

J. Aron & Company (Singapore) Pte.

Balance Sheet
as at 31 December 2022

INDEX

	Page No.
Independent Auditor's Report to the Directors of J. Aron & Company (Singapore) Pte.	1
Balance Sheet	3
Notes to Balance Sheet	4
Note 1. General information	4
Note 2. Summary of principal accounting policies	4
Note 3. Critical accounting estimates and judgements	8
Note 4. Financial risk management	9
Note 5. Cash and cash equivalents	17
Note 6. Derivative financial instruments	17
Note 7. Deferred income tax assets	18
Note 8. Employee incentive plans	18
Note 9. Property, plant and equipment	19
Note 10. Trade and other receivables	19
Note 11. Trade and other payables	19
Note 12. Subordinated liability	19
Note 13. Share capital	19
Note 14. Dividends	20
Note 15. Related party transactions	20



**INDEPENDENT AUDITOR'S REPORT
TO THE DIRECTORS OF J. ARON & COMPANY (SINGAPORE) PTE.**

Our opinion

We have audited the balance sheet of J. Aron & Company (Singapore) Pte. ("the Company") as at 31 December 2022 and notes to balance sheet, including a summary of principal accounting policies (together "the financial statement").

In our opinion, the accompanying financial statement presents fairly, in all material respects, the financial position of the Company as at 31 December 2022 in accordance with Financial Reporting Standards in Singapore ("FRSs") relevant to preparing such a financial statement.

Basis for Opinion

We conducted our audit in accordance with Singapore Standards on Auditing ("SSAs"). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statement* section of our report.

We are independent of the Company in accordance with the Accounting and Corporate Regulatory Authority Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities ("ACRA Code") together with the ethical requirements that are relevant to our audit of the financial statement in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code.

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

Emphasis of Matter – Basis of Accounting and Restriction on Distribution and Use

We draw attention to Note 2.1 to the financial statement, which describes the basis of accounting. The financial statement is prepared solely for the Company to meet the requirements under the Code of Federal Regulation ("CFR") Part 23 – Swap Dealers and Major Swap Participants Section 23.105(i)(2)(i) as required by the Commodity Futures Trading Commission ("CFTC"). As a result, the financial statement may not be suitable for another purpose.

This report, including our opinion, has been prepared solely for the Company in accordance with the agreement between the Company and us. Save for the disclosure of our report on the Company's website, neither this report nor its contents or any part thereof may be distributed to, discussed with or

otherwise disclosed to any third party without our prior written consent. The Company is responsible for all other information, other than our report, on the Company's website and our report does not cover this other information, and we do not express any form of assurance conclusion thereon. To the fullest extent permitted by law, we do not accept any liability or assume any responsibility to anyone else other than the Company for our work or this report. Any reliance placed on this report by any third party is entirely at its own risk.

The financial statement does not comprise a full set of financial statements prepared in accordance with FRSs. Our opinion is not modified in respect of this matter.

Other Matter

The Company has prepared a separate set of financial statements for the year ended 31 December 2022 in accordance with FRSs, on which we issued a separate auditor's report to the member of the Company dated 24 February 2023.

Responsibilities of Management and Directors for the Financial Statement

Management is responsible for the preparation and fair presentation of the financial statement in accordance with the FRSs relevant to preparing such a financial statement, and for such internal control as management determines is necessary to enable the preparation of a financial statement that is free from material misstatement, whether due to fraud or error.

In preparing the financial statement, management is 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 management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

The directors' responsibilities include overseeing the Company's financial reporting process.

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INDEPENDENT AUDITOR'S REPORT
TO THE DIRECTORS OF J. ARON & COMPANY (SINGAPORE) PTE. (continued)

Auditor's Responsibilities for the Audit of the Financial Statement

Our objectives are to obtain reasonable assurance about whether the financial statement as a whole is free from material misstatement, whether due to fraud or error, and to issue an auditor's 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 SSAs 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 this financial statement. As part of an audit in accordance with SSAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statement, 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, if any, 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 statement 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 Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statement, including the disclosures, and whether the financial statement represents the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the directors 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.

PricewaterhouseCoopers LLP
Public Accountants and Chartered Accountants
Singapore, 24 February 2023

Balance Sheet

<i>\$ in thousands</i>	Note	As at	
		December 2022	December 2021
Assets			
Current assets			
Cash and cash equivalents	5	\$ 117,564	\$ 110,226
Derivative financial instruments	6	4,227,793	4,089,502
Trade and other receivables	10	2,312,829	2,381,297
Non-current assets			
Trade and other receivables	10	650,022	650,067
Deferred income tax assets	7	1,281	769
Property, plant and equipment	9	52,191	40,777
Total assets		\$ 7,361,680	\$ 7,272,638
Liabilities			
Current liabilities			
Derivative financial instruments	6	\$ 4,834,779	\$ 4,701,341
Trade and other payables	11	514,284	614,925
Current income tax liabilities		19,960	14,239
Non-current liabilities			
Trade and other payables	11	28,623	26,842
Subordinated liability	12	500,000	500,000
Total liabilities		\$ 5,897,646	\$ 5,857,347
Equity			
Share capital	13	\$ 755,141	\$ 755,141
Retained profits		707,588	658,845
Other reserves		1,305	1,305
Total equity		\$ 1,464,034	\$ 1,415,291
Total equity and liabilities		\$ 7,361,680	\$ 7,272,638

The accompanying notes are an integral part of this balance sheet

Notes to Balance Sheet

Note 1.

General information

J. Aron & Company (Singapore) Pte. (the “Company”) is a private company incorporated and domiciled in Singapore. The address of its registered office is 1 Raffles Link, #07-01 South Lobby, Singapore 039393.

The Company is a wholly owned subsidiary of Goldman Sachs Holdings (Singapore) Pte. Ltd.. The ultimate parent company is The Goldman Sachs Group, Inc., which is incorporated in the State of Delaware, U.S.A. and listed on the New York Stock Exchange.

The principal activity of the Company is to deal in physical commodities and related derivative financial instruments including forwards, swaps, options and futures.

Replacement of Interbank Offered Rates (“IBORs”), including London Interbank Offered Rate (“LIBOR”)

Central banks and regulators in a number of major jurisdictions have convened working groups to find, and implement the transition to, suitable replacements for IBORs. The administrator of LIBOR has proposed to extend the publication of the most commonly used U.S. Dollar LIBOR settings to 30 June 2023. The U.S. federal banking agencies have issued guidance strongly encouraging banking organisations to cease using the U.S. Dollar LIBOR as a reference rate in new contracts as soon as practicable and in any event by 31 December 2021.

The Goldman Sachs Group, Inc. and its consolidated subsidiaries (collectively, “GS Group”), including the Company, is facilitating an orderly transition from IBORs to alternative risk-free reference rates.

Note 2.

Summary of principal accounting policies

The principal accounting policies adopted in the preparation of this balance sheet are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

Note 2.1

Basis of preparation

The balance sheet is prepared in accordance with all applicable Singapore Financial Reporting Standards (“FRS”). It has been prepared on the historical cost basis, as modified by the revaluation of certain financial assets or liabilities (including derivative instruments) at fair value through profit or loss, which are carried at fair value.

The balance sheet does not comprise a full set of financial statements prepared in accordance with FRS. The balance sheet is prepared solely for the Company to meet the

requirements under the Code of Federal Regulation (“CFR”) Part 23 – Swap Dealers and Major Swap Participants Section 23.105(i)(2)(i) as required by the Commodity Futures Trading Commission (“CFTC”).

The preparation of balance sheet in conformity with FRS requires the use of certain critical accounting estimates. It also requires management to exercise its judgment in applying the Company’s accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the balance sheet, are disclosed in Note 3.

Note 2.1.1

Changes in accounting policy and disclosures

(a) New and amended standards adopted by the Company

The amendments to FRS and new Interpretations of FRS (“INT FRS”) that are effective for the year ended 31 December 2022 have had no significant financial impact on the balance sheet.

(b) New standards and interpretation not yet adopted

Certain new accounting standards and interpretations have been published that are not mandatory for 31 December 2022 reporting period and have not been early applied in preparing this balance sheet.

These standards are not expected to have a material impact on the Company.

Note 2.2

Currency translation

(a) Functional and presentation currency

Items included in the balance sheet is measured using the currency of the primary economic environment in which the entity operates (“the functional currency”). The balance sheet is presented in US dollars (“US\$”), which is the Company’s functional currency.

(b) Transactions and balances

Transactions in currencies other than US dollars are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or valuation where items are re-measured.

Note 2.3

Taxation

Taxation for the period comprises current and deferred tax.

Notes to Balance Sheet

Current income 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 generate taxable income. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. It establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the balance sheet. Deferred income tax is determined using tax rates and laws that have been enacted or substantially enacted by the balance sheet date and are expected to apply when the related deferred income tax asset is realised or the deferred income tax liability is settled.

Deferred income tax assets are recognised if it is probable that future taxable amounts will be available to utilise those temporary differences and losses.

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred income tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

Note 2.4

Employee benefits

(a) Compensation

The Company recognises a liability and an expense for bonuses payable to employees as part of their compensation. A provision is also made for the estimated liability for annual leave earned by employees but untaken at the balance sheet date.

(b) Employee incentive plans

The Goldman Sachs Group, Inc. issues awards in the form of restricted stock units (“RSUs”) to the Company’s employees for services rendered to the Company. The cost of employee services received in exchange for a share-based award is generally measured based on the grant-date fair value of the award. Share-based awards that do not require future service (i.e., vested awards, including awards granted to retirement-eligible employees) are expensed immediately. Share-based awards that require future service are amortised over the relevant service period. Forfeitures are recorded when they occur.

The Goldman Sachs Group, Inc. settles share awards by the delivery of its ordinary shares to the Company’s employees.

The Company has entered into a chargeback agreement under which it is committed to pay to The Goldman Sachs Group, Inc. the market value of those shares at the time of delivery. Further details of the share-based award plans are set out in Note 8.

(c) Defined contribution plans

Defined contribution plans are post-employment benefit plans under which the Company pays fixed contributions such as the Central Provident Fund on a mandatory, contractual or voluntary basis. The Company has no further payment obligations once the contributions have been paid.

Note 2.5

Cash and cash equivalents

Cash and cash equivalents include deposits held at call with banks and other short-term highly liquid investments with original maturities of three months or less.

Note 2.6

Financial instruments

(a) Recognition and derecognition

The Company’s trading assets and trading liabilities are recognised and derecognised using trade date accounting.

Other financial assets and financial liabilities 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 either a) substantially all the risk and rewards of ownership, or b) neither transfers nor retains substantially all the risk and rewards of ownership and the Company does not retain control of that financial asset. Financial liabilities are derecognised only when they are extinguished (i.e., when the obligation specified in the contract is discharged or cancelled or expires).

(b) Classification and measurement - Financial assets

The Company classifies its financial assets into the below categories based on the Company’s business model for managing the asset and, where required, subsequent analysis of cash flow characteristics on individual financial assets.

The business model reflects how the Company manages particular groups of assets in order to generate future cash flows. Where the business model is to hold the assets to collect contractual cash flows, the Company subsequently assesses whether the financial asset’s cash flows represent solely payments of principal and interest. The Company considers whether the cash flows represent basic lending

Notes to Balance Sheet

arrangements. Where contractual terms introduce exposure to risk or volatility inconsistent with a basic lending arrangement, the financial asset is classified and measured at fair value through profit or loss. Financial assets with embedded derivative features are considered in their entirety in the above described assessment.

(i) Financial assets classified 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, and that are not designated at fair value, are measured at amortised cost. Such financial assets are initially recognised at fair value plus transaction costs and subsequently measured 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 of 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 amount 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. The calculation includes all fees and points paid or received that are an integral part of the effective interest rate, transaction costs, and all other premiums or discounts.

(ii) Financial assets classified at fair value through profit or loss

Financial assets that do not meet the criteria for amortised cost are measured at fair value through profit or loss. Such financial assets are measured in the balance sheet at fair value and subsequent gains or losses are recognised in the statement of comprehensive income.

(iii) Financial assets subsequent measurement - Expected credit loss

FRS 109 Financial Instruments ("FRS 109") outlines a three-stage model for impairment based on changes in credit quality since initial recognition of financial assets. The key elements of this approach are outlined below:

Stage 1 Classification for financial instruments that are not credit-impaired on initial recognition and remain not credit-impaired as a result of on-going credit risk monitoring. Expected credit loss ("ECL") is measured at an amount equal to the portion of lifetime expected credit losses that result from default events possible within the next 12 months.

Stage 2 Classification for financial instruments where there has been a significant increase in credit risk since initiation,

however not yet deemed to be credit-impaired. ECL is measured based on expected credit losses on a lifetime basis.

Stage 3 Classification for financial instruments that are in default, or are defined as credit-impaired. ECL is measured based on expected credit losses on a lifetime basis.

ECL is measured on either a 12-month or lifetime basis depending on whether a significant increase in credit risk has occurred since initial recognition or whether an asset is considered to be credit-impaired.

Determination of the relevant staging for each financial instrument is dependent on the definition of 'significant increase in credit risk' (stage 1 to stage 2) and the definition of 'credit-impaired' (stage 2 to stage 3).

The Company considers a financial instrument to have experienced a significant increase in credit risk when certain quantitative or qualitative conditions are met. Absolute probability of default ("PD") thresholds have been set for investment grade financial assets, and relative PD thresholds have been set for non-investment grade financial assets. Qualitative review is performed by Credit Risk.

As risk measures become more certain or acute, the financial instrument typically becomes classified as credit-impaired. In addition, most financial instruments that are in default are also credit-impaired. The Company defines a financial instrument as in default for accounting purposes when the respective instrument meets the definition of default as set out by Credit Risk. A default is considered to have occurred with regard to a particular obligor when either; a) 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 b) the obligor has defaulted on a payment and/or is past due more than 90 days.

PD represents the likelihood of a borrower defaulting on its financial obligation. Exposure at default ("EAD") is the amount the Company expects to be owed at the time the financial obligation defaults. Loss given default ("LGD") is the Company's expectation of the extent of loss on the defaulted exposure, and takes into consideration amongst other things, collateral on the financial instrument. The Company uses internal credit risk ratings that reflect the assessment of PDs of individual counterparties. The rating methods are subject to an annual validation and recalibration process.

The ECL is determined by projecting the PD, LGD and EAD for each individual exposure. To calculate ECL, 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.

Notes to Balance Sheet

The assessment of staging and the calculation of ECL both incorporate forward-looking information. Credit Risk have identified key economic variables impacting credit risk and expected credit losses to incorporate into the forward-looking information used.

The economic variables have been forecasted using internally generated projections to provide the estimated view of the economy over the next nine quarters. After nine quarters a mean reversion approach has been used, which means that economic variables tend to either a long run average rate or a long run growth rate.

The Company uses multiple macroeconomic scenarios within the ECL calculation. The weightings for the scenarios used are subject to ongoing internal review and approval.

For stage 3 credit-impaired loans, ECL estimates are derived from internal forecasts of value, and independent recovery valuations if available. The estimates reflect actual and anticipated individual company conditions plus anticipated economic conditions.

There have been no significant changes in estimation techniques or significant assumptions made during the year ended 31 December 2022.

(c) Classification and measurement - Financial liabilities

(i) Financial liabilities classified at amortised cost

Financial liabilities measured at amortised cost are initially recognised at fair value net of transactions costs and subsequently measured at amortised cost using the effective interest method.

(ii) Financial liabilities classified as held for trading

Financial liabilities classified as held for trading are initially recognised at fair value with transaction costs expensed in profit or loss. Such financial instruments are carried in the balance sheet at fair value and all subsequent gains or losses are recognised in the statement of comprehensive income.

(iii) Financial liabilities designated at fair value through profit or loss

Financial liabilities designated at fair value through profit or loss are initially recognised at fair value with transaction costs expensed in profit or loss. Such financial liabilities are measured in the balance sheet at fair value, with changes in fair value attributable to own credit spreads 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 the statement of comprehensive income. Amounts recognised in other comprehensive income due to own credit spreads are not subsequently recycled into

the statement of comprehensive income, even in instances where the liability is derecognised.

(d) Determination of fair value

The fair value of a financial instrument is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Gains and losses arising from changes in fair value are recognised in the statement of comprehensive income.

(i) Derivative instruments

The Company's derivative instruments consist of exchange-traded and over-the-counter ("OTC") derivatives. Exchange-traded derivatives that are actively traded are valued at their quoted market prices. Exchange-traded derivatives that are not actively traded are valued using models that calibrate to market-clearing levels of OTC derivatives.

OTC derivatives are valued using market transactions and other market evidence, including market-based inputs to models, calibration to market-clearing transactions, broker or dealer quotations or other alternative pricing sources with reasonable levels of price transparency. Consideration is given to the nature of the quotations (e.g. indicative or executable) and the relationship of recent market activity to the prices provided from alternative pricing sources.

Where models are used, the selection of a particular model to value an OTC 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. The Company generally uses similar models to value similar instruments. Valuation models require a variety of inputs, such as contractual terms, market prices, yield curves, discount rates, credit curves, measures of volatility, prepayment rates, loss severity rates and correlations of such inputs. For OTC derivatives that trade in liquid markets, model selection does not involve significant management judgment because outputs of models can be calibrated to market clearing levels.

Certain OTC derivatives are valued using models which utilise inputs that can be observed in the market, as well as unobservable inputs. Unobservable inputs typically include certain correlations as well as credit spreads, equity volatilities, commodity prices and commodity volatilities that are long-dated or derived from trading activity in inactive or less liquid markets. Subsequent to the initial valuation of such derivatives, the Company updates the observable inputs to reflect observable market changes. Unobservable 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

Notes to Balance Sheet

different valuation model could produce a materially different estimate of fair value.

(e) Offsetting financial assets and liabilities

Financial assets and liabilities are offset and the net amount reported in the balance sheet when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Company or the counterparty.

Note 2.7

Trade and other receivables

Trade and other receivables are recognised initially at fair value and subsequently measured at amortised cost using the effective interest method, less allowance for impairment. If collection of trade and other receivables is expected in one year or less (or in the normal operating cycle of the business if longer), they are classified as current assets. If not, they are presented as non-current assets.

Note 2.8

Property, plant and equipment

Property, plant and equipment are stated at historical cost less depreciation. Historical cost includes expenditure that is directly attributable to the acquisition of the item.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Company and the cost of the item can be measured reliably.

Depreciation of property, plant and equipment is calculated on a straight-line basis to allocate their depreciation amounts, over their estimated useful lives. The estimated useful lives are as follows:

Computers and office equipment: 3 to 7 years

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at each balance sheet date.

An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

Note 2.9

Trade and other payables

Trade and other payables are recognised initially at fair value

and subsequently measured at amortised cost using the effective interest method.

Trade and other payables are classified as current liabilities if payment is due within one year or less (or in the normal operating cycle of the business if longer). If not, they are presented as non-current liabilities.

Note 2.10

Subordinated liability

Subordinated liability comprises of subordinated loans. Subordinated loans are recognised initially at fair value.

Note 2.11

Dividends

Interim dividends are recorded during the financial period in which they are declared payable. Final dividends are recorded during the financial period in which the dividends are approved by the member.

Note 2.12

Comparatives

Where necessary, comparative figures have been reclassified to conform with the current year's presentation.

Note 3.

Critical accounting estimates and judgements

Estimates and judgments are continually evaluated and are based on historical experience and other factors, including expectations of future events that may have a financial impact on the Company and are believed to be reasonable under the circumstances.

The Company makes estimates and assumptions concerning the future. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are as follows:

Note 3.1

Income taxes

Judgment is required in determining the provision for income taxes. There are many transactions and calculations for which the ultimate tax determination is uncertain. The Company recognises liabilities for anticipated tax based on estimates of whether additional taxes will be due. Where the final tax outcome is different from the amounts that were initially recorded, such differences will impact the income tax and

Notes to Balance Sheet

deferred tax provisions in the period in which such determination is made.

Note 3.2

Fair value of derivatives and other financial instruments

The fair value of financial instruments that are not traded in an active market (for example, OTC derivatives) is determined by using valuation techniques. The Company uses its judgment to select a variety of methods and make assumptions that are mainly based on market conditions existing at the balance sheet date.

Note 3.3

Allowance for impairment

The allowance for impairment is determined by an ECL model developed to meet the impairment requirements of FRS 109. The measurement of ECL for financial assets classified at amortised cost requires the use of a complex model and significant assumptions about future economic conditions and credit behaviour. Significant judgments are also required in applying the accounting requirements for measuring ECL including determining criteria for significant increases in credit risk and establishing the number and weighting of forward looking scenarios. Further information about the judgments and estimates made by the Company is set out in Note 4.2.

Note 4.

Financial risk management

Normal trading activities expose the Company to market, credit, and liquidity risk. These risks, described below, are managed in accordance with established risk management policies and procedures.

GS Group monitors market, credit and liquidity risk on a consistent basis firmwide. Consequently, the Company, as a part of the global group, adheres to global risk management policies and procedures.

The Company 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, legal reporting systems, internal controls, management review processes and other mechanisms. In addition, a number of global, regional and entity committees are responsible for monitoring risk exposures and for general oversight of the Company's risk management process ("Risk Committees"). These committees meet regularly and consist of senior members of both the revenue-producing units and departments that are independent of the revenue-producing

units. In addition to these committees, functions that are independent of the revenue-producing units, such as Compliance, Conflicts Resolution, Controllers, Legal, Risk, Tax and Internal Audit, perform risk management functions, which include monitoring, analysing and evaluating risk.

Note 4.1

Market risk

Market risk is the risk of an adverse impact to our 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;
- Currency rate risk: results from exposures to changes in spot prices, forward prices and volatilities of currency rates; and
- Commodity price risk: results from exposures to changes in spot prices, forward prices and volatilities of commodities, such as crude oil, petroleum products, natural gas, electricity, and precious and base metals.

Market Risk, which is independent of the revenue-producing units and reports to the Chief Risk Officer of GS Group, has primary responsibility for assessing, monitoring and managing 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.

The Company's process for managing market risk includes:

- 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 Company level.

Notes to Balance Sheet

Market Risk 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 entity levels.

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 Value-at-Risk (“VaR”) and other stress tests. The risk reports detail key risks, drivers and changes for each desk and business, and are distributed daily to senior management of both the revenue-producing units and independent risk oversight and control functions.

The Company is exposed to market risk on its financial assets and liabilities at fair value. In addition, the Company is indirectly exposed to market risk in respect of trading and investing positions held by affiliated companies to which the Company supplies services. The Company receives revenue transfers related to the financial performance of these positions, as defined by revenue transfer arrangements.

(a) 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 interest rates, 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 GS Group.

There are inherent limitations to VaR and therefore a variety of risk measures are used in the market risk management process. Inherent limitations to VaR include:

- VaR does not estimate potential losses over longer time horizons where moves may be extreme;
- VaR does not take account of the relative liquidity of different risk positions; and
- Previous moves in market risk factors may not produce accurate predictions of all future market moves.

To comprehensively capture 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 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 credit spreads on financial liabilities for which the fair value option was selected.

The VaR model is applied consistently across GS Group, including the Company. 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 GS Group level and for each of GS Group’s businesses.

(b) Stress testing

Stress testing is a method of determining the effect of various hypothetical stress scenarios. GS Group uses stress tests to examine risks of specific portfolios, as well as the potential impact of significant risk exposures. 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 sensitivity analysis, scenario analysis and stress tests. The results of the various stress tests are analysed together for risk management purposes.

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).

(c) Limits

Risk limits are used at various levels to manage the size of the Company’s market exposures. Limits are set for the Company

Notes to Balance Sheet

based on VaR and on a range of stress tests relevant to the Company's exposures.

The Risk Committees 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 and/or a temporary or permanent increase to the risk limit, if warranted.

(d) Metrics and sensitivity measures

VaR is analysed at the Company level and a variety of more detailed levels, including by risk category and business. The effects of currency exchange rates on trading asset volatilities have been reflected in VaR.

Total VaR for financial instruments of the Company as at 31 December 2022 was US\$6.32 million (2021: US\$8.69 million).

(e) Currency risk

The Company does not have significant unhedged non-functional currency assets and liabilities.

(f) Interest rate risk

The Company is exposed to cash flow interest rate risk primarily on its bank deposits, cash collateral received and delivered and loans receivables and payables. Based on the values of these assets and liabilities as at 31 December 2022, a 50 basis point (2021: 50 basis point) change in market interest rates would result in a US\$8.78 million (2021: US\$8.71 million) change in annual net interest expense.

Note 4.2

Credit risk

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). 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) and receivables from brokers, dealers, clearing organisations, customers and counterparties.

Credit Risk, which is independent of the revenue-producing units and reports to the Chief Risk Officer of GS Group, has primary responsibility for assessing, monitoring and managing

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 Risk Governance Committee of GS Group.

The process for managing credit risk includes:

- 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.

As part of the risk assessment process, Credit Risk performs credit analyses, which incorporate initial and ongoing evaluations of the capacity and willingness of a counterparty to meet its financial obligations. For substantially all of the Company's credit exposures, the core of the process is an annual counterparty credit evaluation or more frequently if deemed necessary as a results of events or changes in circumstances. Credit Risk determines an internal credit rating for the counterparty by considering the results of the credit evaluations and assumptions with respect to the nature of and outlook for the counterparty's industry and the economic environment. The internal credit rating does not take into consideration collateral received or other credit support arrangements. Senior personnel, with expertise in specific industries, inspect and approve credit reviews and internal credit ratings.

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

Credit concentration risk represents the risk of increased financial loss through significant credit exposures to the same counterparty or group of related counterparties that failed to perform under their contractual obligations. The Company's main credit exposures are to external counterparties with pre-approved relationships, immediate parent company and affiliated companies.

Notes to Balance Sheet

(a) Risk measures and limits

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.

Credit limits are used at various levels to manage the size and nature of the Company's credit exposures. Limits for industries and countries are based on the risk appetite and designed to allow for regular monitoring, review, escalation and management of credit risk concentrations.

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.

(b) Stress tests

Regular stress tests are used 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. Unlike potential exposure, which is calculated within a specified confidence level, stress testing generally does not assume a probability of these events occurring.

To supplement these regular stress tests, as described above, the Company also conducts tailored stress tests on an ad hoc basis in response to specific market events that are deemed significant. The Company also utilises stress tests to estimate the indirect impact of certain hypothetical events on its country exposures. The estimated losses produced by the stress tests are reviewed in order to understand their magnitude, highlight potential loss concentrations, and assess and mitigate its exposures where necessary.

The Company's potential credit exposure and stress testing models, and any changes to such models or assumptions, are independently reviewed, validated and approved by Model Risk.

(c) 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.

(d) Credit exposure

Cash and Cash Equivalents. Cash and cash equivalents include both interest-bearing and non-interest-bearing deposits. To mitigate the risk of credit loss, the Company places substantially all of its deposits with highly-rated banks.

OTC Derivatives. Derivative instruments are reported at fair value on a gross-by-counterparty basis in the Company's balance sheet, 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.

Other Credit Exposures. The Company is exposed to credit risk from its receivables from brokers, dealers and clearing organisations and customers and counterparties. These primarily comprise receivables related to cash collateral paid to counterparties and clearing organisations in respect of derivative financial instruments liabilities.

(e) Exposure to credit risk by class

(i) Financial instruments subject to impairment

The Company assesses on a forward-looking basis the ECL associated with financial assets measured at amortised cost. The Company's impairment model is based on changes in credit quality since initial recognition of the relevant assets and incorporates three stages. See Note 2.6 for further information about the Company's impairment methodology.

Notes to Balance Sheet

The following table discloses the carrying values of financial instruments subject to impairment recorded in the balance sheet:

<i>\$ in thousands</i>	As at	
	December 2022	December 2021
Cash and cash equivalents	\$ 117,564	\$ 110,226
Trade and other receivables	2,962,851	3,031,360
Total	\$ 3,080,415	\$ 3,141,586

The following table contains an analysis of the credit risk exposure of financial instruments subject to impairment and is grouped by credit rating equivalent (internally determined public rating agency equivalents). The gross carrying amount of financial assets below also represents the Company's maximum exposure to credit risk on these assets.

<i>\$ in thousands</i>	Stage 1	
	As at	
	December 2022	December 2021
Credit rating equivalent		
AA	\$ 3,629	\$ 2,509
A	3,034,114	3,084,688
BBB	35,175	47,297
BB	74	81
B	3,552	5,272
Unrated	3,871	1,739
Total	\$ 3,080,415	\$ 3,141,586

(ii) Financial instruments not subject to impairment

The following table discloses the carrying values of financial assets recorded in the balance sheet and represents the Company's maximum exposure to credit risk without taking into account of the value of collateral obtained or any other credit enhancements:

<i>\$ in thousands</i>	As at	
	December 2022	December 2021
Derivative financial instruments	\$ 4,227,793	\$ 4,089,502

The following table shows the carrying value of financial assets grouped by credit rating equivalent (internally determined public rating agency equivalents).

<i>\$ in thousands</i>	As at	
	December 2022	December 2021
Credit rating equivalent		
AA	\$ 8,498	\$ 39,662
A	3,845,599	3,414,133
BBB	116,199	196,313
BB	200,356	173,912
B	36,756	113,221
CCC	-	979
Unrated	20,385	151,282
Total	\$ 4,227,793	\$ 4,089,502

As at year end, financial assets past due or impaired were not material.

(f) Collateralised transactions

As at 31 December 2022, the Company received and placed cash collateral of US\$323.72 million (2021: US\$502.47 million) and US\$1.31 billion (2021: US\$1.40 billion) in respect of the financial instruments, respectively.

Notes to Balance Sheet**Note 4.3****Liquidity risk**

Liquidity risk is the risk that the Company will be unable to fund itself or meet its liquidity needs in the event of a firm-specific, broader industry or market liquidity stress events. Accordingly, the Company follows GS Group's comprehensive and conservative set of liquidity and funding policies. GS Group'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 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.

GS Group manages liquidity risk according to three principles: (i) hold sufficient excess liquidity in the form of Global Core Liquid Assets ("GCLA") to cover outflows during a stressed period, (ii) maintain appropriate Asset-Liability Management and (iii) maintain a viable Contingency Funding Plan.

Global Core Liquid Assets. GCLA is liquidity that GS Group maintains to meet a broad range of potential cash outflows and collateral needs in a stressed environment.

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

Contingency Funding Plan. GS Group maintains a contingency funding plan 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 GS Group's potential responses if assessments indicate that GS Group has entered a liquidity crisis, which includes pre-funding for what GS Group 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.

The following table details the undiscounted cash flows of the Company's financial liabilities by remaining contractual maturity, including interest that will accrue, except for derivatives or where the Company is obligated to repay the liability before its maturity. Derivative financial instruments are presented at their fair value and disclosed as trading within the "Less than three months" category. The Company considers this more accurately represents the liquidity risk arising from derivatives and is consistent with how those risks are managed.

<i>\$ in thousands</i>	Less than three months	More than three months but less than one year	More than one year but less than five years	Total
As at December 2022				
Current liabilities				
Derivative financial instruments	\$ 4,834,779	\$ –	\$ –	\$ 4,834,779
Trade and other payables	505,076	582	–	505,658
Non-current liabilities				
Trade and other payables	–	–	28,623	28,623
Subordinated liability	8,188	25,017	524,926	558,131
Total	\$ 5,348,043	\$ 25,599	\$ 553,549	\$ 5,927,191
As at December 2021				
Current liabilities				
Derivative financial instruments	\$ 4,701,341	\$ –	\$ –	\$ 4,701,341
Trade and other payables	611,617	992	–	612,609
Non-current liabilities				
Trade and other payables	–	–	26,842	26,842
Subordinated liability	2,813	8,594	519,969	531,376
Total	\$ 5,315,771	\$ 9,586	\$ 546,811	\$ 5,872,168

Notes to Balance Sheet**Note 4.4****Offsetting financial assets and financial liabilities****(a) Financial assets**

The following table shows the Company's financial assets, and those that may be subject to offsetting, enforceable master netting arrangements and similar agreements:

<i>\$ in thousands</i>	Gross exposure	Amounts offset in balance sheet	Net amount presented in balance sheet	Amounts not offset in balance sheet		Net amount
				Financial instruments	Cash collateral	
As at December 2022						
Cash and cash equivalents	\$ 117,564	\$ –	\$ 117,564	\$ –	\$ –	\$ 117,564
Derivative financial instruments	4,227,793	–	4,227,793	(3,541,849)	(301,177)	384,767
Trade and other receivables	2,975,061	(12,210)	2,962,851	–	(1,159,526)	1,803,325
Total financial assets	\$ 7,320,418	\$ (12,210)	\$ 7,308,208	\$ (3,541,849)	\$ (1,460,703)	\$ 2,305,656
As at December 2021						
Cash and cash equivalents	\$ 110,226	\$ –	\$ 110,226	\$ –	\$ –	\$ 110,226
Derivative financial instruments	4,089,502	–	4,089,502	(3,246,609)	(368,596)	474,297
Trade and other receivables	3,035,577	(4,217)	3,031,360	–	(1,199,828)	1,831,532
Total financial assets	\$ 7,235,305	\$ (4,217)	\$ 7,231,088	\$ (3,246,609)	\$ (1,568,424)	\$ 2,416,055

(b) Financial liabilities

The following table shows the Company's financial liabilities, and those that may be subject to offsetting, enforceable master netting arrangements and similar agreements:

<i>\$ in thousands</i>	Gross exposure	Amounts offset in balance sheet	Net amount presented in balance sheet	Amounts not offset in balance sheet		Net amount
				Financial instruments	Cash collateral	
As at December 2022						
Derivative financial instruments	\$ 4,834,779	\$ –	\$ 4,834,779	\$ (3,541,849)	\$ (1,159,206)	\$ 133,724
Trade and other payables	546,491	(12,210)	534,281	–	(301,497)	232,784
Subordinated liability	500,000	–	500,000	–	–	500,000
Total financial liabilities	\$ 5,881,270	\$ (12,210)	\$ 5,869,060	\$ (3,541,849)	\$ (1,460,703)	\$ 866,508
As at December 2021						
Derivative financial instruments	\$ 4,701,341	\$ –	\$ 4,701,341	\$ (3,246,609)	\$ (1,199,333)	\$ 255,399
Trade and other payables	643,668	(4,217)	639,451	–	(369,091)	270,360
Subordinated liability	500,000	–	500,000	–	–	500,000
Total financial liabilities	\$ 5,845,009	\$ (4,217)	\$ 5,840,792	\$ (3,246,609)	\$ (1,568,424)	\$ 1,025,759

For the financial assets and liabilities subject to enforceable master netting arrangements or similar arrangements above, each agreement between the Company and the counterparty allows for net settlement of the relevant financial assets and liabilities when both intend to settle on a net basis.

Notes to Balance Sheet**Note 4.5****Fair value estimation**

The tables below show financial instruments carried at fair value, by valuation method. The different levels have been defined 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 Company's assets and liabilities that are measured at fair value are:

<i>\$ in thousands</i>	Level 2	Level 3	Total
As at December 2022			
Financial assets at fair value			
Derivative financial instruments	\$ 4,223,363	\$ 4,430	\$ 4,227,793
Financial liabilities at fair value			
Derivative financial instruments	\$ 4,829,913	\$ 4,866	\$ 4,834,779
As at December 2021			
Financial assets at fair value			
Derivative financial instruments	\$ 4,076,938	\$ 12,564	\$ 4,089,502
Financial liabilities at fair value			
Derivative financial instruments	\$ 4,683,709	\$ 17,632	\$ 4,701,341

The fair value of financial instruments traded in active markets is based on quoted market prices at the balance sheet date. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. The quoted market price used for financial assets held by the Company is the current bid price. These instruments are included in level 1.

The fair value of financial instruments that are not traded in an active market (for example, OTC derivatives) is determined by using valuation techniques. These valuation techniques maximise the use of observable market data where it is available and rely as little as possible on entity specific estimates. If all significant inputs required to fair value an instrument are observable, the instrument is included in level 2.

There were no level 1 instruments held as at 31 December 2022 and 31 December 2021.

If one or more of the significant inputs is not based on observable market data, the instrument is included in level 3.

The following table presents the changes in the Company's level 3 instruments:

<i>\$ in thousands</i>	Derivative financial instruments - Net	
Year Ended December 2022		
At the beginning of the year	\$	(5,068)
Gains recognised in statement of comprehensive income		439
Purchases, issuances and settlements		(437)
Transfers into level 3, net		4,630
At the end of the year	\$	(436)
Year Ended December 2021		
At the beginning of the year	\$	7,258
Gains recognised in statement of comprehensive income		2,269
Purchases, issuances and settlements		(15,623)
Transfers into level 3, net		1,028
At the end of the year	\$	(5,068)

The Company's level 2 and level 3 financial instruments are valued using various derivative pricing models (e.g., discounted cash flow models, correlation models and models that incorporate option pricing methodologies, such as Monte Carlo simulations). 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, prepayment rates, loss severity rates and correlations of such inputs. Significant inputs to the valuations of level 2 derivatives can be verified to market transactions, broker or dealer quotations or other alternative pricing sources with reasonable levels of price transparency. Consideration is given to the nature of the quotations (e.g., indicative or executable) and the relationship of recent market activity to the prices provided from alternative pricing sources.

Level 3 financial instruments are valued using models which utilise observable level 1 and/or level 2 inputs, as well as unobservable level 3 inputs.

For level 3 commodity financial instruments, significant unobservable inputs include volatilities for options with strike prices that differ significantly from current market prices and prices or spreads for certain products for which the product quality or physical location of the commodity is not aligned with benchmark indices.

Notes to Balance Sheet

The tables below present the ranges of significant unobservable inputs used to value the Company's level 3 financial instruments as well as the averages and medians of these inputs. The ranges represent the significant unobservable inputs that were used in the valuation of each type of financial instruments. 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 financial instrument. For example, the highest volatility presented in the tables below is appropriate for valuing a specific commodity financial instrument but may not be appropriate for valuing any other commodity financial instruments. Accordingly, the ranges of inputs presented below do not represent uncertainty in, or possible ranges of, fair value measurements of the Company's level 3 financial instruments.

<i>\$ in thousands, except inputs</i> Level 3 product type	Fair value of level 3 net financial assets / (liabilities)	Significant unobservable inputs	Range of significant unobservable inputs (Average/Median)
2022			
Commodities	\$ (436)	Commodities Volatility	47% to 66% (56.4% / 58.1%)
2021			
Commodities	\$ (5,068)	Commodities Volatility	41% to 73% (54.1% / 50.8%)

The following provides a description of the directional sensitivity of the Company's level 3 fair value measurements to changes in significant unobservable inputs, in isolation. Due to the distinctive nature of each of the Company's level 3 financial instruments, the interrelationship of inputs is not necessarily uniform within each product type.

Volatility: In general, for purchased options an increase in volatility results in a higher fair value measurement.

The fair value of financial instruments 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. The potential impact as at 31 December 2022 of using reasonable possible alternative assumptions for the valuations, including significant unobservable inputs, has been quantified as approximately US\$0.03 million (2021: US\$0.03 million) for favourable changes, and approximately US\$(0.03) million (2021: US\$(0.03) million) for unfavourable changes. In determining reasonably possible alternative 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 current value as compared to the range of available market information.

The carrying value of other financial assets and liabilities are a reasonable approximation of their fair values.

Note 4.6 Capital management

The Company's capital is considered to comprise total equity and subordinated liability on the balance sheet. The primary objectives in managing capital are to safeguard the ability of the Company to continue as a going concern, and to meet the capital requirements of the CFTC. The Company has met CFTC's capital requirements since the final compliance date of 6 October 2021 to 31 December 2022.

To adjust capital, the Company may pay dividends, return capital to its member, drawdown or repay subordinated loans or call additional capital contributions. No changes were made in the objectives, policies or processes for managing capital during the year ended 31 December 2022.

Note 5 Cash and cash equivalents

<i>\$ in thousands</i>	As at	
	December 2022	December 2021
Cash at banks	\$ 117,564	\$ 110,226

Note 6 Derivative financial instruments

Derivative financial instruments comprised:

<i>\$ in thousands</i>	As at December 2022	
	Assets	Liabilities
Forward settlement contracts	\$ 95,105	\$ 102,411
Option contracts	74,311	137,915
Swap agreements	4,058,377	4,594,453
Total	\$ 4,227,793	\$ 4,834,779

<i>\$ in thousands</i>	As at December 2021	
	Assets	Liabilities
Forward settlement contracts	\$ 109,317	\$ 93,055
Option contracts	324,049	303,580
Swap agreements	3,656,136	4,304,706
Total	\$ 4,089,502	\$ 4,701,341

Notes to Balance Sheet

Note 7

Deferred income tax assets

The movement of the deferred income tax assets account is as follows:

<i>\$ in thousands</i>	Year Ended	
	December 2022	December 2021
At the beginning of the year	\$ 769	\$ 122
Deferred taxation credited to the statement of comprehensive income	512	647
At the end of the year	\$ 1,281	\$ 769

Deferred income tax assets are recognised primarily for property, plant and equipment and employee incentive plans, to the extent that the realisation of the related tax benefit through future taxable profits is probable.

Deferred income tax assets comprise the following:

<i>\$ in thousands</i>	As at	
	December 2022	December 2021
Provisions	\$ 1,281	\$ 769

Note 8

Employee incentive plans

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

The ultimate parent company grants RSUs (including RSUs subject to performance conditions) to employees of the Company, 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 the RSUs also considers the impact of material non-public information, if any, that the ultimate parent company expects to make available shortly following the grant. RSUs generally vest and underlying shares of common stock deliver (net of required withholding tax) 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 not subject to performance or market conditions generally deliver over a three-year period. RSUs that are subject to performance or market conditions generally deliver after the end of a three-year performance period. For awards that are subject to performance 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. Dividends that accrue during the performance period are paid when the awards settle. The market value of the underlying shares is recharged to the Company by the ultimate parent company.

The activity related to these RSUs was:

	RSUs outstanding	
	Future Service Required	No Future Service Required
Year Ended December 2022		
Outstanding at the beginning of the year	11,820	63,330
Granted	20,189	45,002
Forfeited	(69)	-
Delivered	-	(35,555)
Transferred out, net	(340)	-
Vested	(10,967)	10,967
Outstanding at the end of the year	20,633	83,744
Year Ended December 2021		
Outstanding at the beginning of the year	2,479	16,955
Granted	19,570	49,752
Forfeited	(4,352)	-
Delivered	-	(9,968)
Transferred in, net	714	-
Vested	(6,591)	6,591
Outstanding at the end of the year	11,820	63,330

The weighted average grant-date fair value of RSUs granted during the year was US\$323.75 (2021: US\$254.79).

Notes to Balance Sheet**Note 9****Property, plant and equipment**

<i>\$ in thousands</i>	Computers & office equipment		Assets under construction	Total
As at December 2022				
Opening net book amount	\$ 16,458	\$ 24,319	\$	40,777
Additions	–	27,461		27,461
Disposals	(28)	–		(28)
Transfers to fixed assets	23,485	(23,485)		–
Depreciation	(16,019)	–		(16,019)
Closing net book amount	\$ 23,896	\$ 28,295	\$	52,191
At the end of the year				
Cost	\$ 108,149	\$ 28,295	\$	136,444
Accumulated depreciation	(84,253)	–		(84,253)
Closing net book amount	\$ 23,896	\$ 28,295	\$	52,191

As at December 2021

Opening net book amount	\$ 13,793	\$ 11,452	\$	25,245
Additions	–	27,684		27,684
Disposals	(1,658)	–		(1,658)
Transfers to fixed assets	14,817	(14,817)		–
Depreciation	(10,494)	–		(10,494)
Closing net book amount	\$ 16,458	\$ 24,319	\$	40,777
At the end of the year				
Cost	\$ 85,108	\$ 24,319	\$	109,427
Accumulated depreciation	(68,650)	–		(68,650)
Closing net book amount	\$ 16,458	\$ 24,319	\$	40,777

Note 10**Trade and other receivables**

<i>\$ in thousands</i>	As at	
	December 2022	December 2021
Current assets		
Amounts due from related companies	\$ 1,577,420	\$ 1,596,529
Trade and other receivables	535,385	184,764
Prepayments	–	4
Term deposits with affiliated bank	200,000	600,000
Loans to employees	24	–
Total	\$ 2,312,829	\$ 2,381,297
Non-current assets		
Deposits	\$ 22	\$ 67
Term deposits with affiliated bank	650,000	650,000
Total	\$ 650,022	\$ 650,067

Note 11**Trade and other payables**

<i>\$ in thousands</i>	As at	
	December 2022	December 2021
Current liabilities		
Amounts due to related companies	\$ 125,480	\$ 116,322
Trade payables	357,934	474,939
Accruals and other liabilities	30,870	23,664
Total	\$ 514,284	\$ 614,925
Non-current liabilities		
Amounts due to related companies	\$ 16,852	\$ 15,165
Accruals and other liabilities	11,771	11,677
Total	\$ 28,263	\$ 26,842

Note 12**Subordinated liability**

The Company has an unsecured subordinated loan payable to its immediate parent company, Goldman Sachs Holdings (Singapore) Pte. Ltd. of US\$500 million as at 31 December 2022 (2021: US\$500 million). The loan is subordinated to claims of general creditors.

Interest on the loan is charged at 2.29% to 6.57% (2021: 2.21% to 2.69%) during the year. The carrying amount of the subordinated loan payable approximates the fair value as this balance is subject to variable interest rates.

<i>\$ in thousands</i>	Year Ended	
	December 2022	December 2021
At the beginning of the year	\$ 500,000	\$ 200,000
Repayment	–	(200,000)
Drawdown	–	500,000
At the end of the year	\$ 500,000	\$ 500,000

Note 13**Share capital**

	Number of shares	Amount
	<i>In thousands</i>	<i>\$ in thousands</i>
Year Ended December 2022		
Issued share capital:		
At the beginning and end of the year	760,000	\$ 755,141
Year Ended December 2021		
Issued share capital:		
At the beginning of the year	10,000	\$ 5,141
Issue of new shares	750,000	750,000
At the end of the year	760,000	\$ 755,141

Issued ordinary shares are fully paid. There is no par value for these ordinary shares.

Notes to Balance Sheet**Note 14
Dividends**

<i>\$ in thousands</i>	As at	
	December 2022	December 2021
Interim exempt (one-tier) dividend	\$ 200,000	\$ –

**Note 15
Related party transactions**

In addition to those disclosed elsewhere in the balance sheet, the following transactions were carried out with related parties:

<i>\$ in thousands</i>	As at	
	December 2022	December 2021
Current assets		
Derivative financial instruments (a)		
- affiliated companies	\$ 2,142,896	\$ 2,003,720
Trade and other receivables (b)		
- immediate parent company	\$ 249,137	\$ 34,592
- affiliated companies	\$ 1,528,283	\$ 2,161,937
Non-current assets		
Trade and other receivables (b)		
- affiliated company	\$ 650,000	\$ 650,000
Current liabilities		
Derivative financial instruments (a)		
- affiliated companies	\$ 2,752,826	\$ 3,021,826
Trade and other payables (b)		
- ultimate parent company	\$ 14,577	\$ 10,368
- immediate parent company	\$ 7,389	\$ 5,934
- affiliated companies	\$ 103,514	\$ 100,020
Non-current liabilities		
Trade and other payables (b)		
- ultimate parent company	\$ 16,852	\$ 15,165
Subordinated liability		
- immediate parent company	\$ 500,000	\$ 500,000

Notes:

- (a) Derivative financial instruments with affiliated companies arise from transactions entered into in the normal course of business.
- (b) Trade and other receivables and payables include:
- (1) Amounts due from related companies primarily comprise term deposits placed with affiliated bank, short-term loan to immediate parent company, carry-broker receivables and revenue receivables from affiliated companies. Balances other than term deposits placed with affiliated bank and carry-broker

receivables are unsecured and repayable on demand. Interest on the various loans are charged at 1.60% to 6.62% as at the end of the year (2021: 1.41%).

- (2) Amounts due to related companies primarily comprise chargeback of share-based awards payable to the ultimate parent company, revenue payables to affiliated companies, short-term loans and service charges payable to affiliated companies. Interest on the various loans are charged at 3.29% to 10.28% as at the end of the year (2021: -1.53% to 7.38%).