the proportion of total emoluments paid or payable in respect of qualifying services only. This total only includes the value of cash and benefits in kind, and does not include the value of equity awards in accordance with the provisions of Schedule 5 of the Statutory Instruments 2008/410. Directors also receive emoluments for non-qualifying services which are not required to be disclosed.

The table below presents the company's directors' emoluments.

	Year Ended December	
$ in millions	**2023**	2022
Aggregate emoluments	**$ 7**	$ 7
Company pension contributions to money purchase schemes	**—**	—
Total	**$ 7**	$ 7

The table below presents emoluments for the highest paid company's director.

	Year Ended December	
$ in millions	**2023**	2022
Aggregate emoluments	**$ 3**	$ 3
Company pension contributions to money purchase schemes	**$ —**	$ —
Accrued annual pension at end of the year	**$ —**	$ —

Two directors were members of a defined contribution pension scheme and one director was a member of both a defined contribution pension scheme and a defined benefit pension scheme for 2023 (2022: two directors were members of a defined contribution pension scheme and two directors were members of both a defined contribution pension scheme and a defined benefit pension scheme). Three directors including the highest paid director for 2023 (2022: four directors including the highest paid director) have received or are due to receive Group Inc. shares in respect of long-term incentive schemes.

The aggregate emoluments of the nine non-executive directors for 2023 (2022: seven non-executive directors) who were members of the Board for all or part of 2023 was approximately $1.4 million (for all or part of 2022: approximately $1.9 million). Additional ongoing fees in respect of advisory services provided by certain non-executive directors was approximately $0.2 million for 2023 (2022: approximately $2.2 million).

Transactions with Related Parties

The company's transactions with related parties primarily include the following.

Risk Management and Market-Making Activity

The company routinely enters into derivatives and buys and sells securities and loans with related parties for risk management and market-making purposes, which are recognised in trading assets and trading liabilities.

The table below presents the company's outstanding derivatives with related parties, substantially all of which are with other GS Group affiliates. The change in derivative assets and derivative liabilities is driven by new trades, terminations, expiries and gains or losses, including any associated cash flows.

$ in millions	Derivative assets	Derivative liabilities
As of December 2023	**$ 508,547**	**$ 490,225**
As of December 2022	$ 585,390	$ 582,060
As of December 2021	$ 436,121	$ 434,577
December 2023 versus December 2022	$ (76,843)	$ (91,835)
December 2022 versus December 2021	$ 149,269	$ 147,483

The table below presents the company's gross outstanding buys and sells of regular-way securities and loans from/to other GS Group affiliates.

	As of December	
$ in millions	**2023**	2022
Outstanding regular-way buys of securities and loans	**$ 11,483**	$ 9,607
Outstanding regular-way sells of securities and loans	**$ 10,927**	$ 10,246

The company also holds securities in, and makes corporate loans to other GS Group affiliates, which are classified in trading assets. The company also exchanges cash and security collateral in connection with derivative transactions. Cash collateral received is recognised in customer and other payables. Cash collateral paid is recognised in customer and other receivables. The company posted security collateral to related parties of $13.00 billion as of December 2023 and $16.32 billion as of December 2022.

In addition, the company also executes and intermediates listed derivatives with other GS Group affiliates, resulting in the exchange of margin, which is recognised in customer and other receivables and customer and other payables.

The company has also received securities of $121 million as of December 2023 and $144 million as of December 2022 from a subsidiary under a securities lending agreement.

Funding Activity

The company routinely enters into collateralised agreements and collateralised financings with GS Group affiliates, primarily to source securities and fund inventory on a secured basis.

In addition, a significant portion of the company's unsecured borrowings is from GS Group affiliates, including the company's AT1 notes issued to GSG UK. See Notes 20 and 23 for further details. The company has also made loans to certain GS Group affiliates. See Note 14 for further details.

Interest-bearing instruments are typically priced based on the term, currency, size, subordination and whether the instrument is secured or unsecured.

Cash Management Services

The company receives cash management services from other GS Group affiliates and places cash deposits with them in the normal course of business which is recognised in cash and cash equivalents.

Commitments and Guarantees

The table below presents the company's commitments with other GS Group affiliates.

	As of December	
$ in millions	**2023**	2022
Collateralised agreements	**$ 103,469**	$ 69,118
Collateralised financings	**36,514**	52,324
Other	**218**	—
Total	**$ 140,201**	$ 121,442

Other commitments relate to an underwriting commitment as of December 2023.

The company has received a guarantee from Group Inc. related to transactions entered into with certain of its counterparties for up to $8 billion of exposure at default. During 2023, the guarantee was unutilised. During 2022, up to $8 billion of exposure at default was guaranteed, reducing to $nil as of December 2022.

Transfer Pricing and Management Charges

The company participates in the allocation of net revenues among GS Group affiliates for their involvement in GS Group's business activities. In addition, the company incurs/receives management charges to/from GS Group affiliates relating to operational and administrative support and management services.

Taxation

The company receives group relief from other GS Group affiliates. The company received tax-effected losses from other GS Group affiliates of $231 million for 2023 and $124 million for 2022 for which consideration will be paid in full.

Share-Based Payments

The company has entered into a chargeback agreement with Group Inc. under which it is committed to pay to Group Inc. (a) the grant-date fair value of those awards and (b) subsequent movements in the fair value of those awards between the grant date and ultimate delivery to employees (subsequent to the vesting date). See Notes 7 and 8 for further information.

Transactions with Key Management Personnel

Certain key management personnel and their close family members have brokerage and/or discretionary accounts at the company. They are provided services in the ordinary course of business on commercial terms, and in each case in compliance with the relevant laws and regulations.

Close family members of certain key management personnel are employed by the company. The amount of compensation paid to the family members was determined in accordance with the company's standard compensation practices applicable to similarly-situated employees.

Transfer of U.K. Asset Management Business

On April 1, 2023, the company transferred its U.K. asset management business to GSAMI, GS Group's primary U.K. asset management entity. As consideration for the transfer, the company received a non-controlling interest in GSAMI's immediate parent undertaking, which the company measured at fair value through profit or loss. As a result, the company recognised a net gain of $1.42 billion in net revenues for 2023. This net gain comprised a gain of $1.57 billion equivalent to the fair value of this business on transfer, partially offset by a loss of $149 million recognised on revaluation of the company's interest. The total consideration received by the company was distributed in the fourth quarter of 2023 via a non-cash distribution. As such, there was no change in the company's shareholder's equity as of December 2023, compared with December 2022.

Related Party Assets and Liabilities

The table below presents the company's assets and liabilities with related parties.

$ in millions	Parent entities	Other GS Group affiliates	Other related parties	Total
As of December 2023				
Assets				
Cash and cash equivalents	**$ —**	**$ 1,359**	**$ —**	**$ 1,359**
Collateralised agreements	**—**	**187,769**	**—**	**187,769**
Customer and other receivables	**148**	**15,459**	**11**	**15,618**
Trading assets	**2,048**	**514,404**	**—**	**516,452**
Investments	**—**	**170**	**—**	**170**
Loans	**—**	**—**	**—**	**—**
Other assets	**263**	**1,686**	**—**	**1,949**
Total assets	**$ 2,459**	**$ 720,847**	**$ 11**	**$723,317**
Liabilities				
Collateralised financings	**$ —**	**$ 148,582**	**$ —**	**$148,582**
Customer and other payables	**100**	**31,535**	**—**	**31,635**
Trading liabilities	**929**	**489,370**	**11**	**490,310**
Unsecured borrowings	**32,384**	**27,257**	**—**	**59,641**
Other liabilities	**1,950**	**1,530**	**—**	**3,480**
Total liabilities	**$ 35,363**	**$ 698,274**	**$ 11**	**$733,648**
As of December 2022				
Assets				
Cash and cash equivalents	$ —	$ 911	$ —	$ 911
Collateralised agreements	—	169,083	—	169,083
Customer and other receivables	88	19,767	—	19,855
Trading assets	2,581	589,766	423	592,770
Investments	—	168	—	168
Loans	—	—	—	—
Other assets	249	1,675	—	1,924
Total assets	$ 2,918	$ 781,370	$ 423	$784,711
Liabilities				
Collateralised financings	$ —	$ 82,108	$ —	$ 82,108
Customer and other payables	1,137	24,904	398	26,439
Trading liabilities	789	581,281	26	582,096
Unsecured borrowings	30,603	14,445	—	45,048
Other liabilities	2,044	1,360	—	3,404
Total liabilities	$ 34,573	$ 704,098	$ 424	$739,095

Related Party Income and Expense

The table below presents the company's income and expenses related to transactions with related parties other than Key Management Personnel.

$ in millions	Parent entities	Other GS Group affiliates	Other related parties	Total
Year Ended December 2023				
Net revenues				
Interest income	**$ 270**	**$ 8,634**	**$ —**	**$ 8,904**
Interest expense	**(2,234)**	**(11,406)**	**—**	**(13,640)**
Transfer pricing revenues	**—**	**350**	**—**	**350**
Other income	**—**	**19**	**—**	**19**
Total net revenues	**$ (1,964)**	**$ (2,403)**	**$ —**	**$ (4,367)**
Net operating expenses				
Transaction based expenses	**$ —**	**$ 218**	**$ —**	**$ 218**
Management charges from GS Group affiliates	**—**	**1,140**	**—**	**1,140**
Management charges to GS Group affiliates	**(4)**	**(315)**	**—**	**(319)**
Other expenses	**1**	**575**	**—**	**576**
Total net operating expenses	**$ (3)**	**$ 1,618**	**$ —**	**$ 1,615**
Year Ended December 2022				
Net revenues				
Interest income	$ 129	$ 2,054	$ 1	$ 2,184
Interest expense	(1,045)	(3,040)	(4)	(4,089)
Transfer pricing revenues	5	948	—	953
Total net revenues	$ (911)	$ (38)	$ (3)	$ (952)
Net operating expenses				
Transaction based expenses	$ —	$ 306	$ —	$ 306
Management charges from GS Group affiliates	—	1,090	—	1,090
Management charges to GS Group affiliates	(3)	(188)	—	(191)
Other expenses	37	474	—	511
Total net operating expenses	$ 34	$ 1,682	$ —	$ 1,716

In the table above, transaction based expenses and other expenses primarily include IFRS 15 expenses.

Note 29.

Financial Instruments

Financial Assets and Liabilities by Category

The tables below present the carrying value of company's financial assets and liabilities by category.

	Financial Assets		
$ in millions	Mandatorily at fair value	Amortised cost	Total
As of December 2023			
Cash and cash equivalents	**$ —**	**$ 35,689**	**$ 35,689**
Collateralised agreements	**138,889**	**123,928**	**262,817**
Customer and other receivables	**—**	**72,888**	**72,888**
Trading assets	**828,362**	**—**	**828,362**
Investments	**289**	**—**	**289**
Loans	**174**	**—**	**174**
Other assets	**147**	**2,014**	**2,161**
Total	**$ 967,861**	**$ 234,519**	**$ 1,202,380**
As of December 2022			
Cash and cash equivalents	$ —	$ 11,707	$ 11,707
Collateralised agreements	151,739	84,057	235,796
Customer and other receivables	—	78,967	78,967
Trading assets	872,810	—	872,810
Investments	280	—	280
Loans	222	—	222
Other assets	156	1,937	2,093
Total	$ 1,025,207	$ 176,668	$ 1,201,875

	Financial Liabilities			
$ in millions	Held for trading	Designated at fair value	Amortised cost	Total
As of December 2023				
Collateralised financings	**$ —**	**$ 106,784**	**$ 108,692**	**$ 215,476**
Customer and other payables	**—**	**—**	**115,201**	**115,201**
Trading liabilities	**737,610**	**—**	**—**	**737,610**
Unsecured borrowings	**—**	**54,936**	**35,331**	**90,267**
Other liabilities	**—**	**—**	**4,234**	**4,234**
Total	**$737,610**	**$ 161,720**	**$ 263,458**	**$1,162,788**
As of December 2022				
Collateralised financings	$ —	$ 77,539	$ 47,196	$ 124,735
Customer and other payables	—	—	110,983	110,983
Trading liabilities	844,313	—	—	844,313
Unsecured borrowings	—	40,247	35,958	76,205
Other liabilities	—	—	4,198	4,198
Total	$844,313	$ 117,786	$ 198,335	$1,160,434

Interest Rate Benchmarks Subject to Reform

As of July 1, 2023, the publication of all London Interbank Offered Rate (LIBOR) settings as representative rates has ceased. The FCA has allowed the publication and use of synthetic rates for certain GBP LIBOR settings in legacy GBP LIBOR-based contracts through March 2024 and for 3 month USD LIBOR settings in legacy USD LIBOR-based contracts through September 2024.

The table below presents the company's exposure to interest rate benchmarks subject to reform.

$ in millions	Non-derivative financial assets	Non-derivative financial liabilities	Derivative notional amount
As of December 2023			
USD LIBOR	**$ 98**	**$ 158**	**$ —**
GBP LIBOR	**25**	**—**	**—**
Other	**5**	**—**	**835,351**
Total	**$ 128**	**$ 158**	**$ 835,351**
As of December 2022			
USD LIBOR	$ 636	$ 2,901	$ 5,699,410
GBP LIBOR	7	—	—
Other	—	24	912,630
Total	$ 643	$ 2,925	$ 6,612,040

In the table above:

- Non-derivative financial assets comprise of trading cash instruments, loans and collateralised agreements. Non-derivative financial liabilities comprise of trading cash instruments, collateralised financings and unsecured borrowings.
- Derivative notionals excludes amounts for which fallbacks apply, or amounts for which all future cashflows have already been fixed, as the company has no ongoing IBOR exposure related to these transactions.
- Derivative notionals with exposure to other interest rate benchmarks subject to reform primarily consists of exposure to the Canadian Dollar Offered Rate (CDOR), Singapore Dollar Offer Swap Rate (SOR), Johannesburg Interbank Average Rate (JIBAR), Warsaw Interbank Offered Rate (WIBOR) and Tel Aviv Interbank Offer Rate (TELBOR) as of both December 2023 and December 2022.

Offsetting of Financial Assets and Liabilities

The tables below present financial assets and liabilities that are subject to enforceable netting agreements and offsetting. Amounts are only offset in the balance sheet when the company currently has a legally enforceable right to set-off the recognised amounts and an intention either to settle on a net basis, or to realise the asset and settle the liability simultaneously. In the tables below:

- Gross amounts exclude the effects of both counterparty netting and collateral, and therefore are not representative of the company's economic exposure.
- Amounts not offset in the balance sheet include counterparty netting (i.e., the netting of financial assets and liabilities for a given counterparty when a legal right of set-off exists under an enforceable netting agreement), and cash and security collateral received and posted under enforceable credit support agreements, that do not meet the criteria for offsetting under IFRS.
- Where the company has received or posted collateral under credit support agreements, but has not yet determined whether such agreements are enforceable, the related collateral has not been included in the amounts not offset in the balance sheet.
- Gross amounts for the company included derivative assets of $3.83 billion and derivative liabilities of $4.18 billion as of December 2023 and derivative assets of $3.82 billion and derivative liabilities of $5.16 billion as of December 2022 which are not subject to an enforceable netting agreement or are subject to a netting agreement that the company has not yet determined to be enforceable.
- Substantially all resale agreements and securities borrowed within collateralised agreements and repurchase agreements and securities loaned within collateralised financings are subject to enforceable netting agreements as of both December 2023 and December 2022.

				Amounts not offset in the balance sheet			
$ in millions	Gross amounts	Amounts offset in the balance sheet	Net amount presented in the balance sheet	Counterparty netting	Cash collateral	Security collateral	Net amount
As of December 2023							
Financial assets							
Collateralised agreements	**$ 387,810**	**$ (124,993)**	**$ 262,817**	**$ (95,063)**	**$ (112)**	**$ (165,128)**	**$ 2,514**
Customer and other receivables	**91,084**	**(30,182)**	**60,902**	**(7,432)**	**(27,560)**	**(13,338)**	**12,572**
Trading cash instruments	**18,910**	**(7,711)**	**11,199**	**(1,491)**	**(3,070)**	**(5,593)**	**1,045**
Derivatives	**705,666**	**(9,966)**	**695,700**	**(629,932)**	**(37,504)**	**(9,179)**	**19,085**
Trading assets	**724,576**	**(17,677)**	**706,899**	**(631,423)**	**(40,574)**	**(14,772)**	**20,130**
Loans	**117**	**—**	**117**	**—**	**—**	**(117)**	**—**
Other assets	**1,955**	**(1,426)**	**529**	**(93)**	**—**	**—**	**436**
Financial assets subject to enforceable netting agreements	**1,205,542**	**(174,278)**	**1,031,264**	**(734,011)**	**(68,246)**	**(193,355)**	**35,652**
Financial assets not subject to enforceable netting agreements	**171,116**	**—**	**171,116**	**—**	**—**	**—**	**171,116**
Total financial assets	**$ 1,376,658**	**$ (174,278)**	**$ 1,202,380**	**$ (734,011)**	**$ (68,246)**	**$ (193,355)**	**$ 206,768**
Financial liabilities							
Collateralised financings	**$ 328,763**	**$ (125,016)**	**$ 203,747**	**$ (96,100)**	**$ (2,212)**	**$ (103,096)**	**$ 2,339**
Customer and other payables	**135,726**	**(30,207)**	**105,519**	**(7,432)**	**(40,686)**	**(29,490)**	**27,911**
Trading cash instruments	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Derivatives	**681,801**	**(9,941)**	**671,860**	**(627,986)**	**(25,263)**	**(3,928)**	**14,683**
Trading liabilities	**681,801**	**(9,941)**	**671,860**	**(627,986)**	**(25,263)**	**(3,928)**	**14,683**
Unsecured borrowings	**14,540**	**(9,066)**	**5,474**	**(2,400)**	**(85)**	**—**	**2,989**
Other liabilities	**669**	**(48)**	**621**	**(93)**	**—**	**—**	**528**
Financial liabilities subject to enforceable netting agreements	**1,161,499**	**(174,278)**	**987,221**	**(734,011)**	**(68,246)**	**(136,514)**	**48,450**
Financial liabilities not subject to enforceable netting agreements	**175,567**	**—**	**175,567**	**—**	**—**	**—**	**175,567**
Total financial liabilities	**$ 1,337,066**	**$ (174,278)**	**$ 1,162,788**	**$ (734,011)**	**$ (68,246)**	**$ (136,514)**	**$ 224,017**
As of December 2022							
Financial assets							
Collateralised agreements	$ 390,325	$ (154,529)	$ 235,796	$ (49,800)	$ (450)	$ (183,869)	$ 1,677
Customer and other receivables	88,181	(24,791)	63,390	(3,886)	(39,025)	(9,969)	10,510
Trading cash instruments	16,976	(7,037)	9,939	(3,910)	(742)	(4,073)	1,214
Derivatives	813,860	(13,479)	800,381	(729,463)	(40,675)	(10,183)	20,060
Trading assets	830,836	(20,516)	810,320	(733,373)	(41,417)	(14,256)	21,274
Loans	118	—	118	—	—	(101)	17
Other assets	2,407	(1,975)	432	(88)	—	—	344
Financial assets subject to enforceable netting agreements	1,311,867	(201,811)	1,110,056	(787,147)	(80,892)	(208,195)	33,822
Financial assets not subject to enforceable netting agreements	91,819	—	91,819	—	—	—	91,819
Total financial assets	$ 1,403,686	$ (201,811)	$ 1,201,875	$ (787,147)	$ (80,892)	$ (208,195)	$ 125,641
Financial liabilities							
Collateralised financings	$ 268,450	$ (154,563)	$ 113,887	$ (49,945)	$ (1,933)	$ (60,119)	$ 1,890
Customer and other payables	119,725	(24,452)	95,273	(3,886)	(41,867)	(20,565)	28,955
Trading cash instruments	—	—	—	—	—	—	—
Derivatives	801,435	(13,816)	787,619	(730,866)	(36,926)	(2,208)	17,619
Trading liabilities	801,435	(13,816)	787,619	(730,866)	(36,926)	(2,208)	17,619
Unsecured borrowings	13,791	(8,822)	4,969	(2,362)	(166)	—	2,441
Other liabilities	754	(158)	596	(88)	—	—	508
Financial liabilities subject to enforceable netting agreements	1,204,155	(201,811)	1,002,344	(787,147)	(80,892)	(82,892)	51,413
Financial liabilities not subject to enforceable netting agreements	158,090	—	158,090	—	—	—	158,090
Total financial liabilities	$ 1,362,245	$ (201,811)	$ 1,160,434	$ (787,147)	$ (80,892)	$ (82,892)	$ 209,503

Collateral Received and Pledged

The company receives cash and securities (e.g., government and agency obligations, corporate debt securities, equity securities) as collateral, primarily in connection with resale agreements, securities borrowed, derivative transactions and customer margin loans. The company obtains cash and securities as collateral on an upfront or contingent basis for derivatives and collateralised agreements to reduce its credit exposure to individual counterparties.

In many cases, the company is permitted to deliver or repledge financial instruments received as collateral when entering into repurchase agreements and securities lending agreements, primarily in connection with secured client financing activity. The company is also permitted to deliver or repledge these financial instruments in connection with other secured financings, collateralised derivative transactions and meeting company or customer settlement requirements.

The company also pledges certain trading assets in connection with repurchase agreements, securities lending agreements and other secured financings to counterparties who may or may not have the right to deliver or repledge them.

The table below presents financial instruments received as collateral that were available to be delivered or repledged, and that were delivered or repledged.

	As of December	
$ in millions	**2023**	2022
Collateral available to be delivered or repledged	**$ 702,507**	$ 710,395
Collateral that was delivered or repledged	**$ 655,098**	$ 632,160

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	**$ 58,352**	$ 20,708
Investments	**$ 25**	$ 3
Pledged to counterparties that did not have the right to deliver or repledge		
Trading assets	**$ 38,255**	$ 23,895
Investments	**$ 20**	$ 29

The company has received cash collateral of $67.84 billion as of December 2023 and $66.17 billion as of December 2022, and posted cash collateral of $46.83 billion as of December 2023 and $52.74 billion as of December 2022. Amounts received and posted are mainly in respect of trading assets and trading liabilities.

Note 30.

Fair Value Measurement

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 company measures certain financial assets and liabilities as a portfolio (i.e., based on its net exposure to market and/or credit risks).

IFRS has a three-level hierarchy for disclosure of fair value measurements. This hierarchy prioritises 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.

The fair value hierarchy is as follows:

Level 1. Inputs are unadjusted quoted prices in active markets to which the company 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 company's financial assets and liabilities that are fair valued on a recurring basis 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 company's and GS Group's credit quality, funding risk, transfer restrictions, liquidity and bid/offer spreads. Valuation adjustments are generally based on market evidence.

Valuation Techniques and Significant Inputs

Trading Cash Instruments, Investments and Loans. Valuation techniques and significant inputs for each level of the fair value hierarchy include:

Level 1

Level 1 instruments are valued using quoted prices for identical unrestricted instruments in active markets. The company defines active markets for equity instruments based on the average daily trading volume both in absolute terms and relative to the market capitalisation for the instrument. The company 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 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 firm) 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 company 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 realised on sales of financial assets.

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 trading cash instrument, investments and loans are described below:

- **Mortgages and Other Asset-Backed Loans and Securities.** Significant inputs are generally determined based on relative value analyses and 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;
  - Current performance of the borrower or loan collateral and recovery assumptions if a default occurs; and
  - Timing of expected future cash flows (duration) which, in certain cases, may incorporate the impact of other unobservable inputs (e.g., prepayment speeds).
- **Corporate Debt Instruments, Government and Agency Obligations and Loans.** Significant inputs 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;
  - Current levels and changes in market indices, such as the iTraxx and CDX (indices that track the performance of corporate credit);
  - Current performance of the borrower or loan collateral and recovery assumptions if a default occurs;
  - Maturity and coupon profile of the instrument; and
  - Market and transaction multiples for corporate debt instruments with convertibility or participation options.
- **Equity Securities.** Equity securities consists of private equity securities. Recent third-party completed or pending transactions (e.g., merger proposals, tender offers, debt restructurings) are considered to be the best evidence for any change in fair value. When these are not available, the following valuation methodologies are used, as appropriate:
  - Industry multiples and public comparables;
  - Transactions in similar instruments; and
  - Discounted cash flow techniques.

Derivatives. 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 company's OTC derivatives are cleared and settled through central clearing counterparties (OTC-cleared), while others are bilateral contracts between two counterparties (bilateral OTC).

The company'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 characterised 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 industrialised nations are characterised 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 or to secured funding spreads, generally have less price transparency.
- **Currency.** Prices for currency derivatives based on the exchange rates of leading industrialised 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.
- **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. In evaluating the significance of a valuation input, the company considers, among other factors, a portfolio's net risk exposure to that input.

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 judgement 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 collateralised derivatives), credit curves, measures of volatility and correlations of such inputs. Significant inputs to the valuations of level 2 derivatives can be verified to market transactions, broker or dealer quotations or other alternative pricing sources with reasonable levels of price transparency. Consideration is given to the nature of the quotations (e.g., indicative or firm) 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 utilise observable level 1 and/or level 2 inputs, as well as unobservable level 3 inputs. Unobservable inputs include certain correlations, illiquid credit and secured funding spreads, recovery rates and certain equity and interest rate volatilities.

Subsequent to the initial valuation of a level 3 derivative, the company 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 company 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 below for further information about significant unobservable inputs used in the valuation of level 3 derivatives.

Where there is a difference between the initial transaction price and the fair value calculated by internal models, a gain or loss is recognised after initial recognition only to the extent that it arises from a change in a factor (including time) that market participants would consider in setting a price.

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, CVA and funding valuation adjustments, which account for the credit and funding risk inherent in the uncollateralised portion of derivative portfolios. The company also makes funding valuation adjustments to collateralised derivatives where the terms of the agreement do not permit the company 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 company makes model or exit price adjustments to account for the valuation uncertainty present in the transaction.

Other Financial Assets and Liabilities. Valuation techniques and significant inputs of other financial assets and liabilities include:

- **Collateralised Agreements.** The significant inputs to the valuation of resale agreements and securities borrowed are funding spreads, the amount and timing of expected future cash flows and interest rates.
- **Other Assets.** Other assets measured at fair value consist of an unsecured intercompany loan and an investment in subsidiary. The significant inputs to the valuation of this unsecured intercompany loan measured at fair value are the amount and timing of expected future cash flows, interest rates and the credit spreads of GS Group. The significant inputs to the valuation of this investment in subsidiary measured at fair value are equity prices and foreign exchange rates.
- **Collateralised Financings.** The significant inputs to the valuation of repurchase agreements and securities loaned are funding spreads, the amount and timing of expected future cash flows and interest rates. The significant inputs to the valuation of secured debt securities issued, other borrowings and intercompany loans measured at fair value are the amount and timing of expected future cash flows, interest rates, funding spreads, the fair value of the collateral delivered by the company (which is determined using the amount and timing of expected future cash flows, market prices, market yields and recovery assumptions), the frequency of additional collateral calls and commodity prices for prepaid commodity transactions.
- **Unsecured Borrowings.** The significant inputs to the valuation of unsecured borrowings measured at fair value are the amount and timing of expected future cash flows, interest rates, the credit spreads of GS Group 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 company's other derivative instruments.

Fair Value of Financial Assets and Liabilities by Level

The table below presents, by level within the fair value hierarchy, the company's financial assets and liabilities measured at fair value on a recurring basis.

$ in millions	Level 1	Level 2	Level 3	Total
As of December 2023				
Financial assets				
Collateralised agreements	**$ —**	**$ 138,777**	**$ 112**	**$ 138,889**
Trading cash instruments	**92,278**	**39,739**	**645**	**132,662**
Derivatives	**1**	**691,614**	**4,085**	**695,700**
Trading assets	**92,279**	**731,353**	**4,730**	**828,362**
Investments	**4**	**216**	**69**	**289**
Loans	**—**	**140**	**34**	**174**
Other assets	**—**	**147**	**—**	**147**
Total	**$ 92,283**	**$ 870,633**	**$ 4,945**	**$ 967,861**
Financial liabilities				
Collateralised financings	**$ —**	**$ 106,295**	**$ 489**	**$ 106,784**
Trading cash instruments	**59,775**	**5,955**	**20**	**65,750**
Derivatives	**37**	**669,492**	**2,331**	**671,860**
Trading liabilities	**59,812**	**675,447**	**2,351**	**737,610**
Unsecured borrowings	**—**	**49,273**	**5,663**	**54,936**
Total	**$ 59,812**	**$ 831,015**	**$ 8,503**	**$ 899,330**
Net derivatives	**$ (36)**	**$ 22,122**	**$ 1,754**	**$ 23,840**
As of December 2022				
Financial assets				
Collateralised agreements	$ —	$ 151,621	$ 118	$ 151,739
Trading cash instruments	44,917	26,956	556	72,429
Derivatives	166	796,286	3,929	800,381
Trading assets	45,083	823,242	4,485	872,810
Investments	4	205	71	280
Loans	—	168	54	222
Other assets	—	156	—	156
Total	$ 45,087	$ 975,392	$ 4,728	$ 1,025,207
Financial liabilities				
Collateralised financings	$ —	$ 77,144	$ 395	$ 77,539
Trading cash instruments	49,689	6,997	8	56,694
Derivatives	55	785,240	2,324	787,619
Trading liabilities	49,744	792,237	2,332	844,313
Unsecured borrowings	—	35,099	5,148	40,247
Total	$ 49,744	$ 904,480	$ 7,875	$ 962,099
Net derivatives	$ 111	$ 11,046	$ 1,605	$ 12,762

Significant Unobservable Inputs Used in Level 3 Fair Value Measurements

Trading Cash Instruments, Investments and Loans. The table below presents the company's level 3 trading cash instrument assets, investments and loans and ranges and weighted averages of significant unobservable inputs used to value level 3 trading cash instruments, investments and loans.

	As of December 2023		As of December 2022	
$ in millions, except inputs	Amount or Range	Weighted Average	Amount or Range	Weighted Average
Trading cash instruments				
Mortgages and other asset-backed loans and securities				
Level 3 assets	**$ 41**		$ 49	
Yield	**4.0% to 26.1%**	**11.9%**	5.6% to 21.3%	12.5%
Recovery rate	**35.5% to 76.0%**	**44.6%**	47.0% to 76.1%	56.6%
Duration (years)	**1.4 to 7.0**	**4.2**	1.3 to 8.0	2.4
Corporate debt instruments and government and agency obligations				
Level 3 assets	**$ 573**		$ 444	
Yield	**5.0% to 46.0%**	**12.8%**	2.8% to 48.0%	9.2%
Recovery rate	**7.3% to 95.9%**	**26.6%**	3.0% to 87.0%	36.7%
Duration (years)	**0.9 to 27.0**	**3.4**	0.3 to 12.3	4.6
Equity securities				
Level 3 assets	**$ 31**		$ 63	
Duration (years)	**4.8 to 4.8**	**4.8**	5.8 to 5.8	5.8
Total	**$ 645**		$ 556	
Investments				
Corporate debt instruments				
Level 3 assets	**$ 5**		$ 15	
Recovery rate	**7.3% to 7.3%**	**7.3%**	10.0% to 57.2%	33.5%
Equity securities				
Level 3 assets	**$ 64**		$ 56	
Multiples	**0.4x to 7.0x**	**6.0x**	1.5x to 6.0x	5.3x
Total	**$ 69**		$ 71	
Loans				
Corporate				
Level 3 assets	**$ 34**		$ 54	
Yield	**N/A**	**N/A**	4.8% to 4.8%	4.8%
Recovery rate	**15.0% to 15.0%**	**15.0%**	15.0% to 15.0%	15.0%

In the table above:

- Ranges represent the significant unobservable inputs that were used in the valuation of each type of cash instrument and weighted averages are calculated by weighting each input by the relative fair value of the instrument.
- 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 instrument. For example, the highest yield for mortgages and other asset-backed loans and securities is appropriate for valuing a specific mortgage but may not be appropriate for valuing any other mortgages. 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 or duration used in the valuation of level 3 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 December 2023 and December 2022. Due to the distinctive nature of each level 3 instrument, the interrelationship of inputs is not necessarily uniform within each product type.
- Mortgages and other asset-backed loans and securities, corporate debt instruments and government and agency obligations and loans 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.
- Yield was not significant to the valuation of level 3 loans as of December 2023.

Derivatives and Unsecured Borrowings. The table below presents the company's level 3 net derivatives and unsecured borrowings and ranges, averages and medians of significant unobservable inputs used to value level 3 derivatives and unsecured borrowings.

	As of December 2023		As of December 2022	
$ in millions, except inputs	Amount or Range	Average/ Median	Amount or Range	Average/ Median
Derivatives				
Interest rates, net	**$ 151**		$ 112	
Correlation	**(10)% to 26%**	**13%/25%**	(10)% to 26%	13%/25%
Volatility (bps)	**41 to 62**	**48/48**	45 to 60	56/57
Credit, net	**$ 1,835**		$ 1,657	
Credit spreads (bps)	**7 to 1,750**	**134/90**	5 to 686	167/125
Upfront credit points	**0 to 90**	**18/7**	(1) to 90	19/5
Recovery rates	**20% to 50%**	**43%/40%**	20% to 50%	41%/40%
Currencies, net	**$ (104)**		$ (76)	
Correlation	**20% to 90%**	**24%/23%**	20% to 23%	21%/21%
Equities, net	**$ (140)**		$ (90)	
Correlation	**(70)% to 100%**	**66%/69%**	(75)% to 100%	60%/67%
Volatility	**0% to 80%**	**14%/13%**	2% to 74%	16%/18%
Commodities, net	**$ 12**		$ 2	
Total	**$ 1,754**		$ 1,605	
Unsecured borrowings				
Level 3 liabilities	**$ 5,663**		$ 5,148	
Interest rates correlation	**25% to 26%**	**25%/25%**	25% to 26%	25%/25%
Credit spreads (bps)	**183 to 183**	**183/183**	N/A	N/A
Currencies correlation	**20% to 68%**	**34%/23%**	20% to 23%	21%/21%
Equities correlation	**(16)% to 96%**	**51%/52%**	(39)% to 99%	54%/54%
Equities volatility	**2% to 106%**	**18%/15%**	6% to 66%	23%/21%

In the table above:

- Net derivative assets are shown as positive amounts and net derivative liabilities are shown as negative amounts.
- Ranges represent the significant unobservable inputs that were used in the valuation of each type of derivative. Averages represent the arithmetic average of the inputs and are not weighted by the relative fair value or notional of the respective financial instruments. An average greater than the median indicates that the majority of inputs are below the average.

- 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 equity derivatives is appropriate for valuing a specific equity derivative but may not be appropriate for valuing any other equity 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, and credit derivatives are valued using option pricing, correlation 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 flows 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.
- Credit spreads was not significant to the valuation of level 3 unsecured borrowings as of December 2022.

Range of Significant Unobservable Inputs

The following provides information about the ranges of significant unobservable inputs used to value level 3 derivatives and unsecured borrowings:

- **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.
- **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) and also includes secured funding spreads. The broad range of this population gives rise to the width of the ranges of significant unobservable inputs.

Sensitivity of Fair Value Measurement to Changes in Significant Unobservable Inputs

The following is a description of the directional sensitivity of the company's level 3 fair value measurements to changes in significant unobservable inputs, in isolation, as of each year-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, and the fair value of secured funding capacity increases as secured funding spreads increase. 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.

Due to the distinctive nature of each of the company's level 3 derivatives and unsecured borrowings, the interrelationship of inputs is not necessarily uniform within each product type.

Collateralised Agreements. As of December 2023 and December 2022, the significant unobservable inputs used to value level 3 collateralised agreements are incorporated into the trading cash instruments disclosures related to unobservable inputs. See "Trading Cash Instruments, Investments and Loans" above.

Collateralised Financings. As of December 2023 and December 2022, the significant unobservable inputs used to value level 3 collateralised financings are incorporated into the derivatives disclosures related to unobservable inputs. See "Derivatives and Unsecured Borrowings" above.

Transfers Between Level 1 and Level 2 of the Fair Value Hierarchy

During both 2023 and 2022, there were no significant transfers between level 1 and level 2 financial assets and liabilities measured at fair value on a recurring basis.

Fair Value Financial Assets and Liabilities Valued Using Techniques That Incorporate Unobservable Inputs

The fair value of financial assets and liabilities may be determined in whole or part using a valuation technique based on assumptions that are not supported by prices from observable current market transactions in the same instrument or based on available observable market data and changing these assumptions will change the resultant estimate of fair value.

In determining reasonably possible alternative unfavourable assumptions, a detailed business and position level review has been performed to identify and quantify instances where potential uncertainty exists. This has taken into account the positions' fair value as compared to the range of available market information.

The table below presents the potential impact of using reasonable possible alternative assumptions for financial assets and liabilities valued using techniques that are unobservable.

	As of December	
$ in millions	**2023**	2022
Favourable changes		
Trading cash instruments	**$ 102**	$ 88
Investments	**9**	15
Loans	**3**	4
Others	**387**	355
Total	**$ 501**	$ 462
Unfavourable changes		
Trading cash instruments	**$ 15**	$ 29
Investments	**2**	4
Loans	**11**	11
Others	**178**	155
Total	**$ 206**	$ 199

In the table above:

- Others include the favourable and unfavourable changes related to derivatives, unsecured borrowings, collateralised agreements and collateralised financings. These have been presented net, consistent with their net risk being used in the calculation of favourable and unfavourable changes due to economic hedging between these instruments.
- As of both December 2023 and December 2022, the impact for favourable changes was primarily driven by changes in valuation adjustments related to equity and fixed income derivatives and changes in assumptions related to the valuation of secured funding spreads and equity securities.
- As of both December 2023 and December 2022, the impact for unfavourable changes was primarily driven by changes in the assumptions related to the valuation of secured funding spreads, volatility and correlation inputs, and credit spreads.

The table below presents the amounts not recognised in the income statement relating to the difference between the fair value of financial assets and liabilities at initial recognition using the valuation techniques and the transaction price (day 1 P&L).

	Year Ended December	
$ in millions	**2023**	2022
Beginning balance	**$ 206**	$ 190
New transactions	**311**	157
Amounts recognised in the income statement during the year	**(257)**	(141)
Ending balance	**$ 260**	$ 206

Level 3 Rollforward

The table below presents a summary of the changes in fair value for all level 3 financial assets and liabilities measured at fair value on a recurring basis.

	Year Ended December	
$ in millions	**2023**	2022
Total financial assets		
Beginning balance	**$ 4,728**	$ 5,760
Gains/(losses)	**849**	(847)
Purchases	**608**	1,008
Sales	**(302)**	(309)
Settlements	**(928)**	(1,669)
Transfers into level 3	**262**	1,490
Transfers out of level 3	**(272)**	(705)
Ending balance	**$ 4,945**	$ 4,728
Total financial liabilities		
Beginning balance	**$ (7,875)**	$ (18,239)
Gains/(losses)	**(1,074)**	1,780
Purchases	**36**	76
Sales	**(310)**	(469)
Issuances	**(2,246)**	(2,303)
Settlements	**2,956**	5,322
Transfers into level 3	**(571)**	(794)
Transfers out of level 3	**581**	6,752
Ending balance	**$ (8,503)**	$ (7,875)

In the table above:

- If a financial asset or financial liability 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 financial assets, increases are shown as positive amounts, while decreases are shown as negative amounts. For level 3 financial liabilities, increases are shown as negative amounts, while decreases are shown as positive amounts.
- Transfers between levels of the fair value hierarchy are recognised at the beginning of the reporting period in which they occur. Accordingly, the tables do not include gains or losses for level 3 financial assets and liabilities that were transferred out of level 3 prior to the end of the period.

- Level 3 financial assets and liabilities are frequently economically hedged with level 1 and level 2 financial assets and liabilities. Accordingly, level 3 gains or losses that are reported for a particular class of financial asset or financial liability can be partially offset by gains or losses attributable to level 1 or level 2 in the same class of financial asset or financial liability or gains or losses attributable to level 1, level 2 or level 3 in a different class of financial asset or financial liability. As a result, gains or losses included in the level 3 rollforward do not necessarily represent the overall impact on the company's results of operations, liquidity or capital resources.
- Gains/(losses) are predominately attributable to changes in unrealised gains or losses relating to level 3 financial assets and financial liabilities.
- The net gains/(losses) on level 3 financial assets for both 2023 and 2022 are reported in "Net revenues" in the income statement.
- The net losses on level 3 financial liabilities of $1.07 billion for 2023 included losses of $988 million reported in "Net revenues" in the income statement and losses of $86 million reported in "Debt valuation adjustment" in the statement of comprehensive income. The net gains on level 3 financial liabilities of $1.78 billion for 2022 included gains of $1.62 billion reported in "Net revenues" in the income statement and gains of $162 million reported in "Debt valuation adjustment" in the statement of comprehensive income.

The table below disaggregates, by the balance sheet line items, the information for the company's financial assets included in the summary table above.

	Year Ended December	
$ in millions	**2023**	2022
Collateralised agreements		
Beginning balance	**$ 118**	$ 121
Gains/(losses)	**3**	(3)
Settlements	**(9)**	—
Ending balance	**$ 112**	$ 118
Trading assets		
Beginning balance	**$ 4,485**	$ 5,479
Gains/(losses)	**836**	(865)
Purchases	**600**	1,001
Sales	**(301)**	(309)
Settlements	**(900)**	(1,606)
Transfers into level 3	**262**	1,490
Transfers out of level 3	**(252)**	(705)
Ending balance	**$ 4,730**	$ 4,485
Investments		
Beginning balance	**$ 71**	$ 105
Gains/(losses)	**10**	22
Purchases	**8**	7
Sales	**(1)**	—
Settlements	**(19)**	(63)
Ending balance	**$ 69**	$ 71
Loans		
Beginning balance	**$ 54**	$ 55
Gains/(losses)	**—**	(1)
Transfers out of level 3	**(20)**	—
Ending balance	**$ 34**	$ 54

The table below disaggregates, by the balance sheet line items, the information for the company's financial liabilities included in the summary table above.

	Year Ended December	
$ in millions	**2023**	2022
Collateralised financings		
Beginning balance	**$ (395)**	$ (380)
Gains/(losses)	**(52)**	(66)
Issuances	**(322)**	(275)
Settlements	**280**	326
Ending balance	**$ (489)**	$ (395)
Trading liabilities		
Beginning balance	**$ (2,332)**	$ (3,722)
Gains/(losses)	**(476)**	281
Purchases	**36**	76
Sales	**(310)**	(469)
Settlements	**617**	768
Transfers into level 3	**(151)**	(206)
Transfers out of level 3	**265**	940
Ending balance	**$ (2,351)**	$ (2,332)
Unsecured borrowings		
Beginning balance	**$ (5,148)**	$ (14,137)
Gains/(losses)	**(546)**	1,565
Issuances	**(1,924)**	(2,028)
Settlements	**2,059**	4,228
Transfers into level 3	**(420)**	(588)
Transfers out of level 3	**316**	5,812
Ending balance	**$ (5,663)**	$ (5,148)

Transfers Between Level 2 and Level 3 of the Fair Value Hierarchy

Transfers between level 2 and level 3 generally occur due to changes in the transparency of level 3 inputs. A lack of market evidence leads to reduced transparency, whereas an increase in the availability of market evidence leads to an increase in transparency.

Financial Assets

Year Ended December 2023

Trading Assets. Transfers into level 3 trading assets primarily reflected transfers of certain equity derivatives from level 2, principally due to reduced price transparency of certain volatility and correlation inputs, transfers of certain credit derivatives from level 2, principally due to reduced transparency of certain credit spread inputs, and transfers of certain cash instruments from level 2, principally due to reduced transparency of certain yield inputs.

Transfers out of level 3 trading assets primarily reflected transfers of certain equity derivatives to level 2, principally due to increased transparency of certain volatility and correlation inputs, and transfers of certain cash instruments to level 2, principally due to increased transparency of certain yield inputs.

Year Ended December 2022

Trading Assets. Transfers into level 3 trading assets primarily reflected transfers of certain equity securities from level 2, 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 assets primarily reflected transfers of certain equity derivatives to level 2, principally due to increased transparency of certain volatility and correlation inputs, and transfers of certain cash instruments to level 2, principally due to increased transparency of certain yield inputs.

Financial Liabilities

Year Ended December 2023

Trading Liabilities. Transfers into level 3 trading liabilities primarily reflected transfers of certain equity derivatives from level 2, principally due to reduced transparency of certain volatility and correlation inputs, and transfers of certain credit derivatives from level 2, principally due to reduced transparency of certain credit spread inputs.

Transfers out of level 3 trading liabilities primarily reflected transfers of certain credit derivatives to level 2, principally due to reduced transparency of certain credit spread inputs.

Unsecured Borrowings. Transfers into level 3 unsecured borrowings primarily reflected transfers of certain hybrid financial instruments from level 2, principally due to reduced transparency of certain volatility and correlation inputs.

Transfers out of level 3 unsecured borrowings primarily reflected transfers of certain hybrid financial instruments to level 2, principally due to increased transparency of certain volatility and correlation inputs.

Year Ended December 2022

Trading Liabilities. Transfers into level 3 trading liabilities primarily reflected transfers of certain equity derivatives from level 2, principally due to reduced transparency of certain volatility and correlation inputs.

Transfers out of level 3 trading liabilities primarily reflected transfers of certain equity derivatives to level 2, principally due to increased transparency of certain volatility and correlation inputs.

Unsecured Borrowings. Transfers into level 3 unsecured borrowings primarily reflected transfers of certain hybrid financial instruments from level 2, principally due to reduced transparency of certain volatility and correlation inputs.

Transfers out of level 3 unsecured borrowings primarily reflected transfers of certain hybrid financial instruments to level 2, principally due to a reassessment of the significance of certain credit spread inputs.

Fair Value of Financial Assets and Liabilities Not Measured at Fair Value

The company had financial assets of $234.52 billion as of December 2023 and $176.67 billion as of December 2022 that are not measured at fair value. Given that substantially all of these balances are short-term in nature, their carrying values in the balance sheet are a reasonable approximation of fair value.

The table below presents the company's financial liabilities that are not measured at fair value by expected maturity.

	As of December	
$ in millions	**2023**	2022
Current	**$ 198,299**	$ 144,021
Non-current	**65,159**	54,314
Total	**$ 263,458**	$ 198,335

In the table above:

- Current financial liabilities are short-term in nature and therefore their carrying values in the balance sheet are a reasonable approximation of fair value.
- Non-current financial liabilities primarily related to long-term intercompany loans and repurchase agreements. The interest rates of these instruments are variable in nature and approximate prevailing market interest rates for instruments with similar terms and characteristics. As such, their carrying values in the balance sheet are a reasonable approximation of fair value.

Note 31.

Financial Risk Management and Capital Management

Certain disclosures in relation to the company's financial risk management and capital management have been presented alongside other risk management and regulatory information in Part I of this annual report and are identified as audited, where relevant.

Maturity of Financial Assets, Financial Liabilities and Commitments

The table below presents an analysis of the cash flows of the company's financial assets, financial liabilities and commitments by contractual maturity except for trading assets and liabilities held for trading, which are classified as trading/on demand, reflecting the company's role as a market maker.

$ in millions	Trading/on demand	Less than 1 month	1-3 months	3 months - 1 year	1 - 5 years	Greater than 5 years	Total
As of December 2023							
Financial assets							
Cash and cash equivalents	$ 35,689	$ —	$ —	$ —	$ —	$ —	$ 35,689
Collateralised agreements	121,502	129,502	7,218	3,346	1,103	146	262,817
Customer and other receivables	72,888	—	—	—	—	—	72,888
Trading assets	818,880	106	7,391	1,985	—	—	828,362
Investments	—	—	—	—	220	69	289
Loans	—	—	—	22	118	34	174
Other assets	1,667	10	40	52	114	1,222	3,105
Total	$ 1,050,626	$ 129,618	$ 14,649	$ 5,405	$ 1,555	$ 1,471	$ 1,203,324
Financial liabilities							
Collateralised financings	$ 38,460	$ 47,584	$ 39,789	$ 34,759	$ 53,654	$ 1,573	$ 215,819
Customer and other payables	115,201	—	—	—	—	—	115,201
Trading liabilities	737,610	—	—	—	—	—	737,610
Unsecured borrowings	2,372	1,775	4,854	10,728	51,565	35,665	106,959
Other liabilities	1,891	1,277	6	13	1,015	32	4,234
Total	$ 895,534	$ 50,636	$ 44,649	$ 45,500	$ 106,234	$ 37,270	$ 1,179,823
Commitments							
Collateralised agreements	$ 798	$ 139,390	$ 1,301	$ 2,107	$ —	$ —	$ 143,596
Collateralised financings	6	44,606	2	559	—	—	45,173
Other	3,369	1	—	2	—	—	3,372
Total	$ 4,173	$ 183,997	$ 1,303	$ 2,668	$ —	$ —	$ 192,141
As of December 2022							
Financial assets							
Cash and cash equivalents	$ 11,707	$ —	$ —	$ —	$ —	$ —	$ 11,707
Collateralised agreements	89,770	130,603	10,973	3,250	877	323	235,796
Customer and other receivables	78,967	—	—	—	—	—	78,967
Trading assets	872,810	—	—	—	—	—	872,810
Investments	7	—	—	4	208	61	280
Loans	2	—	—	—	183	37	222
Other assets	1,430	10	425	9	47	673	2,594
Total	$ 1,054,693	$ 130,613	$ 11,398	$ 3,263	$ 1,315	$ 1,094	$ 1,202,376
Financial liabilities							
Collateralised financings	$ 22,830	$ 31,681	$ 10,753	$ 21,145	$ 37,013	$ 1,513	$ 124,935
Customer and other payables	110,983	—	—	—	—	—	110,983
Trading liabilities	844,313	—	—	—	—	—	844,313
Unsecured borrowings	1,935	2,325	4,573	8,573	37,018	33,572	87,996
Other liabilities	1,780	1,308	7	6	1,059	38	4,198
Total	$ 981,841	$ 35,314	$ 15,333	$ 29,724	$ 75,090	$ 35,123	$ 1,172,425
Commitments							
Collateralised agreements	$ 2,107	$ 102,471	$ 5,337	$ 8,028	$ 1,716	$ —	$ 119,659
Collateralised financings	82	68,956	9	1,606	1,433	—	72,086
Other	4,245	—	—	3	573	—	4,821
Total	$ 6,434	$ 171,427	$ 5,346	$ 9,637	$ 3,722	$ —	$ 196,566

In the table above:

- Cash flows by contractual maturity include interest that will accrue on intercompany loans (included in other assets, collateralised financings and unsecured borrowings), and debt securities issued measured at amortised cost (included in unsecured borrowings). All other financial assets and financial liabilities, which are primarily measured at fair value through profit or loss, have been disclosed at their carrying values, consistent with the values used in the liquidity risk management of these instruments.
- Cash collateral received and paid has been classified as trading/on demand, consistent with the derivatives that it primarily relates to.
- Liquidity risk on derivatives is mitigated through master netting agreements and cash collateral arrangements.
- Unsecured borrowings include certain debt securities issued that have trigger events that are not in the control of the company and could be repaid earlier than their contractual maturities.

The company manages liquidity risk according to three principles: (i) hold sufficient excess liquidity in the form of GCLA to cover outflows during a stress period; (ii) maintain appropriate Asset-Liability Management; and (iii) maintain a viable Contingency Funding Plan. See "Liquidity Risk Management — Liquidity Risk Management Principles" in Part I of this annual report for further details.

Note 32.

Transferred Assets

Assets Continued to be Recognised in Full. During 2023 and 2022, the company transferred certain financial assets where the transfers failed to meet the derecognition criteria, as contained in IFRS 9, and as a result of which the company continues to recognise these assets in full in the balance sheet.

The company transfers assets owned to counterparties in the ordinary course of business to collateralise repurchase agreements and other securities lending transactions. In these transactions the transferred assets continue to be recognised by the company for accounting purposes because the transactions require the financial instruments to be repurchased at maturity of the agreement and the company remains exposed to the price, credit and interest rate risk of these instruments. When the company receives cash proceeds from the transfer of the asset, a financial liability is recognised in respect of the consideration received and recorded in collateralised financings. When the company receives non cash collateral (in the form of securities) no liability is initially recognised. If collateral received is subsequently sold, the obligation to return the collateral is recognised as a liability in trading liabilities.

In addition to repurchase agreements and securities lending agreements, the company obtains funding through the use of other arrangements that fail to meet the derecognition criteria. For example, sales of securities with related derivatives, such as total return swaps, through which the company retains substantially all of the risk and reward of the transferred assets. A financial liability is recognised in such cases for the proceeds received.

Other financial assets transferred that continue to be recognised on balance sheet for accounting purposes relate to pledges of securities as collateral, primarily for derivative transactions. The obligations under such derivatives are recorded in trading liabilities.

The table below presents the company's financial assets which have been transferred but which remain on balance sheet for accounting purposes.

	As of December	
$ in millions	**2023**	2022
Money market instruments	**$ 20**	$ —
Government and agency obligations	**36,444**	14,034
Mortgage and other asset-backed loans and securities	**192**	135
Corporate debt instruments	**10,331**	7,444
Equity securities	**49,620**	22,990
Trading cash instruments	**96,607**	44,603
Corporate debt instruments	**45**	26
Equity securities	**—**	6
Investments	**45**	32
Total	**$ 96,652**	$ 44,635

The carrying value of the associated financial liabilities generally approximate the carrying value of the assets transferred.

Derecognised Assets With Ongoing Exposure. The company has continuing involvement in the form of derivative transactions and guarantees with certain unconsolidated structured entities to which the company had transferred financial assets. These derivatives may be credit-linked to the asset transferred and result in the company retaining specific risks in the transferred asset or require the company to make payments to the structured entity to compensate losses on the asset if certain contingent events occur.

In addition, the company transfers financial assets to securitisation vehicles. The company generally receives cash in exchange for the transferred assets but may have continuing involvement with the transferred assets, including ownership of beneficial interests in the securitised financial assets, primarily in the form of debt instruments. The company may also purchase senior or subordinated securities issued by securitisation vehicles in connection with secondary market-making activities.

Where the company's continuing involvement in transferred assets is through derivatives or guarantees, the maximum exposure to loss is the notional amounts of the derivative or guarantee. For retained or purchased interests in securitised assets, the company's risk of loss is limited to the fair value of these interests. In all cases these retained interests are carried at fair value.

The company accounts for assets pending transfer at fair value and therefore does not typically recognise significant gains or losses upon the transfer of assets. The company does not have continuing involvement that could require the company to repurchase derecognised financial assets.

Notes to the Financial Statements

The tables below present information about the company's exposure through continuing involvement and the gains or losses related to those transactions.

$ in millions	Carrying value	Maximum exposure to loss
As of December 2023		
Assets		
Trading cash instruments	**$ —**	**$ —**
Derivatives	**120**	**1,095**
Trading assets	**120**	**1,095**
Total	**$ 120**	**$ 1,095**
Liabilities		
Trading cash instruments	**$ —**	**$ —**
Derivatives	**(57)**	**693**
Trading liabilities	**(57)**	**693**
Total	**$ (57)**	**$ 693**
As of December 2022		
Assets		
Trading cash instruments	$ —	$ —
Derivatives	105	1,123
Trading assets	105	1,123
Total	$ 105	$ 1,123
Liabilities		
Trading cash instruments	$ —	$ 2
Derivatives	(43)	559
Trading liabilities	(43)	561
Total	$ (43)	$ 561

$ in millions	Income/ (expense) in the year	Cumulative income/ (expense)
As of December 2023		
Assets		
Trading cash instruments	**$ —**	**$ 133**
Derivatives	**6**	**293**
Trading assets	**6**	**426**
Total	**$ 6**	**$ 426**
Liabilities		
Trading cash instruments	**$ —**	**$ 1**
Derivatives	**(25)**	**(10)**
Trading liabilities	**(25)**	**(9)**
Customer and other payables	**—**	**(1)**
Total	**$ (25)**	**$ (10)**
As of December 2022		
Assets		
Trading cash instruments	$ —	$ 133
Derivatives	24	287
Trading assets	24	420
Total	$ 24	$ 420
Liabilities		
Trading cash instruments	$ 1	$ 1
Derivatives	(11)	15
Trading liabilities	(10)	16
Customer and other payables	—	(1)
Total	$ (10)	$ 15

UPDATED INFORMATION OF GOLDMAN SACHS INTERNATIONAL

The information in this section sets out the Principal Risks and Uncertainties. References to page numbers in this section are to the page numbers of such document.

Principal Risks and Uncertainties

Goldman Sachs International (GSI or the company) delivers a broad range of financial services to clients located worldwide. The company's ultimate parent undertaking and controlling entity is The Goldman Sachs Group, Inc. (GSG or Group Inc.). Group Inc., together with its consolidated subsidiaries, form "GS Group".

The company faces a variety of risks that are substantial and inherent in its businesses. The principal risks and uncertainties that the company faces are: market risk, liquidity risk, credit risk, operational risk, legal and regulatory risk, competition risk, and market developments and general business environment risk. These risks have been summarised below.

These risks are primarily addressed through the company's risk management and corporate governance framework, see "Risk Management – Overview and Structure of Risk Management" and "Directors' Report – Corporate Governance" for further information. For further information about liquidity risk, market risk, credit risk and operational risk and the company's mitigants, see "Liquidity Risk Management", "Market Risk Management", "Credit Risk Management", and "Operational Risk Management", respectively. Legal and regulatory risks are primarily managed by the company's independent risk oversight and control functions, see "Risk Management – Overview and Structure of Risk Management" for further information. Market developments and general business environment risks are overseen by a series of committees, councils and working groups at both the GS Group and the company level. Competition risk is primarily managed by the company's strategy and the company's engagement with employees, see "Directors' Report – Corporate Governance – Strategy" and "Directors' Report – Corporate Governance – Stakeholder Engagement – Engagement with Employees", respectively, for further information.

Market

- The company's businesses have been and may in the future be adversely affected by conditions in the global financial markets and broader economic conditions.
- The company's businesses have been and may in the future be adversely affected by declining asset values, particularly where it has net "long" positions, receives fees based on the value of assets managed, or receives or posts collateral.
- The company's market-making activities have been and may in the future be affected by changes in the levels of market volatility.
- The company's investment banking and client intermediation businesses have been adversely affected and may in the future be adversely affected by market uncertainty or lack of confidence among investors and chief executive officers due to declines in economic activity and other unfavourable economic, geopolitical or market conditions.
- Inflation has had, and could continue to have, a negative effect on the company's business, results of operations and financial condition.

Liquidity

- The company's liquidity, profitability and businesses may be adversely affected by an inability to access the debt capital markets or to sell assets.
- The company's 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 the company's and/or Group Inc.'s credit ratings or an increase in its credit spreads may adversely affect its liquidity and cost of funding.

Credit

- The company's 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 the company's market-making, underwriting, investing and financing activities.
- Derivative transactions and delayed documentation or settlements may expose the company to credit risk, unexpected risks and potential losses.

Operational

- A failure in the company's operational systems or human error, malfeasance or other misconduct, could impair the company's liquidity, disrupt its businesses, result in the disclosure of confidential information, damage its reputation and cause losses.
- A failure or disruption in the company's infrastructure, or in the operational systems or infrastructure of third parties, could impair the company's liquidity, disrupt its businesses, damage its reputation and cause losses.
- The development and use of artificial intelligence (AI) presents risks and challenges that may adversely impact the company's business.

Principal Risks and Uncertainties

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

- The company may incur losses as a result of ineffective risk management processes and strategies.

- The company is reliant on Group Inc. and other GS Group affiliates for client business, various services, capital and liquidity.

Legal and Regulatory

- The company's businesses and those of its 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 the company's businesses.

- Substantial civil or criminal liability or significant regulatory action against the company could have material adverse financial effects, or cause it significant reputational harm, which in turn could seriously harm its business prospects.

- In conducting its business around the world, the company is subject to political, legal, regulatory and other risks that are inherent in operating in many countries.

- The company's commodities activities, particularly its physical commodities activities, subject the company to extensive regulation and involve certain potential risks, including environmental, reputational, and other risks that may expose the company to significant liabilities and costs.

- The application of regulatory strategies and requirements to facilitate the orderly resolution of large financial institutions could create greater risk of loss for the company's security holders.

Competition

- The company's results have been and may in the future be adversely affected by the composition of its 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.

- The company's businesses would be adversely affected if it was unable to hire and retain qualified employees.

Market Developments and General Business Environment

- The company's 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 the company's businesses and adversely affect client activity levels, and the creditworthiness of its clients, counterparties and the company's actual or perceived action or inaction relating to climate change could result in damage to its reputation.

- The company's 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 company may be adversely affected by negative publicity.

- Certain of the company's businesses and its funding instruments may be adversely affected by changes in reference rates, currencies, indices, baskets or ETFs to which products it offers or funding it raises are linked.

- The company's 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.

- The company faces enhanced risks as GS Group operates in new locations, and the company transacts with a broader array of clients and counterparties.

The following are detailed descriptions of the company's principal risks and uncertainties summarised above.

Liquidity Risks

GSI's 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 GSI's businesses. It is of critical importance to GSI, as most of the failures of financial institutions have occurred in large part due to insufficient liquidity. GSI's liquidity may be impaired by an inability to access secured and/or unsecured debt markets, an inability to access funds from Group Inc. or other GS Group affiliates, an inability to sell assets or redeem investments, lack of timely settlement of transactions, or other unforeseen outflows of cash or collateral. This situation may arise due to circumstances that GSI may be unable to control, such as a general market or economic disruption or an operational problem that affects third parties or GSI or its affiliates or even by the perception among market participants that GSI, or other market participants, are experiencing greater liquidity risk.

GSI employs structured products to benefit its clients and hedge its own risks. The financial instruments that GSI holds and the contracts to which it is a party are often complex, and these complex structured products often do not have readily available markets to access in times of liquidity stress. GSI's 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 GSI's positions.

Further, GSI's 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, clearing houses, exchanges and other financial institutions with which GSI interacts may exercise set-off rights or the right to require additional collateral, including in difficult market conditions, which could further impair GSI's liquidity.

Numerous regulations have been adopted that impose more stringent liquidity requirements on large financial institutions, including us. These regulations require GSI to hold large amounts of highly liquid assets and reduce GSI's flexibility to source and deploy funding.

GSI's 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 for GSI or Group Inc., as well as significant declines in the availability of credit, have in the past adversely affected GSI's ability to borrow on a secured and unsecured basis and may do so in the future. GSI obtains the majority of its unsecured funding indirectly from Group Inc., which funds itself on an unsecured basis by issuing long-term debt, by raising deposits at its bank subsidiaries, by issuing *hybrid financial instruments and by obtaining bank loans or* lines of credit. GSI seeks to finance many of its assets on a secured basis. Any disruptions in the credit markets may make it harder and more expensive to obtain funding for businesses. If GSI's available funding is limited or GSI is forced to fund operations at a higher cost, these conditions may require curtailment of business activities and increase the cost of funding, both of which could reduce profitability, particularly in businesses that involve investing and market making.

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 clients' merger and acquisition transactions, particularly large transactions, and adversely affect GSI's advisory and underwriting businesses. GSI's 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 GSI's and/or Group Inc.'s credit ratings or an increase in its credit spreads may adversely affect its liquidity and cost of funding.

GSI is an indirect, wholly-owned operating subsidiary of Group Inc. and depends on Group Inc. for capital and funding. The credit ratings of GSI and those of Group Inc. are important to GSI's liquidity. A reduction in GSI's and/or Group Inc.'s credit ratings could adversely affect GSI's liquidity and competitive position, increase borrowing costs, limit access to the capital markets or funding from Group Inc. or trigger obligations under certain provisions in some trading and collateralised financing contracts. Under these provisions, counterparties could be permitted to terminate contracts with GSI or Group Inc. or require additional collateral. Termination of trading and collateralised financing contracts could cause losses and impair liquidity by requiring Group Inc. or GSI to find other sources of financing or to make significant cash payments or securities movements.

GSI's cost of obtaining long-term unsecured funding is directly related to both the credit spreads (the amount in excess of the interest rate of benchmark securities that we need to pay) of GSI and Group Inc. increases in the credit spreads of GSI and/or Group Inc. can significantly increase the cost of this funding. Changes in credit spreads are continuous, market-driven, and subject at times to unpredictable and highly volatile movements. The credit spreads of GSI and/or Group Inc. are also influenced by market perceptions of GSI's and/or Group Inc.'s creditworthiness and movements in the costs to purchasers of credit default swaps referenced to Group Inc.'s 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.

Market Risks

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

GSI's businesses, by their nature, do not produce predictable earnings and 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.

GSI's financial performance is highly dependent on the environment in which its businesses operate. A favourable business environment is generally characterised 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.

Unfavourable 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; 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, 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 chief executive officer 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 GSI's businesses. Periods of low volatility and periods of high volatility combined with a lack of liquidity, have at times had an unfavourable impact on GSI's 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 GSI or GSI's 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 collateralised 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 a significant market uncertainty in the periods leading up to the elections and this could cause higher volatility, lower levels of market activity and other adverse conditions for GSI's businesses.

The outcomes of the elections could also result in significant changes in policy, which could also have adverse effects on GSI or the business environment in which GSI operates more generally.

GSI's businesses have been and may in the future be adversely affected by declining asset values, particularly where GSI has net "long" positions, receives fees based on the value of assets managed, or receives or posts collateral.

Many of GSI's businesses have net "long" positions in debt securities, loans, derivatives, mortgages, equities (including private equity) and most other asset classes. These include positions taken when GSI acts as a principal to facilitate clients' activities, including exchange-based market-making activities, or commits large amounts of capital to maintain positions in interest rate and credit products, as well as through currencies, commodities, equities and mortgage-related activities. In addition, GSI invests in similar asset classes. Substantially all of GSI's investing and market-making positions are marked-to-market on a daily basis and declines in asset values directly and immediately impact earnings, unless GSI has effectively "hedged" its exposures to those declines.

In certain circumstances (particularly in the case of credit products 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 for GSI to hedge its exposures and to the extent that this is done the hedge may be ineffective or may greatly reduce GSI's 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. GSI may incur losses from time to time as trading markets deteriorate or cease to function, including with respect to securities offerings GSI has underwritten. The inability to sell or effectively hedge assets reduces GSI's 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, GSI's capital, liquidity or leverage ratios, its funding costs and its ability to deploy capital.

In GSI's exchange-based market-making activities, GSI is 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.

Collateral is posted to support obligations of GSI and received that supports the obligations of 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 GSI is the party providing collateral, this can increase costs and reduce profitability and if GSI is the party receiving collateral, this can also reduce profitability by reducing the level of business done with 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 GSI forecloses 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 GSI, especially where there is a single type of collateral supporting the obligation. In addition, GSI may 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.

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

Certain of GSI's 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 GSI's market-making activities and can cause GSI to reduce its inventory. Limiting the size of GSI's market-making positions can adversely affect GSI's 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, GSI has been and may in the future be forced to either take on additional risk or to realize losses in order to decrease its VaR. In addition, increases in volatility increase the level of GSI's RWAs, which increases the amount of capital that GSI is required to hold, and this can reduce GSI's profitability and reduce its ability to distribute capital to its shareholders.

GSI's investment banking and client intermediation businesses have been adversely affected and may in the future be adversely affected by market uncertainty or lack of confidence among investors and chief executive officers due to declines in economic activity and other unfavourable economic, geopolitical or market conditions.

GSI's 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 GSI's revenues and profit margins. In particular, because a significant portion of GSI's investment banking revenues is derived from GSI's participation in large transactions, a decline in the number of large transactions has in the past and would in the future adversely affect GSI's 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 GSI's 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 GSI's revenues.

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

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

Inflationary pressures have affected economies, financial markets and market participants worldwide. Inflationary pressures have increased certain of GSI's 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 GSI's equity and debt investments. Higher interest rates increase GSI's borrowing costs. If inflationary pressures persist, GSI's expenses may increase further; activity levels for certain of GSI's businesses,

in particular debt underwriting, may decline; GSI's interest expense could increase faster than GSI's interest income, reducing GSI's net interest income and net interest margin; certain of GSI's investments could continue to incur losses or generally low levels of returns; assets under supervision could decline, reducing management and other fees; economies worldwide could experience recessions; and GSI could continue to operate in a generally unfavourable economic and market environment.

Credit Risks

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

GSI is exposed to the risk that third parties who owe money, securities or other assets will not perform their obligations. These parties may default on their obligations to GSI 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 GSI.

GSI is also subject to the risk that its 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 are held by GSI, including a deterioration in the value of collateral posted by third parties to secure their obligations to GSI under derivatives contracts and loan agreements, could result in losses and/or adversely affect GSI's ability to rehypothecate or otherwise use those securities or obligations for liquidity purposes.

A significant downgrade in the credit ratings of GSI's counterparties could also have a negative impact on GSI's results. While in many cases GSI is permitted to require additional collateral from counterparties that experience financial difficulty, disputes may arise as to the amount of collateral GSI is entitled to receive and the value of pledged assets. The termination of contracts and the foreclosure on collateral may subject GSI to claims for the improper exercise of its 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 GSI's clearing and prime financing activities, GSI finances its clients' positions, and GSI could be held responsible for the defaults or misconduct of GS's 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 GSI's market-making, underwriting, investing and financing activities.

Concentration of risk increases the potential for significant losses in market-making, underwriting, investing and financing activities. The number and size of these transactions has affected and may in the future affect GSI's results of operations in a given period. Moreover, because of concentrated risk, GSI may suffer losses even when economic and market conditions are generally favourable for competitors. Disruptions in the credit markets can make it difficult to hedge these credit exposures effectively or economically.

In the ordinary course of business, GSI is 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 entities could negatively impact GSI's businesses, perhaps materially, and the systems by which GSI sets limits and monitors the level of its credit exposure to individual entities, industries, countries and regions may not function as anticipated. Regulatory reforms, including the European Market Infrastructure Regulation and the Dodd-Frank Wall Street Reform and Consumer Protection Act have led to increased centralisation of trading activity through particular clearing houses, central agents or exchanges, which has significantly increased GSI's concentration of risk with respect to these entities. While GSI's activities expose it to many different industries, counterparties and countries, GSI routinely executes a high volume of transactions with counterparties engaged in financial services activities, including brokers and dealers, commercial banks, clearing houses and exchanges. This has resulted in significant credit concentration with respect to these counterparties.

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

GSI is party to a large number of derivative transactions, including credit derivatives. Many of these derivative instruments are individually negotiated and non-standardised, which can make exiting, transferring or settling positions difficult. Many credit derivatives require that GSI deliver to the counterparty the underlying security, loan or other obligation in order to receive payment. In a number of cases, GSI does 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 GSI to forfeit the payments due under these contracts or result in settlement delays with the attendant credit and operational risk as well as increased costs to GSI.

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 International Swaps and Derivatives Association Universal Resolution Stay Protocol (the "**ISDA Universal Protocol**") and the International Swaps and Derivatives Association 2018 U.S. Resolution Stay Protocol (collectively, the "**ISDA Protocols**"), GSI may not be able to exercise termination rights and other remedies against counterparties and, as this regime has not yet been tested, GSI may suffer risks or losses that it would not have expected to suffer if it 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 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, GSI is subject to heightened credit and operational risk and in the event of a default may find it more difficult to enforce its 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 GSI's ability to effectively manage its risk exposures from these products and subject it to increased costs. The provisions of legislation requiring central clearing of credit derivatives and other over-the-counter derivatives, or a market shift toward standardised derivatives, could reduce the risk associated with these transactions, but under certain circumstances could also limit GSI's ability to develop derivatives that best suit the needs of clients and to hedge its own risks, and could adversely affect GSI's profitability. In addition, these provisions have increased credit exposure to central clearing platforms.

Operational Risks

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

GSI's businesses are highly dependent on its 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 provided to clients, often must adhere to client-specific guidelines, as well as legal and regulatory standards.

Many rules and regulations worldwide govern GSI's 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 GSI has 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 GSI's 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. These risks are exacerbated in times of increased volatility.

GSI's 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 GSI's control, such as a spike in transaction volume, adversely affecting GSI's ability to process these transactions or provide these services. GSI must continuously update these systems to support its operations and growth and to respond to changes in regulations and markets, and invest heavily in systemic controls and training to pursue GSI's objective of ensuring that such transactions do not violate applicable rules and regulations or, due to errors in processing such transactions, adversely affect markets, GSI's clients and counterparties or GSI. 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 GSI's employees and the operation of GSI's systems and businesses and those of its clients and 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 GSI's employees or by GSI's 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 GSI's systems and platforms and GSI's 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 GSI's businesses and may hinder GSI's clients' access to GSI's platforms. There have been a number of widely publicised 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, GSI's businesses ultimately rely on people as its 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 GSI's technological processes or by GSI's 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 GSI.

The majority of GSI's employees are based in London and work in close proximity to one another. They are subject to potential catastrophic events, including, but not limited to, terrorist attacks, extreme weather, or other hostile events that could negatively affect GSI's business. Notwithstanding GSI's efforts to maintain business continuity, business disruptions impacting GSI's offices and employees could lead to GSI's employees' inability to occupy the offices, communicate with or travel to other office locations or work remotely. As a result, GSI's ability to service and interact with clients may be adversely impacted, due to GSI's failure or inability to successfully implement business contingency plans.

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

GSI faces the risk of operational failure or significant operational delay, termination or capacity constraints of any of the clearing agents, exchanges, clearing houses or other financial intermediaries that it uses to facilitate securities and derivatives transactions, and as interconnectivity with clients grows, GSI will increasingly face the risk of operational failure or significant operational delay with respect to clients' systems.

There has been significant consolidation among clearing agents, exchanges and clearing houses and an increasing number of derivative transactions are cleared on exchanges, which has increased GSI's exposure to operational failure or significant operational delay, termination or capacity constraints of the particular financial intermediaries that GSI uses and could affect GSI's 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 clearing houses, 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 GSI's 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 GSI's ability to effect transactions, service GSI's clients, manage GSI's exposure to risk or expand GSI's businesses or result in financial loss or liability to GSI's clients, impairment of GSI's liquidity, disruption of GSI's businesses, regulatory intervention or reputational damage.

Despite GSI's resiliency plans and facilities, its ability to conduct business may be adversely impacted by a disruption in the infrastructure that supports its businesses and the communities where GSI is located. This may include a disruption involving electrical, satellite, undersea cable or other communications, internet, transportation or other facilities used by GSI, its employees or third parties with which GSI conducts business, including cloud service providers. These disruptions may occur as a result of events that affect only GSI's buildings or systems or those of such 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 GSI seeks to diversify its third-party vendors to increase its resiliency, GSI is also exposed to the risk that a disruption or other information technology event at a common service provider to GSI's vendors could impede their ability to provide products or services to GSI, including in connection with GSI's new business initiatives. GSI may not be able to effectively monitor or mitigate operational risks relating to its 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. GSI is exposed to risks, and may become exposed to additional risks, related to distributed ledger technology, including through GSI's facilitation of clients' activities involving financial products that use distributed ledger technology, such as blockchain, or other digital assets, GSI's 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, clearing houses and other financial intermediaries, and the receipt of 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) presents risks and challenges that may adversely impact GSI's business.

GSI or GSI's 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 GSI's business. The legal and regulatory environment relating to AI is uncertain and rapidly evolving, 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 GSI's implementation of AI technology and increase GSI's 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, GSI 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 GSI may have limited visibility. Any of these risks could expose GSI to liability or adverse legal or regulatory consequences and harm GSI's reputation and the public perception of GSI's business or the effectiveness of GSI's security measures.

In addition to GSI's use of AI technologies, GSI is 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 GSI's computer systems, networks and information, and its clients' information, against cyber attacks and similar threats could impair its ability to conduct its businesses, result in the disclosure, theft or destruction of confidential information, damage its reputation and cause losses.

GSI's operations rely on the secure processing, storage and transmission of confidential and other information in GSI's computer systems and networks and those of GSI's vendors. There have been a number of highly publicised cases involving financial services companies, consumer-based companies, software and information technology service providers, governmental agencies and other organisations 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 publicised cases where hackers have requested "ransom" payments in exchange for not disclosing customer information or for restoring access to information or systems.

GSI is regularly the target of attempted cyber attacks, including denial-of-service attacks, and must continuously monitor and develop its systems to protect the integrity and functionality of its technology infrastructure and access to and the security of its data. Further, the use of AI by cybercriminals may increase the frequency and severity of cybersecurity attacks against GSI or GSI's third-party vendors and clients. The migration of GSI's communication from devices GSI provides to employee-owned devices presents additional risks of cyber attacks, as do hybrid work arrangements. In addition, due to the interconnectivity with third-party vendors (and their respective service providers), central agents, exchanges, clearing houses and other financial institutions, GSI 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 unauthorised access to or disclosure of client, customer or other confidential information, which could, in turn, interrupt certain of GSI's businesses.

Despite GSI's efforts to ensure the integrity of its systems and information, it 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 recognised 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 organised crime or terrorist organisations. Third parties may also attempt to place individuals in GSI's office or induce employees, clients or other users of GSI's systems to disclose sensitive information or provide access to GSI's data or that of its clients, and these types of risks may be difficult to detect or prevent.

Although GSI takes protective measures proactively and endeavours to modify them as circumstances warrant, its computer systems, software and networks may be vulnerable to unauthorised access, misuse, computer viruses or other malicious code, cyber attacks on GSI's vendors and other events that could have a security impact. Risks relating to cyber attacks on GSI's 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 GSI's systems, the process of enhancing protective measures can itself create a risk of systems disruptions and security issues. In addition, protective measures that GSI employs to compartmentalise its data may reduce its visibility into, and adversely affect its ability to respond to, cyber threats and issues within its systems.

If one or more of these types of events occur, it potentially could jeopardise GSI or its clients' or counterparties' or third parties' confidential and other information processed, stored in or transmitted through GSI's computer systems and networks, or otherwise cause interruptions or malfunctions in GSI's operations or those of its clients, its counterparties or third parties, which could impact their ability to transact with GSI 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 GSI to obtain full and reliable information about the extent, amount and type of information compromised. During the course of an investigation, GSI 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 GSI's business, results of operations and reputation. Moreover, new regulations require Group Inc. 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.

GSI has expended, and expects to continue to expend, significant resources on an ongoing basis to modify its protective measures and to investigate and remediate vulnerabilities or other exposures, but these measures may be ineffective and GSI 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 it maintains. Regulatory agencies have become increasingly focused on cybersecurity incidents.

GSI's 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 unauthorised account activity could harm GSI's reputation and may have adverse effects on its business, financial condition and results of operations.

The increased use of mobile and cloud technologies heightens these and other operational risks, as can hybrid work arrangements. Certain aspects of the security of these technologies are unpredictable or beyond GSI's control, and the failure by mobile technology and cloud service providers to adequately safeguard their systems and prevent cyber attacks could disrupt GSI's 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.

GSI routinely transmits and receives personal, confidential and proprietary information by email and other electronic means. GSI has discussed and worked with clients, vendors, service providers, counterparties and other third parties to develop secure transmission capabilities and protect against cyber attacks, but does not have, and may be unable to put in place, secure capabilities with all of its clients, vendors, service providers, counterparties and other third parties and it 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.

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

GSI seeks to monitor and control its 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. GSI's risk management process seeks to balance its ability to profit from market-making positions and underwriting activities with its exposure to potential losses. Whilst GSI employs a broad and diversified set of risk monitoring and risk mitigation techniques, those techniques and the judgements that accompany their application cannot anticipate every economic and financial outcome or the specifics and timing of such outcomes. Thus, in the course of its activities, GSI has 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 GSI uses to assess and control its 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 GSI's hedging strategies and have caused it 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 GSI's. In these and other cases, it may be difficult to reduce GSI's 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 GSI has positions through its market-making or origination activities or it makes investments directly through its investing activities, including private equity, that do not have an established liquid trading market or are otherwise subject to restrictions on sale or hedging, GSI may not be able to reduce its positions and therefore reduce its risk associated with those positions.

Principal Risks and Uncertainties

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

GSI is reliant on Group Inc. and other GS Group affiliates for client business, various services and capital.

GSI is a wholly-owned subsidiary of Group Inc. As a wholly-owned subsidiary, GSI relies on various business relationships of Group Inc. and other GS Group affiliates generally, including the ability to receive various services, as well as, in part, the capital and liquidity of GSI's ultimate parent, Group Inc., as well as the liquidity of Goldman Sachs Funding LLC ("**Funding IHC**"), a wholly-owned, direct subsidiary of Group Inc. that facilitates the execution of GS Group's preferred resolution strategy. Although GSI has taken steps to reduce its reliance on other GS Group affiliates, it remains an operating subsidiary of a larger organisation and therefore its interconnectedness within the organisation will continue. Because GSI's business relies upon Group Inc. and other GS Group affiliates to a significant extent, risks that could affect these entities could also have a significant impact on GSI.

Furthermore, GSI relies upon certain GS Group affiliates for various support services, including, but not limited to, trade execution, relationship management, settlement and clearing, risk management and other technical, operational and administrative services. Such services are provided to GSI pursuant to the intercompany services agreement, which is generally terminable upon mutual agreement of Group Inc. and its subsidiaries, subject to certain exceptions, including material breach of the agreement.

As a consequence of the foregoing, in the event GSI's relationships with other GS Group affiliates are not maintained, for any reason, including as a result of possible strategic decisions that Group Inc. may make from time-to-time or as a result of material adverse changes in Group Inc.'s performance, GSI's net revenues may decline, the cost of operating and funding its business may increase and GSI's business, financial condition and profitability may be materially and adversely affected.

Furthermore, GSI receives a portion of its funding in the form of unsecured funding indirectly from Group Inc. and from Funding IHC, and collateralised financings from other GS Group affiliates. To the extent such funding is not available to GSI, its growth could be constrained and/or its cost of funding could increase.

Legal and Regulatory Risks

GSI's businesses and those of its clients are subject to extensive and pervasive regulation around the world.

As a participant in the financial services industry and a subsidiary of a systemically important financial institution, GSI is subject to extensive regulation, principally in the U.K., and the E.U. more generally, but also in the U.S. as a subsidiary of Group Inc. and in certain other jurisdictions. GSI faces the risk of significant intervention by law enforcement, regulatory and tax authorities, as well as private litigation, in all jurisdictions in which it conducts its businesses. In many cases, GSI's 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 GSI's compliance with laws and regulations, GSI or its employees have been and could be fined, criminally charged or sanctioned, prohibited from engaging in certain business activities, subjected to limitations or conditions on its business activities including higher capital requirements, or subjected to new or substantially higher taxes or other governmental charges in connection with the conduct of its businesses or with respect to its employees. These limitations or conditions may limit business activities and negatively impact GSI's profitability.

In addition to the impact on the scope and profitability of GSI's business activities, day-to-day compliance with laws and regulations has involved and will continue to involve significant amounts of time, including that of GSI's 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 GSI's profitability.

GSI's revenues and profitability and those of its 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 and regulations that apply to GSI's businesses are often complex and, in many cases, GSI must make interpretive decisions regarding the application of those laws and regulations to its business activities. Changes in interpretations, whether in response to regulatory guidance, industry conventions, GSI's own reassessments or otherwise, could adversely affect its businesses, results of operations or ability to satisfy applicable regulatory requirements, such as capital or liquidity requirements.

Principal Risks and Uncertainties

If there are new laws or regulations or changes in the interpretation or enforcement of existing laws or regulations applicable to GSI, GSI's businesses or those of GSI's clients, including changes to the U.K. capital framework under the Basel Committee on Banking Supervision's ("**Basel Committee**") capital framework for strengthening internal capital standards ("**Basel III**"), including changes to minimum capital requirements, liquidity, leverage, long-term debt, margin requirements, restrictions on other business practices, reporting requirements, the application of regulatory strategies and requirements to facilitate the orderly resolution of large financial institutions, 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) which may include GSI or GS Group, compliance with these new laws and regulations, or changes in the enforcement of existing laws or regulations, could adversely affect GSI's 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 GSI's businesses. Changes to laws and regulations, such as tax laws, could also have a disproportionate impact on GSI, based on the way those laws or regulations are applied to financial services and financial firms or due to its corporate structure or how we provide these services.

These developments could impact GSI's profitability in the affected jurisdictions, or even make it uneconomic to continue to conduct all or certain businesses in those jurisdictions, or could result in GSI incurring significant costs associated with changing business practices, restructuring businesses, moving all or certain businesses and employees to other locations or complying with applicable capital requirements, including liquidating assets or raising capital in a manner that adversely increases GSI's funding costs or otherwise adversely affects its shareholder 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 Group Inc. operates and have adversely affected and may in the future adversely affect Group Inc.'s profitability. Among the aspects of the Dodd-Frank Act that have affected or may in the future affect Group Inc.'s businesses are: increased capital, liquidity and reporting requirements; limitations on activities in which Group Inc. 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.

In July 2023, the U.S. federal bank regulatory authorities proposed a rule implementing the Basel Committee's finalisation of the Basel III post-crisis regulatory reforms (the "**Basel III Revisions**"). Among other changes, this rule includes provisions that set a floor on internally modelled capital requirements at a percentage of the capital requirements under the standardised approach (known as the 'output floor'). The U.K.'s Prudential Regulatory Authority's (the "**PRA**") proposed Basel III Revisions exclude U.K. subsidiaries of overseas banking groups that are subject to the output floor on a global consolidated basis from a standalone output floor requirement. As such, GSI does not expect to be subject to this requirement on a standalone basis in the U.K., however the impact of the proposed rules is subject to uncertainty until they are finalised by U.S. regulators and the PRA and corresponding legislation is implemented. In September 2023, the PRA announced a delay in the proposed effective date of the Basel III Revisions by six months to July 1, 2025 and announced that it will publish near-final policy statements on market risk, credit valuation adjustment risk, counterparty credit risk and operational risk in the fourth quarter of 2023 and near-final policy statements on credit risk, the output floor, and reporting and disclosure requirements in the second quarter of 2024. GSI is also subject to laws and regulations, such as the General Data Protection Regulation ("**GDPR**"), relating to the privacy of the information of clients, employees or others, and any failure to comply with these laws and regulations could expose GSI to liability and/or reputational damage. As new privacy-related laws and regulations are implemented, the time and resources needed for GSI to comply with such laws and regulations, as well as GSI's potential liability for non-compliance and reporting obligations in the case of data breaches, may significantly increase.

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

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 GSI has fiduciary obligations in connection with acting as a financial advisor or investment advisor 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.

Further, we are subject to regulatory settlements, orders and feedback that require significant remediation activities, which require us to commit significant resources, including hiring, as well as testing the operation and effectiveness of new controls, policies and procedures.

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

Due to the broad scope of GS Group’s businesses and client base, GSI regularly addresses potential conflicts of interest, including situations where services to a particular client or GS Group’s 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 its businesses have access to material non-public information that may not be shared with other businesses within GS Group and situations where it may be a creditor of an entity with which GS Group also has an advisory or other relationship.

Extensive procedures and controls are in place that are designed to identify and address conflicts of interest, including those designed to prevent the improper sharing of information among businesses. However, appropriately identifying and dealing with conflicts of interest is complex and difficult, and GSI’s reputation, which is one of its most important assets, could be damaged and the willingness of clients to enter into transactions with GSI may be adversely affected if it fails, or appears 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, GS Group’s One Goldman Sachs initiative aims to increase collaboration amongst its businesses, which may increase the potential for actual or perceived conflicts of interest and improper information sharing. The realignment of GS Group’s businesses and segments presents similar risks.

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

GSI faces significant legal risks in its businesses, and the volume of claims and amount of damages and penalties claimed in litigation and regulatory proceedings against financial institutions remain high. GSI is, from time to time, subject to a number of other investigations and reviews by, and in some cases has received requests for documents and information from, various governmental and regulatory bodies and self-regulatory organisations relating to various aspects of GSI’s businesses and operations. GSI has seen legal claims by clients increase in a market downturn and employment-related claims increase following periods of headcount reduction. Additionally, governmental entities have been plaintiffs and are parties in certain of GSI’s legal proceedings, and it 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 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, GSI, or GS Group, 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.

GSI is subject to laws and regulations worldwide, including the U.S. Foreign Corrupt Practices Act 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 GSI’s activities and damage to its reputation.

Resolution of a criminal matter involving GSI or its employees could lead to increased exposure to civil litigation, could adversely affect GSI's reputation, could result in penalties or limitations on GSI's ability to conduct its activities generally or in certain circumstances and could have other negative effects.

In conducting its business around the world, GSI is subject to political, legal, regulatory and other risks that are inherent in operating in many countries.

In conducting GSI's businesses and supporting its global operations, GSI is subject to risks of possible nationalisation, expropriation, price controls, capital controls, exchange controls, communications and other content restrictions and other restrictive governmental actions, as well as the outbreak of hostilities or acts of terrorism. 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 GSI is involved are uncertain and evolving, and it may be difficult to determine the exact requirements of local laws in every market. GSI has been in some cases subject to divergent and conflicting laws and regulations across markets, and is increasingly subject to the risk that the jurisdictions in which it operates have implemented or may implement laws and regulations that directly conflict with those of another jurisdiction. Any determination by local regulators that GSI has not acted in compliance with the application of local laws in a particular market or a failure to develop effective working relationships with local regulators could have a significant and negative effect not only on GSI's businesses in that market, but also on its reputation generally. Further, in some jurisdictions a failure, or alleged failure, to comply with laws and regulations have subjected and may in the future subject GSI and its personnel not only to civil actions but also criminal actions and other sanctions. GSI is also subject to the enhanced risk that transactions it structures might not be legally enforceable in all cases.

While business and other practices throughout the world differ, GSI is subject in its 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 U.S. Foreign Corrupt Practices Act, the U.S. Bank Secrecy Act, as amended, and the U.K. Bribery Act. While GSI has invested and continues to invest significant resources in training and in compliance monitoring, the geographical diversity of its operations, employees, and clients, as well as the vendors and other third parties that GSI deals with, greatly increases the risk that GSI may be found in violation of such rules or regulations and any such violation could subject it to significant penalties or adversely affect its reputation.

In addition, there have been a number of highly publicised cases around the world, involving actual or alleged fraud or other misconduct by employees in the financial services industry in recent years, and GSI has 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 taken to prevent and detect this activity have not been and may not be effective in all cases, as reflected by the settlements relating to 1Malaysia Development Berhad ("**1MDB**").

The application of regulatory strategies and requirements to facilitate the orderly resolution of large financial institutions could create greater risk of loss for GSI's security holders.

The circumstances in which a resolution authority would exercise its "bail-in" powers to recapitalise a failing entity by writing down its unsecured debt or converting it into equity are uncertain. If these powers were to be exercised (or if there was a suggestion that they could be exercised) in respect of GSI, such exercise would likely have a material adverse effect on the value of debt investments in GSI, including a potential loss of some or all of such investments.

The EU Bank Recovery and Resolution Directive ("**BRRD**") entered into force on 2 July 2014. EU member states were required to adopt and publish the laws, regulations and administrative provisions necessary to comply with the BRRD. Its stated aim is to provide national "resolution authorities" with powers and tools to address banking crises pre-emptively in order to safeguard financial stability and minimise taxpayers' exposure to losses.

The majority of the requirements of the BRRD have been implemented in the UK through the UK Banking Act 2009, as amended, and related statutory instruments (together, the "**UK Banking Act**"). The UK Banking Act provides for a "resolution regime" granting substantial powers to the Bank of England (or, in certain circumstances, HM Treasury), to implement resolution measures (in consultation with other UK authorities) with respect to a UK financial institution (such as GSI) where the resolution authority considers that the relevant institution is failing or is likely to fail, there is no reasonable prospect of other measures preventing the failure of the institution and resolution action is necessary in the public interest.

The resolution powers available to the resolution authority include powers to: write down the amount owing, including to zero, or convert the relevant securities into other securities, including ordinary shares of the relevant institution (or a subsidiary) – the so-called "bail-in" tool; transfer all or part of the business of the relevant institution to a "bridge bank"; transfer impaired or problem assets to an asset management vehicle; and sell the relevant institution to a commercial purchaser.

In addition, the resolution authority is empowered to modify contractual arrangements, suspend enforcement or termination rights that might otherwise be triggered and disapply or modify laws in the UK (with possible retrospective effect) to enable the recovery and resolution powers under the UK Banking Act to be used effectively.

You should assume that, in a resolution situation, financial public support will only be available to GSI (or any member of Goldman Sachs) as a last resort after the relevant resolution authorities have assessed and used, to the maximum extent practicable, the resolution tools, including the bail-in tool.

In the event that GSI, or any of its affiliates, becomes subject to a proceeding under the Federal Deposit Insurance Act or Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act (together, the "**U.S. Special Resolution Regimes**"), default rights against GSI in relation to the Instruments or (if applicable) to the relevant Guarantee given by GSI (as Guarantor) in relation to any Instruments issued by GSW, are permitted to be exercised to no greater extent than such default rights could be exercised under such U.S. Special Resolution Regime if the Instruments were governed by the laws of the United States or a state of the United States.

You should be aware that the exercise of any such resolution power or even the suggestion of any such potential exercise in respect of GSI (or any member of Goldman Sachs) could have a material adverse effect on the rights of holders of Securities and (if applicable) the relevant Guarantee given by GSI (as Guarantor), and could lead to a loss of some or all of the investment. The resolution regime is designed to be triggered prior to insolvency of the relevant institution, and holders of securities issued by such institution may not be able to anticipate the exercise of any resolution power (including exercise of the "bail-in" tool) by the resolution authority. Further, holders of securities issued by an institution which has been taken into a resolution regime will have very limited rights to challenge the exercise of powers by the resolution authority, even where such powers have resulted in the write down of the securities or conversion of the securities to equity.

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

As part of GSI's commodities business, GSI purchases and sells certain physical commodities, arranges for their storage and transport, and engages 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.

GSI makes investments in and finances entities that engage in the production, storage and transportation of numerous commodities, including many of the commodities referenced above. These activities subject GSI and/or the entities in which GSI invests to extensive and evolving national, regional 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 GSI's commodities-related activities and investments. Compliance with these laws and regulations could 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 GSI's intermediation activities and investments are also subject to the risk of unforeseen or catastrophic events, which are likely to be outside of GSI's 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, GSI relies on third-party suppliers or service providers to perform GSI's 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 GSI to costs or losses. Also, while GSI seeks to

insure against potential risks, GSI does not have insurance to cover some of these risks and the insurance that GSI has may be inadequate to cover our losses.

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

GSI has 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 Risks

GSI's results have been and may in the future be adversely affected by the composition of its client base.

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

Correspondingly, favourable or simply less adverse developments or market conditions involving industries or markets in a business where GSI has a lower concentration of clients in such industry or market have also resulted in the past and may result in the future in GSI underperforming relative to a similar business of a competitor that has a higher concentration of clients in such industry or market. For example, GSI has a smaller corporate client base in its market-making businesses than some of its peers and therefore GSI's competitors may benefit more from increased activity by corporate clients. Similarly, GSI has 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 its market share in equities execution.

The financial services industry is highly competitive.

The financial services industry and all of GSI's businesses are intensely competitive, and GSI expects them to remain so. GSI competes 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, GSI has had to commit capital to support its international operations and to execute large global transactions. To the extent GSI expands into new business areas and new geographic regions, it will face competitors with more experience and more established relationships with clients, regulators and industry participants in the relevant market, which could adversely affect its ability to expand.

Governments and regulators have adopted regulations, imposed taxes, adopted compensation restrictions or otherwise put forward various proposals that have impacted or may impact GSI's ability to conduct certain of its 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 GSI's competitors, could impact its ability to compete effectively.

Pricing and other competitive pressures in GSI's businesses have continued to increase, particularly in situations where some competitors may seek to increase market share by reducing prices. For example, in connection with investment banking and other engagements, in response to competitive pressure GSI has experienced, GSI has extended and priced credit at levels that in some cases have not fully compensated it for the risks it has undertaken.

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 GSI has 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 GSI 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 GSI's business and industry. The growth of electronic trading and the introduction of new technologies is changing GSI's businesses and presenting GSI with new challenges. Securities, futures and options transactions are increasingly occurring electronically, both on GSI's 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 GSI, particularly GSI's exchange-based market-making activities, and GSI may experience continued competitive pressures in these and other areas. In addition, the increased use by GSI's 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 GSI's clients increasingly use GSI's systems to trade directly in the markets, GSI may incur liabilities as a result of their use of GSI's order routing and execution infrastructure.

GSI has 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 GSI to invest resources to adapt its existing products and services, and GSI expects to continue to make such investments, which could be material. The adoption and evolution of such new technologies may also increase GSI's 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 GSI's 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 GSI's competitors. GSI 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 GSI's existing products and services, adapting to changes in client preferences or achieving market acceptance of GSI's products and services, any of which could affect GSI's ability to attract or retain clients, cause GSI to lose market share or result in service disruptions and in turn reduce GSI's revenues or otherwise adversely affect GSI.

GSI's businesses would be adversely affected if it is unable to hire and retain qualified employees.

GSI's performance is largely dependent on the talents and efforts of highly skilled people; therefore, GSI's continued ability to compete effectively in its businesses, to manage its businesses effectively and to expand into new businesses and geographic areas depends on its ability to attract new talented and diverse employees and to retain and motivate existing employees. Factors that affect GSI's ability to attract and retain such employees include the level and composition of compensation and benefits, and a reputation as a successful business with a culture of fairly hiring, training and promoting qualified employees. As a significant portion of the compensation that GSI pays to its employees is paid in the form of year-end discretionary compensation, a significant portion of which is in the form of deferred equity-related awards, declines in the GS Group's profitability, or in the outlook for its future profitability, as well as regulatory limitations on compensation levels and terms, can negatively impact GSI's 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. GSI has experienced increased competition in hiring and retaining employees to address the demands of new regulatory requirements and GSI's technology initiatives. This is also the case in emerging and growth markets, where GSI is 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 GSI's operations are located that affect taxes on GSI's employees' income or the amount or composition of compensation, or that require GSI to disclose its competitors' compensation practices may also adversely affect GSI's ability to hire and retain qualified employees in those jurisdictions.

GSI's compensation practices are subject to review by, and the standards of, the PRA and the Financial Conduct Authority ("**FCA**"). As a large financial institution, GSI is subject to limitations on compensation practices (which may or may not affect the companies with which GSI competes for talent) by the PRA and the FCA and other regulators worldwide. These limitations have shaped GSI's compensation practices, which has in some cases adversely affected GSI's 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.

Market Developments and General Business Environment Risks

GSI's 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 GSI's 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 GSI's creditworthiness or that of GSI's 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 GSI's offices) that impair GSI's ability to manage GSI's businesses.

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

Climate change may cause extreme weather events that disrupt operations one or more of our or GS Group's primary locations, which may negatively affect GSI's ability to service and interact with GSI's clients, adversely affect the value of GSI's 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 GSI's clients and counterparties, which may decrease revenues from those clients and counterparties and increase the risk and other exposures to those clients and counterparties. In addition, climate change may impact the broader economy.

GSI is 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 GSI's business, results of operations and reputation. For example, GSI's reputation and client relationships may be damaged as a result of GSI's or GSI's 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 GSI's activities in response to considerations relating to climate change. If GS Group is unable to achieve its objectives relating to climate change or GS Group's response to climate change is perceived to be ineffective, insufficient or otherwise inappropriate, GSI's 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, employees and other stakeholders regarding climate change, may affect whether and on what terms and conditions GSI engages in certain activities or offer certain products. 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. 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, employees and other stakeholders regarding, climate change are continuing to evolve rapidly, which can make it difficult to assess the ultimate impact on GSI of climate change-related risks and uncertainties, but GSI expects that climate change-related risks will increase over time.

GSI's 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 GSI's costs and otherwise adversely affected GSI's 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 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 GSI's business and increase market uncertainty. The impact of these conflicts on GSI's 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, further 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 GSI's business could be significant. If international political instability and geopolitical tensions continue or increase in any region in which GSI does business, GSI's business and results of operations could be harmed.

GSI may be adversely affected by negative publicity.

The financial services industry generally and GSI's businesses in particular have been subject to negative publicity. GSI's reputation and businesses may be adversely affected by negative publicity or information regarding its business and personnel, whether or not accurate or true, that may be posted on social media or other internet forums or published by news organisations. Postings on these types of forums may also adversely impact risk positions of GSI's clients and other parties that owe it money, securities or other assets and increase the chance that they will not perform their obligation to the firm or reduce the revenues received from their use of GSI's 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.

Certain of GSI's businesses and its funding instruments may be adversely affected by changes in reference rates, currencies, indices, baskets or exchange-traded funds ("ETFs") to which products GSI offers or funding that GSI raises are linked.

Many of the products that GSI owns or that it offers, 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 recognised as an acceptable market benchmark or there are legal or regulatory constraints on linking a financial instrument to the underlier, GSI may experience adverse effects.

GSI's 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 GSI's 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 largescale 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 GSI's or GSI's clients' businesses, as well as GSI's 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 GSI's or GSI's 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 organisations or individuals, or actions taken by China in response to trade restrictions, could negatively impact GSI's or GSI's 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 GSI's business, financial condition, liquidity and results of operations, possibly materially.

GSI faces enhanced risks as Group Inc. operates in new locations, and the company transacts with a broader array of clients and counterparties.

GSI's businesses, have in the past, and may in the future, bring GSI into contact, directly or indirectly, with individuals and entities that are not within GSI's traditional client and counterparty base, expose GSI to new asset classes and new markets, and present GSI with integration challenges. For example, GSI continues to transact business and invest in new regions, including a wide range of emerging and growth markets, and GSI expects 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 GSI's businesses and increased volatility in financial markets generally.

New business initiatives expose GSI 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 GSI interacts 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.

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