Goldman Sachs Group UK Limited

Pillar 3 Disclosures

For the period ended December 31, 2021

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Introduction

Overview

The Goldman Sachs Group, Inc. (Group Inc. or parent company), a Delaware corporation, together with its consolidated subsidiaries (collectively, the firm), is a leading global financial institution that delivers a broad range of financial services across investment banking, securities, investment management and consumer banking to a large and diversified client base that includes corporations, financial institutions, governments and individuals. Goldman Sachs Group UK Limited (GSGUKL) is a wholly owned subsidiary of Group Inc. When we use the terms “Goldman Sachs”, “GS Group” and “the firm”, we mean Group Inc. and its consolidated subsidiaries and when we use the terms “GSGUK”, “the company”, “we”, “us” and “our”, we mean GSGUKL and its consolidated subsidiaries.

The Board of Governors of the Federal Reserve System (FRB) is the primary regulator of Group Inc., a bank holding company (BHC) under the U.S. Bank Holding Company Act of 1956 and a financial holding company under amendments to this Act. The firm is subject to consolidated regulatory capital requirements which are calculated in accordance with the regulations of the FRB (Capital Framework).

GSGUK is supervised on a consolidated basis by the Prudential Regulation Authority (PRA) and as such is subject to minimum capital and liquidity adequacy standards. GSGUK major subsidiaries are regulated by the Financial Conduct Authority (FCA) and the PRA, and are subject to minimum capital and liquidity adequacy standards also on a standalone basis.

The capital requirements are expressed as risk-based capital and leverage ratios that compare measures of regulatory capital to risk-weighted assets (RWAs), average assets and off-balance-sheet exposures. Failure to comply with these capital requirements could result in restrictions being imposed by our regulators and could limit our ability to repurchase shares, pay dividends and make certain discretionary compensation payments. GSGUK’s capital levels are also subject to qualitative judgements by the regulators about components of capital, risk weightings and other factors.

For information on Group Inc.’s financial statements and regulatory capital ratios, please refer to the firm’s annual Pillar 3 Disclosures and Annual Report on Form 10-K. References to the “2021 Form 10-K” are to the firm’s Annual Report on Form 10-K for the year ended December 31, 2021. All references to December 2021 refer to the period ended, or the date, as the context requires, December 31, 2021.

https://www.goldmansachs.com/investor-relations/financials/other-information/2021/4q-pillar3-2021.pdf

https://www.goldmansachs.com/investor-relations/financials/10k/2021/2021-10-k.pdf

The GSGUK consolidated regulatory capital requirement are being calculated in accordance with the UK’s implementation of the E.U. Capital Requirements Directive (CRD), the Capital Requirements Regulation (CRR[1]), and associated PRA supervisory rules and regulatory standards. These requirements are largely based on the Basel Committee’s final capital framework for strengthening international capital standards (Basel III), which is structured around three pillars: Pillar 1 “minimum capital requirements”, Pillar 2 “supervisory review process” and Pillar 3 “market discipline”.

Following the end of the transition period after the U.K.’s withdrawal from the E.U., any reference made in this document to E.U. directives and regulations (including technical standards) should be read as a reference to the U.K.’s version of such directive and/or regulation, as onshored into UK law. As of the date of publication, the applicable U.K. and E.U. frameworks remain largely consistent, however any relevant differences are identified in the document.

The annual Pillar 3 disclosures set out the qualitative and quantitative elements of Part 8 of the CRR, as supplemented by the PRA Rulebook for which more frequent disclosure is appropriate in accordance with the European Banking Authority (EBA) Guidelines of the CRR.

[1] In this document, the term ‘CRR’ refers to the onshored version of Regulation (E.U.) No 575/2013 of the European Parliament and of the Council of 26 June 2013, as amended by UK authorities including by way of PRA CRR rule instruments.

The Pillar 3 disclosures are published in conjunction with consolidated financial information for GSGUK for December 31, 2021. The latest annual consolidated financial information for GSGUK, prepared in line with the recognition and measurement requirements of E.U.-adopted International Financial Reporting Standards (IFRS), can be accessed via the following link:

https://www.goldmansachs.com/disclosures/gsgukl-consolidated-financials-2021.pdf

Measures of exposures and other metrics disclosed in this report may not be based on IFRS, may not be directly comparable to measures reported in financial statements, and may not be comparable to similar measures used by other companies. These disclosures are not required to be, and have not been, audited by our independent auditors.

Basis of Consolidation

GSGUKL is the holding company for a group that provides a wide range of financial services to clients located worldwide. The company's functional currency is US dollars and these disclosures are prepared in that currency.

The following UK-regulated subsidiaries are included in the regulatory consolidation:

- Goldman Sachs International (GSI)
- Goldman Sachs International Bank (GSIB)

Following an internal reorganisation executed in November 2021, the group's principal U.K. Asset Management entity, Goldman Sachs Asset Management International (GSAMI), no longer falls within the GSGUK scope of regulatory consolidation as of December 31, 2021.

The scope of consolidation for regulatory capital purposes is consistent with the IFRS consolidation.

Following the exemption of GSGUKL from the requirement to be an approved financial holding company, GSI will be the CRR consolidation entity, meaning that GSI will be responsible for the compliance with the requirements applicable to GSGUK on a consolidation basis.

The company is required to make certain capital disclosures on an individual or subconsolidated basis for significant subsidiaries. The significant subsidiaries of GSGUK are GSI and GSIB. GSI is the firm's broker dealer in the Europe, Middle East and Africa (EMEA) region. GSIB is a U.K.-domiciled bank involved in lending and deposit-taking activities, securities lending, and a primary dealer for U.K. government bonds. The risk profile of GSGUK is materially the same as that of GSI and GSIB combined. Risk management policies and procedures are applied consistently to GSI, GSIB and to GSGUK as a whole. The remaining entities have minimal balance sheet activity and have not been determined material subsidiaries for the purposes of these disclosures.

Restrictions on the Transfer of Funds or Regulatory Capital within the Firm

Group Inc. is a holding company and, therefore, utilises dividends, distributions and other payments from its subsidiaries to fund dividend payments and other payments on its obligations, including debt obligations. Regulatory capital requirements, as well as other provisions of applicable law and regulations, restrict Group Inc.'s ability to withdraw capital from its regulated subsidiaries. Within GSGUK, capital is provided by GSGUKL to subsidiary entities. Capital is considered transferable to other entities within the GSGUK Group without any significant restriction except to the extent it is required for regulatory purposes.

For information about restrictions on the transfer of funds within Group Inc. and its subsidiaries, see "Note 20. Regulation and Capital Adequacy" in Part II, Item 8 "Financial Statements and Supplementary Data" and "Risk Management – Liquidity Risk Management" and "Capital Management and Regulatory Capital" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K.

Definition of Risk-Weighted Assets

The risk weights used in the calculation of RWAs reflect an assessment of the riskiness of our assets and exposures. These risk weights are based on either predetermined levels set by regulators or on internal models which are subject to various qualitative and quantitative parameters that are subject to approval by our regulators. The relationship between available capital and capital requirements can be expressed in the form of a ratio, and capital requirements are arrived at by dividing RWAs by 12.5. In this document, minimum capital ratios set out in Table 1 are expressed including the impact of additional buffers.

Fair Value

Trading assets and liabilities, certain investments and loans, and certain other financial assets and liabilities, are included in our consolidated balance sheets at fair value (i.e., marked-to-market), with related gains or losses generally recognised in our consolidated statements of earnings and, therefore, in capital. 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. The use of fair value to measure financial instruments is fundamental to risk management practices and is our most critical accounting policy. The daily discipline of marking substantially all of our inventory to current market levels is an effective tool for assessing and managing risk and provides transparent and realistic insight into our inventory exposures. The use of fair value is an important aspect to consider when evaluating our capital base and our capital ratios as changes in the fair value of our positions are reflected in the current period's shareholders' equity, and accordingly, regulatory capital; it is also a factor used to determine the classification of positions into the banking book and trading book.

For further information about the determination of fair value under accounting principles generally accepted in the United States (U.S. GAAP) and controls over valuation of financial instruments, see "Note 3. Significant Accounting Policies" in Part II, Item 8 "Financial Statements and Supplementary Data" and "Critical Accounting Policies – Fair Value" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K.

The firm has documented policies and maintains systems and controls for the calculation of Prudent Valuation Adjustment ("PVA") as required by the Commission Delegated Regulation (EU) No. 2016/101. PVA represents the excess of valuation adjustments required to achieve prudent value, over any adjustment applied in the firm's fair value that addresses the same source of valuation uncertainty. For a valuation input where the range of plausible values is created from mid prices, Prudent Value represents the point within the range where the firm is 90% confident that the mid value which could be achieved in exiting the valuation exposure would be at that price or better. The Firm's methodology addresses fair value uncertainties arising from a number of sources; market price uncertainty, close-out costs, model risk, unearned credit spreads, investing and funding cost, concentrated positions, future administrative costs, early termination, operational risk. Methodologies utilised by our independent control functions to calculate PVA are aligned with, and use the same external data sources as, those used when carrying out price verification of fair value.

Banking Book / Trading Book Classification

The firm has a comprehensive framework of policies, controls and reporting arrangements to meet the requirements of the CRR on the classification and treatment of positions in the banking book and trading book. In order to determine the appropriate regulatory capital treatment for our exposures, positions must first be classified into either banking book or trading book. Positions are classified as banking book unless they qualify to be classified as trading book.

Trading book positions generally meet the following criteria: they are assets or liabilities that are accounted for at fair value; they are risk managed using a Value-at-Risk (VaR) internal model; they are held as part of our market-making and underwriting businesses and are intended to be resold in the short term, or positions intended to benefit from actual or expected short-term price differences between buying and selling prices or from other price or interest rate variations[2]. Trading book positions are subject to market risk regulatory capital requirements, as are foreign exchange and commodity positions, whether or not they meet the other criteria for classification as trading book positions. Market risk is the risk of loss in value of these positions due to changes in market conditions. Some trading book positions, such as derivatives, are also subject to counterparty credit risk regulatory capital requirements.

Banking book positions may be accounted for at amortised cost, fair value or in accordance with the equity method. Banking book positions are subject to credit risk regulatory capital requirements. Credit risk represents the potential for loss due to the default or deterioration in credit quality of a counterparty (e.g., an over-the-counter (OTC) derivatives counterparty or a borrower) or an issuer of securities or other instruments we hold.

Regulatory 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. The expectation is that the principal areas of impact from regulatory reform for the company will be increased regulatory capital requirements and increased regulation and restriction on certain activities. However, 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 final U.K. regulations.

The U.K. has adopted E.U. financial services legislation that was in effect on December 31, 2020, which means that as a

[2] As defined in point (85) of Article 4(1) in CRR

starting point the U.K. financial services regime remains substantially the same as it was under E.U. financial services legislation. However, from this date which marks the end of the transition period after the U.K.'s withdrawal from the E.U., the U.K. has begun to consult on and adopt its own regulations.

Risk-Based Capital Ratios. In October 2021, the PRA published CRR rules corresponding to onshored CRR provisions which were revoked by HM Treasury. The purpose of these rules is to implement certain international standards that remain to be implemented in the U.K., consistent with amendments published in the Official Journal of the E.U. in June 2019. The Financial Policy Committee and the PRA have also published in October 2021 a revised UK leverage ratio framework[3].

As a result, new rules introducing the standardised approach to counterparty credit risk (SA-CCR) and changes to rules for the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities (MREL), large exposures and reporting and disclosure requirements will become effective from January 1, 2022.

In addition, the PRA implemented new rules in respect of the application of consolidated requirements to financial holding companies and mixed financial holding companies.

In December 2017, the Basel Committee published standards that it described as the finalisation of the Basel III post-crisis regulatory reforms (Basel III Revisions). These standards include revisions to the framework relating to the standardised and internal model-based approaches used to calculate market risk requirements and clarifies the scope of positions subject to market risk capital requirements. They also revise the Basel Committee's standardised and internal model-based approaches for credit risk, provide a new standardised approach for operational risk capital and revise the frameworks for credit valuation adjustment (CVA) risk. Finally, the Basel III Revisions set a floor on internally modelled capital requirements at a percentage of the capital requirements under the standardised approach. In July 2020, the Basel Committee finalised further revisions to the framework for CVA risk, which are intended to align that framework with the market risk framework.

The Basel Committee framework contemplates that national regulators implement these standards by January 1, 2023, and that the new floor be phased in through January 1, 2028. HM Treasury stated in its Financial Services Bill proposal that the UK remains committed to a full, timely and consistent implementation of the standards. The PRA is expected to consult on relevant rules to finalise the implementation of these standards in the U.K. in the fourth quarter of 2022.

The Basel Committee has also published an updated securitisation framework which has been implemented in the U.K.

The impact of the latest Basel Committee developments on the firm (including its RWAs and regulatory capital ratios) is subject to uncertainty until corresponding legislation is implemented.

Other Developments

Impact of Covid-19 Pandemic

Infection rates in many parts of the world spiked towards the end of 2021 and into early 2022, as the highly transmissible Omicron variant emerged in the fourth quarter and spread rapidly, while other sub-variants also remain a concern. The surge of infections has led to a renewed emphasis globally on safety measures and restrictions, as well as a greater sense of urgency regarding the distribution of vaccines and vaccine boosters, and has created a greater degree of uncertainty regarding the prospects for economic growth in 2022.

The company has continued to successfully execute on its BCP strategy since initially activating it in March 2020 in response to the emergence of the COVID-19 pandemic. The company's priority has been to safeguard its employees and to seek to ensure continuity of business operations on behalf of its clients.

In general, the market backdrop continued to be constructive during the fourth quarter of 2021 and activity levels remained solid. Volatility increased toward the end of the quarter as a result of the spike in infections, while accelerating inflation, driven by supply chain disruptions and labour shortages, and more moderated growth expectations were key macroeconomic considerations heading into 2022. The company continued to deploy its balance sheet to intermediate risk and to support the needs of clients.

While the global economy continued on the path to recovery during 2021, it is vulnerable to the risk that the Omicron variant, or other possible variants could impede the recovery going forward by precipitating adverse economic consequences, such as a softening in consumer and business confidence and spending, a worsening of supply chain constraints and an intensification of inflationary pressures. If

[3] See PRA Policy Statements 21/21 and 22/21, October 2021

the future effects of the pandemic were to lead to a sustained period of economic weakness, the company's businesses would be negatively impacted. The company will continue to closely monitor the rollout of vaccines across regions, as well as the impact of new variants of the virus, and will take further actions, as necessary, in order to best serve the interests of its employees, clients and counterparties.

Impact of Russian Invasion of Ukraine

The Russian invasion of Ukraine in February 2022 has resulted in governments around the world introducing significant sanctions on Russian entities and individuals, and triggered disruption across global financial markets and increased uncertainty in the business environment in which the company operates.

In particular, there has been an unprecedented decline in equity and credit prices of Russian companies, and a sharp fall in the value of the Russian ruble compared to the U.S. dollar in February 2022**.**The war has also triggered a sharp rise in commodity prices, notably oil and gas, base and precious metals, and agricultural products.

The company has continued to provide market-making services to its clients while managing market risk levels proactively through ongoing review of exposure limits and focusing on ways to mitigate risk. In particular, the company continues to proactively manage its market risk and credit risk exposures to both Russia and Ukraine, and more broadly to other companies with exposure to the region or to commodity prices. The company is also focused on managing its increased compliance risk from meeting all sanction requirements, and increased settlement risk from trades with Russian counterparts.

GS Group remains focused on providing support to its employees impacted by the war, including those of the company or of GS Group affiliates which may provide services to the company, and on supporting the humanitarian efforts of its non-profit partners.

The future impact of the war on the company remains difficult to predict. However, further escalation of the war or increases in the scope of sanctions could have adverse economic consequences, including a slowdown in economic growth, an acceleration of inflation and a reduction in client activity levels, which would likely have a negative impact on the company's operating results, financial condition, and liquidity.

Risk Management

Overview

The firm believes that effective risk management is critical to the success of the firm and of GSGUK. Accordingly, the firm has established an enterprise risk management framework that employs a comprehensive, integrated approach to risk management, and is designed to enable comprehensive risk management processes through which the risks associated with the company's business are identified, assessed, monitored and managed.

These risks include liquidity, market, credit, operational, model, legal, compliance, conduct, regulatory and reputational risks. The following section covers the risk management structure which is built around three core components: governance, processes and people.

The implementation of the firm'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 boards of directors of the company, GSI, and GSIB, the firm's risk committees and senior management with a consistent and integrated approach to managing the various risks in a manner consistent with the firm's risk appetite.

Governance

Risk management governance starts with the Board of Directors of the firm (Board), which both directly and through its committees, including its Risk Committee, oversees the risk management policies and practices. The Board is also responsible for the annual review and approval of the firm's risk appetite statement. The risk appetite statement describes the levels and types of risk the firm is willing to accept or to avoid, in order to achieve strategic business objectives included in the strategic business plan, while remaining in compliance with regulatory requirements. The Board reviews the strategic business plan and is ultimately responsible for overseeing and providing direction about strategy and risk appetite.

The firm'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 and are accountable for the outcomes of the risk-generating activities, as well as for assessing and managing those risks within the firm's risk appetite.

The independent risk oversight and control functions are considered 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 the third line of defence and reports to the Audit Committee of the Board and administratively to the chief executive officer. Internal Audit includes professionals with a broad range of audit and industry experience, including risk management expertise. Internal Audit is responsible for independently assessing and validating the effectiveness of key controls, including those within the risk management framework, and providing timely reporting to the Audit Committee of the Board, senior management and regulators.

The three lines of 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.

The firm maintains strong and proactive communication about risk and it has a culture of collaboration in decision-making among the first and second lines of defence, committees and senior management. While the first line of defence is responsible for management of their risk, the firm dedicates extensive resources to the second line of defence in order to ensure a strong oversight structure and an appropriate segregation of duties. The firm regularly reinforces its strong culture of escalation and accountability across all functions.

Processes

The firm maintains various processes that are critical components of its risk management framework, including (i) risk identification and assessment, (ii) risk appetite, limit and threshold setting, (iii) risk reporting and monitoring, and (iv) risk decision-making.

The firm has a comprehensive data collection process, including policies and procedures that require all employees to report and escalate risk events. The firm approach for risk identification and assessment 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 firm's most critical risks. The firm 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 firm approach to identify and manage the risks to its assets and counterparties arising from climate change.

To effectively assess and monitor risks, the firm maintains a daily discipline of marking substantially all of its inventory to current market levels. The firm does so because of its belief that this discipline is one of the most effective tools for assessing and managing risk and that it provides transparent and realistic insight into its inventory exposures. The firm also applies a rigorous framework of limits and thresholds to control and monitor risk across transactions, products, businesses and markets. See "Credit Risk", "Market Risk" and "Liquidity Risk" for further information.

An important part of the firm's risk management process is stress testing. It allows the firm 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 firm's vulnerabilities, and idiosyncratic risks combining financial and non-financial risks, including, but not limited to, credit, market, liquidity and funding, operational and compliance, strategic, systemic and emerging risks. Ad hoc stress tests are also performed in anticipation of market events or conditions. Stress testing is also used to assess capital adequacy as part of the firm's capital planning process.

The firm's risk reporting and monitoring processes are designed to take into account information about both existing and emerging risks, thereby enabling the firm's risk committees and senior management to perform their responsibilities with the appropriate level of insight into risk exposures. Furthermore, the firm's limit and threshold breach processes provide means for timely escalation. The firm 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 firm-wide and entity level.

The firm's governance and processes, as described above, equally apply to GSGUK and its entities.

People

Even the best technology serves only as a tool for helping to make informed decisions in real time about the risks the firm is taking. Ultimately, effective risk management requires people to interpret risk data on an ongoing and timely basis and adjust risk positions accordingly. The experience of the company's professionals, and their understanding of the nuances and limitations of each risk measure, guides the company in assessing exposures and maintaining them within prudent levels.

The firm reinforces a culture of effective risk management, consistent with its risk appetite, in its training and development programmes, as well as in the way it evaluates performance, and recognises and rewards people. The firm's training and development programmes, including certain sessions led by the most senior leaders, are focused on the importance of risk management, client relationships and reputational excellence. As part of the firm's annual performance review process, the firm assesses reputational excellence, including how an employee exercises good risk management and reputational judgement, and adheres to the firm's code of conduct and compliance policies. The firm's review and reward processes are designed to communicate and reinforce to its professionals the link between behaviour and how people are recognised, the need to focus on clients and reputation, and the need to always act in accordance with the highest standards of the firm.

Structure

Ultimate oversight of risk in the firm is the responsibility of the Board, who oversee risk both directly and through its committees, including its Risk Committee. A series of committees within the significant subsidiaries with specific risk management mandates covering important aspects of each entity's businesses also have oversight or decision-making responsibilities. The key committees with oversight of our activities are described below.

European Management Committee (EMC). The EMC oversees all of our activities in the region. It is chaired by the chief executive officer of GSI and its membership includes senior managers from the revenue-producing divisions and independent control and support functions. The EMC reports to GSI's Board of Directors.

GSI and GSIB Board Audit Committees. The GSI and GSIB Board Audit Committees assist the GSI and GSIB Boards of Directors in the review of processes for ensuring the suitability and effectiveness of the systems and controls in the region. The committees also have responsibility for overseeing the external audit arrangements and review of internal audit activities. Their membership includes non-executive directors of GSI and GSIB. The Board Audit Committees report to the GSI and GSIB Boards.

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

GSI and GSIB Risk Committees. The GSI and GSIB Risk Committees are responsible for the ongoing monitoring and control of all financial and non-financial risks associated with each entity's activities. This includes reviewing key financial and risk metrics, including but not limited to profit and loss, capital (including the Internal Capital Adequacy Assessment Process (ICAAP)), funding, liquidity, credit risk, market risk, compliance and operational risk, strategic and business environment risk, price verification and stress tests. The GSI and GSIB Risk Committees approve risk limits and thresholds through direct or delegated authority. Their membership includes senior managers from the revenue-producing divisions and independent risk oversight and control functions. The Risk Committees report to the GSI and GSIB Boards.

EMEA Conduct Committee. The EMEA Conduct Committee has oversight responsibility for conduct risk, as well as with assisting senior management in overseeing the integrity of firm personnel. Its membership includes senior managers from the revenue-producing divisions and independent risk oversight and control functions. The EMEA Conduct Committee reports to the European Management Committee (EMC), GS Group's Firmwide Client and Business Standards Committee, and GSI and GSIB Boards or their committees as appropriate.

Risk Profile and Strategy

In the normal course of activities in serving clients, we commit capital, engage in derivative transactions, and otherwise incur risk as an inherent part of our business. However, we endeavour not to undertake risk in form or amount that could potentially and materially impair our capital and liquidity position or the ability to generate revenues, even in a stressed environment. Where possible we employ mitigants and hedges, such as collateral, netting derivatives and other controls, in order to manage such risks within our risk appetite levels.

GSGUKL's principal subsidiaries, GSI and GSIB, have their own Boards of Directors and their own Board Risk Committees, with the responsibility of assisting each Board in overseeing the implementation of the companies' risk appetite and strategy. Each of GSI and GSIB's Board Risk Committees held eight scheduled meetings in 2021.

The companies' overall risk appetite is established through an assessment of opportunities relative to potential loss, and is calibrated to GSI and GSIB's respective capital, liquidity and earnings capability. The primary means of evaluating loss-taking capacity is through the ICAAP. The key aspects of risk management documented through the ICAAP process also form part of GSGUK's day-to-day decision making culture.

The Risk Appetite Statement (RAS) of GSI and GSIB complements the firm's RAS, and articulates the risk philosophy, the identification of risks generated by its business activities, as well as the tolerance and limits set in order to manage effectively those risks. Consistent with this objective, we pay particular attention to evaluating risks that are concentrated, correlated, illiquid, or have other adverse characteristics. The intention is to mitigate or eliminate these risks, limiting them to such an extent that they could not, individually or collectively, materially and adversely affect the companies. GSI and GSIB, regularly review risk exposure and risk appetite, and take into consideration the key external constituencies, in particular their clients, shareholders, creditors, rating agencies, and regulators. The long-term success of our business model is directly linked to the preservation of strong relationships with each of these key constituents.

The Boards of Directors of both GSI and GSIB, as well as their respective Board Risk Committees, are actively engaged in reviewing and approving our overall risk appetite, as well as in reviewing the risk profile. Risk appetite statements are reviewed in the first instance by the respective Board Risk Committees and subsequently endorsed by the Boards annually. The Board Risk Committees also approve any amendment to the risk appetite statements outside of the annual approval process. The Boards of Directors receive quarterly updates on risk as well as ad-hoc updates, as appropriate.

The consideration of risk appetite and the underlying risk management framework ensures that GSGUK's businesses are congruent with our strategy under both normal and stressed environments. We believe that the risk management framework and the associated risk policies, procedures and systems in place are comprehensive and effective with regard to our profile and strategy. The framework is evaluated on an ongoing basis and subject to independent internal audit assessments to ensure our risk management arrangements remain effective.

Risk Measurement

On a day-to-day basis risk measurement plays an important role in articulating the risk appetite of the firm and GSGUK and in managing the risk profile as expressed in the risk appetite statements. Risk may be monitored against firmwide, entity level, product, divisional or business level thresholds or against a combination of such attributes. We measure risk using a suite of metrics, as relevant to each type of risk, including stress metrics to calculate the potential loss from a wide range of scenarios and sensitivity analysis. These risks are tracked systematically and they are monitored and reported to the relevant senior management Committees and Board on a regular basis.

A number of specialist committees and governance bodies sit within the broader risk management framework with responsibilities for the monitoring of specific risks against limits or tolerances and the escalation of any breaches. Specific governance bodies are in place for the management of credit, market, liquidity, model and operational risk.

The firm's risk management framework, which relies on oversight from the Board of Directors, operates independently of revenue producing divisions and other non-revenue producing units such as compliance, finance, legal, internal audit and operations.

GSGUK is fully integrated into the broader firmwide organizational structure and risk governance, and applies a risk philosophy and risk management principles consistent with GS Group. For an overview of the firm's risk management framework, including Board governance, processes and committee structure, see "Risk Management – Overview and Structure of Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K.

Adequacy of Risk Management Arrangements

The Firm is satisfied that the risk management arrangements and systems, as described above, are appropriate given the strategy and risk profile of GSGUK. These elements are reviewed at least annually and, where appropriate, updated to reflect best practice, evolving market conditions and changing regulatory requirements.

Capital Framework

Capital Structure

For regulatory capital purposes, a company's total available capital has the following components:

- Common Equity Tier 1 capital (CET1), which is comprised of common shareholders' equity, after giving effect to deductions for disallowed items and other adjustments;
- Tier 1 capital which is comprised of CET1 capital and other qualifying capital instruments; and
- Tier 2 capital which is comprised of long term qualifying subordinated debt and preference shares.

Certain components of our regulatory capital are subject to regulatory limits and restrictions under the rules. In general, to qualify as Tier 1 or Tier 2 capital, an instrument must be fully paid and unsecured. A qualifying Tier 1 or Tier 2 capital instrument must also be subordinated to all senior indebtedness of the organisation.

Under the rules, the minimum CET1, Tier 1 capital and Total capital ratios (collectively the Pillar 1 capital requirements) are supplemented by:

- A capital conservation buffer of 2.5%, consisting entirely of capital that qualifies as CET1 capital.
- A countercyclical capital buffer of up to 2.5% (consisting entirely of CET1) 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 negligible as of December 2021. 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 GSI's and GSIB's Internal Capital Adequacy Assessment Process (ICAAP), which leads to a final determination by the PRA of individual capital requirement under Pillar 2A. On 29 May 2020, following the onset of COVID-19, the PRA approved an application to convert Pillar 2A capital requirements from a percentage of RWAs to a fixed nominal amount. The sum of Pillar 1 and Pillar 2A requirements is referred to as "Total Capital Requirement" or TCR and represents the minimum amount of capital the PRA considers that a firm should hold at all times.

Together these constitute total minimum regulatory capital ratios.

Minimum Regulatory Capital Ratios

The following table presents GSGUK's, GSI's and GSIB's total minimum regulatory capital ratios as of December 2021

Table 1: Minimum Regulatory Capital Ratios

	December 2021		
	Minimum ratio		
	GSGUK	GSI	GSIB
CET1 ratio	8.1%	8.1%	8.5%
Tier 1 capital ratio	10.0%	9.9%	10.5%
Total capital ratio	12.4%	12.4%	13.2%

The ratios in the above table incorporate the TCR received from the PRA. As of December 2021, GSGUK's TCR at the total capital level was 9.9%.

The PRA also defines the forward looking capital requirement which represents the PRA's view of the capital that GSGUK would require to absorb losses in stressed market conditions to the extent not covered by the capital conservation buffer. This is known as Pillar 2B or the "PRA buffer" and is not reflected in the minimum regulatory capital ratios shown in Table 1 above.

Compliance with Capital Requirements

As of December 31, 2021, all of GSGUK's regulated subsidiaries had capital levels in excess of their minimum regulatory capital requirements.

Regulatory Capital

Overview

The following table presents a breakdown of GSGUK's capital ratios under CRR as of December 31, 2021, including those for our significant subsidiaries GSI and GSIB.

Table 2: Regulatory Capital Ratios

$ in millions	As of December 2021		
	GSGUK	**GSI**	**GSIB**
CET1 Capital	$ 33,977	$ 28,810	$ 3,412
Tier 1 Capital	42,277	37,110	3,412
Tier 2 Capital	6,503	5,377	826
Total Capital	**$ 48,780**	**$ 42,487**	**$ 4,238**
RWAs	**$ 293,306**	**$ 269,762**	**$ 17,262**
CET1 Ratio	**11.6%**	**10.7%**	**19.8%**
Tier 1 Capital Ratio	**14.4%**	**13.8%**	**19.8%**
Total Capital Ratio	**16.6%**	**15.7%**	**24.5%**

Transitional Impact of IFRS 9

IFRS9 addresses the classification, measurement and recognition of financial assets and financial liabilities. It replaces the guidance in IAS 39 – Financial Instruments: Recognition and Measurement that relates to the classification and measurement of financial instruments. Based on materiality no further disclosures for the transitional impact of IFRS9 are made in this document.

Capital Structure

All capital, RWAs and ratios are based on current interpretation, expectations and understanding of the rules and may evolve as the interpretation and application is discussed with our regulators.

Assets that are deducted from capital in computing the numerator of the capital ratios are excluded from the computation of RWAs in the denominator of the ratios. The following tables contain information on the components of our regulatory capital structure. The capital resources of GSGUK are based on audited, consolidated non-statutory financial information and those of GSI and GSIB are based on audited statutory financial statements.

Table 3: Regulatory Capital Resources

$ in millions	As of December 2021		
	GSGUK	**GSI**	**GSIB**
Ordinary Share Capital	$ 2,135	$ 598	$ 63
Share Premium Account Including Reserves	592	5,406	2,020
Retained Earnings[1]	33,054	24,591	1,419
Unaudited profits for the financial period	-	-	-
CET1 Capital Before Deductions	**$ 35,781**	**$ 30,595**	**3,502**
Net Pension Assets	(172)	(172)	-
CVA and DVA	(5)	(16)	11
Prudent Valuation Adjustments	(663)	(638)	(9)
Expected Loss Deduction and Loan Loss Provision	(687)	(705)	(69)
Deferred Tax Assets	(17)	-	(17)
Other Adjustments[2]	(86)	(86)	-
Intangibles[3]	(174)	(168)	(6)
CET1 Capital After Deductions	**$ 33,977**	**$ 28,810**	**$ 3,412**
Additional Tier 1 capital	**8,300**	**8,300**	**-**
Tier 1 Capital After Deductions	**$ 42,277**	**$ 37,110**	**$ 3,412**
Tier 2 Capital Before Deductions	6,503	5,377	826
Other Adjustments	-	-	-
Tier 2 Capital After Deductions	**$ 6,503**	**$ 5,377**	**$ 826**
Total Capital Resources	**$ 48,780**	**$ 42,487**	**$ 4,238**

1. Includes recognised profits as of December 2021.
2. Other Adjustments to Common Equity Tier 1 capital primarily represent regulatory deductions for foreseeable charges applicable to profits recognised as of December 2021.
3. The impact from application of the EBA prudential treatment of software assets on GSGUK own funds is to increase CET1 ratio by 7bps as of December 2021. In July 2021 the PRA confirmed that it requires the full deduction from CET1 capital of all intangible assets, with no exception for software assets, from 1 January 2022.

A further breakdown of the deductions from regulatory capital can be found in Table 44. We set out below a reconciliation between the capital resources of each entity and their respective balance sheets.

Table 4: Reconciliation to Balance Sheet

$ in millions	As of December 2021		
	GSGUK	**GSI**	**GSIB**
Total Shareholders' Funds per Balance Sheet	$35,781	$30,595	$3,502
Regulatory deductions	(1,804)	(1,785)	(90)
Additional Tier 1 Capital	8,300	8,300	0
Tier 2 Capital After Deductions	6,503	5,377	826
Total Capital Resources	**$48,780**	**$42,487**	**$4,238**

Minimum Requirement for Own Funds and Eligible Liabilities (MREL)

The amendments to the CRR published in June 2019 require material subsidiaries of an overseas banking group at the consolidated level, such as GSGUK, to have sufficient own funds and eligible liabilities to meet internal MREL. These rules began to phase in from June 27, 2019, and will become fully effective on January 1, 2022.

As of December 31, 2021, GSGUK had own funds and eligible liabilities in excess of its internal MREL.

GSGUK own funds and eligible liabilities key metrics are provided in Table 5.

Table 5: Own Funds and Eligible Liabilities

$ in millions	**As of December 2021**
	GSGUK
Total own funds and eligible liabilities	**$ 67,656**
Total RWA	293,306
Total own funds and eligible liabilities as a percentage of RWA	23.07%
Leverage Exposure	950,265
Total own funds and eligible liabilities as a percentage of leverage exposure	7.12%
Excluded Liabilities per Article 72a(2) of CRR	**$ 905,655**

Table 6 provides details of the composition of GSGUK's own funds and eligible liabilities.

Table 6: Own Funds and Eligible Liabilities Composition

$ in millions	**As of December 2021**
	GSGUK
Common Equity Tier 1 capital (CET1)	**$ 33,977**
Additional Tier 1 capital (AT1) before own funds and eligible liabilities adjustments	8,300
AT1 instruments not eligible to meet internal MREL	(2,800)
AT1 instruments eligible under the own funds and eligible liabilities framework	**$ 5,500**
Tier 2 capital (T2) before own funds and eligible liabilities adjustments	6,503
Amortised portion of T2 instruments where remaining maturity > 1 year	-
Other adjustments	-
T2 instruments eligible under the own funds and eligible liabilities framework	**$ 6,503**
Own funds and eligible liabilities arising from regulatory capital	**$ 45,980**
Eligible liabilities instruments subordinated to excluded liabilities	21,676
Own funds and eligible liabilities instruments arising from non-regulatory capital instruments before adjustments	**$ 21,676**
Own funds and eligible liabilities instruments before deductions	**$ 67,656**
Deduction of investments in own other own funds and eligible liabilities	-
Other adjustments to internal own funds and eligible liabilities	-
Own funds and eligible liabilities instruments after deductions	**$ 67,656**
Total RWAs	293,306
Leverage exposure measure	950,265
Own funds and eligible liabilities as a percentage of total RWAs	23.07%
Own funds and eligible liabilities as a percentage of leverage exposure	7.12%
CET1 (as a percentage of total RWAs) available after meeting minimum capital requirements and MREL	5.57%
Institution-specific combined buffer requirement	2.55%
Of which: capital conservation buffer requirement	2.50%
Of which: bank specific countercyclical buffer requirement	0.05%

Table 7 provides a breakdown of eligible instruments in the creditor hierarchy of GSGUK.

Table 7: Own Funds and Eligible Liabilities Creditor Ranking

$ in millions						As of December 2021
						GSGUK
	(most junior)				**(most senior)**	**Total**
Description of creditor ranking	**Ordinary Shares[1]**	**AT1 Instru-ments**	**Tier 2 Preference Shares**	**Tier 2 Sub-ordinated Loans**	**Senior Sub-ordinated Loans**	
Total capital and liabilities net of credit risk mitigation	**$ 2,135**	**$ 8,300**	**$ 2,300**	**$ 4,203**	**$ 21,676**	**$ 38,614**
Subset of row 3 that are excluded liabilities	-	-	-	-	-	-
Total capital and liabilities less excluded liabilities	**$ 2,135**	**$ 8,300**	**$ 2,300**	**$ 4,203**	**$ 21,676**	**$ 38,614**
Eligible as own funds and eligible liabilities	**$ 2,135**	**$ 5,500**	**$ 2,300**	**$ 4,203**	**$ 21,676**	**$ 35,814**
with 1 year ⩽ residual maturity < 2 years	-	-	-	-	-	-
with 2 years ⩽ residual maturity < 5 years	-	-	-	-	-	-
with 5 years ⩽ residual maturity < 10 years	-	-	**$ 2,300**	**$ 4,203**	**$ 21,676**	**$ 28,179**
with residual maturity ⩾ 10 years	-	-	-	-	-	-
perpetual securities	**$ 2,135**	**$ 5,500**	-	-	-	**$ 7,635**

1. Ordinary shares excludes the value of share premium and reserves

Risk-Weighted Assets

RWAs are calculated based on measures of credit risk, market risk and operational risk. The tables below represent a summary of the RWAs and capital requirements for GSGUK, GSI and GSIB by type as at December 31, 2021 and September 30, 2021.

Table 8: Overview of RWAs

GSGUK

$ in millions

		RWAs		Minimum capital requirements
		December 2021	**September 2021**	
1	**Credit risk (excluding CCR)**	**$ 40,082**	**$ 40,822**	**$ 3,207**
2	Of which the standardised approach	7,584	8,224	607
4	Of which the advanced IRB (AIRB) approach	30,497	30,461	2,440
5	Of which equity IRB under the simple risk-weighted approach or the IMA	2,001	2,137	160
6	**CCR**	**$ 100,988**	**$ 114,274**	**$ 8,079**
7	Of which mark to market	5,730	7,917	458
9	Of which the standardised approach	-	156	-
10	Of which internal model method (IMM)	78,302	88,133	6,265
11	Of which risk exposure amount for contributions to the default fund of a CCP	343	388	27
12	Of which CVA	16,613	17,680	1,329
13	**Settlement risk**	**$ 11,671**	**$ 6,880**	**$ 933**
14	**Securitisation exposures in the banking book (after the cap)**	**$ 1,207**	**$ 1,352**	**$ 97**
19	**Market risk**	**$ 115,634**	**$ 117,651**	**$ 9,251**
20	Of which the standardised approach	63,403	61,874	5,072
21	Of which IMA	52,231	55,777	4,179
22	**Large exposures**	-	-	-
23	**Operational risk**	**$ 23,724**	**$ 21,486**	**$ 1,898**
25	Of which standardised approach	23,724	21,486	1,898
29	**Total**	**$ 293,306**	**$ 302,465**	**$ 23,465**

GSGUK total capital ratio increased from 11.1% in September 2021 to 11.6% in December 2021 primarily due to the following movements:

- GSGUK Credit RWAs as of December 2021 decreased by $9.4 billion compared with September 2021, primarily reflecting a decrease in counterparty credit risk driven by lower derivative and secured funding exposures during the quarter.
- GSGUK Operational RWAs as of December 2021 increased by $2.2 billion compared with September 2021, primarily reflecting an increase in revenues.

GSI

$ in millions		RWAs		Minimum capital requirements
		December 2021	September 2021	
1	**Credit risk (excluding CCR)**	**$ 25,827**	**$ 26,414**	**$ 2,066**
2	Of which the standardised approach	3,416	3,706	273
4	Of which the advanced IRB (AIRB) approach	20,410	20,571	1,633
5	Of which equity IRB under the simple risk-weighted approach or the IMA	2,001	2,137	160
6	**CCR**	**$ 99,775**	**$ 112,762**	**$ 7,983**
7	Of which mark to market	4,994	7,173	400
9	Of which the standardised approach	-	-	-
10	Of which internal model method (IMM)	77,966	87,703	6,238
11	Of which risk exposure amount for contributions to the default fund of a CCP	343	388	27
12	Of which CVA	16,472	17,498	1,318
13	**Settlement risk**	**$ 11,665**	**$ 6,870**	**$ 933**
14	**Securitisation exposures in the banking book (after the cap)**	**-**	**-**	**-**
19	**Market risk**	**$ 111,604**	**$ 113,741**	**$ 8,929**
20	Of which the standardised approach	59,373	57,964	4,750
21	Of which IMA	52,231	55,777	4,179
22	**Large exposures**	**-**	**-**	**-**
23	**Operational risk**	**$ 20,891**	**$ 18,698**	**$ 1,671**
25	Of which standardised approach	20,891	18,698	1,671
29	**Total**	**$ 269,762**	**$ 278,484**	**$ 21,582**

GSIB

$ in millions		RWAs		Minimum capital requirements
		December 2021	September 2021	
1	**Credit risk (excluding CCR)**	**$ 11,675**	**$ 11,406**	**$ 934**
2	Of which the standardised approach	190	111	14
4	Of which the advanced IRB (AIRB) approach	11,485	11,295	920
5	Of which equity IRB under the simple risk-weighted approach or the IMA	0	0	0
6	**CCR**	**$ 1,028**	**$ 1,201**	**$ 82**
7	Of which mark to market	661	752	53
9	Of which the standardised approach	-	-	-
10	Of which internal model method (IMM)	336	430	27
11	Of which risk exposure amount for contributions to the default fund of a CCP	0	0	0
12	Of which CVA	31	19	2
13	**Settlement risk**	**$ 6**	**$ 10**	**$ 0**
14	**Securitisation exposures in the banking book (after the cap)**	**$ 1,207**	**$ 1,352**	**$ 97**
19	**Market risk**	**$ 2,521**	**$ 2,742**	**$ 202**
20	Of which the standardised approach	2,521	2,742	202
21	Of which IMA	-	-	-
22	**Large exposures**	-	-	-
23	**Operational risk**	**$825**	**$ 718**	**$ 66**
25	Of which standardised approach	825	718	66
29	**Total**	**$ 17,262**	**$ 17,429**	**$ 1,381**

Credit Risk

Overview

Credit risk represents the potential for loss due to the default or deterioration in credit quality of a counterparty (e.g. an OTC derivatives counterparty or a borrower) or an issuer of securities or other instruments we hold. Our exposure to credit risk comes mostly from client transactions in OTC derivatives and loans and lending commitments. Credit risk also comes from cash placed with banks, securities financing transactions (i.e., resale and repurchase agreements and securities borrowing and lending activities) and customer and other receivables.

Credit Risk, which is independent of the revenue-producing units and reports to the firm's Chief Risk Officer, has primary responsibility for assessing, monitoring and managing credit risk through firmwide oversight across the firm's global businesses. In addition, we hold other positions that give rise to credit risk (e.g., bonds and secondary bank loans). These credit risks are captured as a component of market risk measures, which are monitored and managed by Market Risk. We also enter into derivatives to manage market risk exposures. Such derivatives also give rise to credit risk, which is monitored and managed by Credit Risk. GSGUK's framework for managing credit risk is consistent with and is part of GS Group's framework.

Credit Risk Management Process

The firm's process for managing credit risk includes the critical components of the risk management framework described in "Risk Management – Overview and Structure of Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K as well as the following:

- Setting of credit limits and monitoring compliance with established credit risk limits;
- Regular reporting on our credit exposures and credit concentrations;
- Establishing or approving underwriting standards;
- Assessing the likelihood that a counterparty will default on its payment obligations;
- Measuring our current and potential credit exposure and losses resulting from a counterparty default;
- Using credit risk mitigants, including collateral and hedging; and
- Maximizing recovery through active workout and restructuring of claims.

Credit Risk also performs credit reviews, which include initial and ongoing analyses of our counterparties. For substantially all credit exposures, the core of the process is an annual counterparty credit review. 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 firm's risk assessment process may also include, where applicable, reviewing certain key metrics, including, but not limited to, delinquency status, collateral values, credit scores and other risk factors.

The firm's 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 on the firm's aggregate credit risk by product, internal credit rating, industry, country and region.

Risk Measures

The firm measures credit risk based on the potential loss in the event of non-payment by a counterparty using current and potential exposure. For derivatives and securities financing transactions, current exposure represents the amount presently owed after taking into account applicable netting and collateral arrangements, while potential exposure represents the firm'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. For loans and lending commitments, the primary measure is a function of the notional amount of the position.

Limits

Credit limits are used at various levels, as well as underwriting standards, to manage the size and nature of credit exposures. For GS Group, the Risk Committee of the Board and the Risk Governance Committee approve credit risk limits at GS Group, business and product levels, consistent with the risk appetite statement. Credit Risk (through delegated authority from the Risk Governance

Committee) sets credit limits for individual counterparties, economic groups, industries and countries. Limits for counterparties and economic groups are reviewed regularly and revised to reflect changing risk appetites for a given counterparty or group of counterparties. Limits for industries and countries are based on our risk appetite and are designed to allow for regular monitoring, review, escalation and management of credit risk concentrations. For information on the limit approval process, see "Risk Management – Overview and Structure of Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K.

Policies authorised by GS Group's Enterprise Risk Committee and the Risk Governance Committee prescribe the level of formal approval required for GS Group to assume credit exposure to a counterparty across all product areas, taking into account any applicable netting provisions, collateral or other credit risk mitigants.

The GSI and GSIB Risk Committees approve the framework that governs the setting of credit risk limits at the entity level, and delegate responsibility for the ongoing execution and monitoring to the GSI and GSIB Chief Credit Officers respectively.

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.

Credit Exposures

For information on the firm's credit exposures, including the gross fair value, netting benefits and current exposure of the firm's derivative exposures and securities financing transactions, see "Note 7. Derivatives and Hedging Activities" and "Note 11. Collateralized Agreements and Financings" in Part II, Item 8 "Financial Statements and Supplementary Data" and "Risk Management – Credit Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K.

Credit Risk and Counterparty Credit Risk RWA

Credit RWA are calculated based on measures of credit exposure, which are then risk weighted. Wholesale exposures generally include credit exposures to corporates, institutions, sovereigns or government entities (other than Securitisation, Retail or Equity exposures). Within GSGUK, GSI and GSIB have permission at the solo and consolidated levels to compute risk weights for certain exposures in accordance with the Advanced Internal Ratings Based (AIRB) approach which utilises internal assessments of each counterparty's creditworthiness. The internal credit rating is assigned to each exposure class based on a credit-worthiness review methodology determined by the Credit Risk department.

As such, the Credit Risk exposure that does not qualify for the AIRB approach but is instead calculated under the standardised approach, for which nominated external credit assessment institutions (ECAI) ratings are potentially eligible to be used, is immaterial. Exposure classes under the standardised approach include corporates, retail and private equity for which external ratings are generally unavailable, unrated or private corporates. These exposures represent less than 5% of the total Credit Risk exposures.

Exposure at Default (EAD). The exposure amount that is risk weighted for regulatory capital calculations. For on-balance-sheet Wholesale exposures, such as receivables and cash, EAD is generally based on the carrying value. For the calculation of EAD for off-balance-sheet exposures, including commitments and guarantees, a credit equivalent exposure amount is calculated based on the notional amount of each transaction multiplied by a credit conversion factor in accordance with Article 166 of the CRR.

For the measurement of substantially all counterparty credit exposure on OTC, cleared and listed derivative and securities financing transactions, GSGUK, GSI and GSIB have permission at the solo and consolidated levels to use the Internal Model Method (IMM). The models estimate Expected Exposures (EE) at various points in the future using risk factor simulations. The model parameters are derived from historical and implied market data using the most recent three-year period as well as a stressed three-year period. The models also estimate the Effective Expected Positive Exposure (EEPE) over the first year of the portfolio, which is the time-weighted average of non-declining positive credit exposure over the EE simulation. EAD is calculated by multiplying the EEPE by a standard regulatory factor of 1.4.

As GSGUK calculates the majority of its counterparty credit exposure under the IMM, the impacts of netting and collateral are integral to the calculation of the exposure. The exposures disclosed below are presented on a net and collateralised basis where there is a legally enforceable netting and collateral opinion. They do not include the effect of any credit protection purchased on counterparties.

Advanced IRB Approach. RWA are calculated by multiplying EAD by the counterparty's risk weight. In accordance with the AIRB approach, risk weights are a function of the counterparty's Probability of Default (PD), Loss Given Default (LGD) and the maturity of the trade or portfolio of trades. We also use internal ratings for risk management purposes.

- PD is an estimate of the probability that an obligor will default over a one-year horizon. For the majority of Wholesale exposures, the PD is assigned using an approach where quantitative factors are combined with a qualitative assessment to determine internal credit rating grades. For each internal credit rating grade, over 5 years of historical empirical data is used to calculate a long run average annual PD which is assigned to each counterparty with that credit rating grade.

  Internal credit rating grades each have external public rating agency equivalents. The scale that is employed for internal credit ratings corresponds to that used by the major rating agencies and the internal credit ratings, while arrived at independently of public ratings, are assigned using definitions of each internal credit rating grade that are consistent with the definitions used by the major rating agencies for their equivalent credit rating grades. As a result, default data published by the major rating agencies for obligors with public ratings can be mapped to counterparties with equivalent internal credit ratings for use in quantification and validation of risk parameters.

- LGD is an estimate of the economic loss rate if a default occurs during economic downturn conditions. For Wholesale exposures, the LGD is determined using data from a recognised vendor model, from a downturn period, and are mapped to obligors based on attributes identified as being statistically significant to the ultimate recovery. LGD estimates for low default portfolios are calibrated using the same data, i.e. from corporate portfolios, which is deemed to be a conservative approach.

- The definition of maturity depends on the nature of the exposure. For OTC derivatives, maturity is an average time measure weighted by credit exposure (based on EE and EEPE) as required by the applicable capital regulation. For securities financing transactions, maturity represents the notional weighted average number of days to maturity. Maturity is floored at one year and capped at five years except where the rules allow a maturity of less than one year to be used as long as certain criteria are met.

Governance and Validation of Risk Parameters

Approaches and methodologies for quantifying PD, LGD, and EAD are monitored and managed by Credit Risk. Models used for regulatory capital are independently reviewed, validated and approved by Model Risk.

To assess the performance of the PD parameters used, on an annual basis the firm performs a benchmarking exercise which includes comparisons of realised annual default rates to the expected annual default rates for each credit rating band and comparisons of the internal realised long-term average default rates to the empirical long-term average default rates assigned to each credit rating band. For 2021 (and 2022 year to date), as well as in previous annual periods, the PDs used for regulatory capital calculations were, on average, higher (i.e., more conservative) than the firm's actual internal realised default rate.

During the period, the total number of counterparty defaults was immaterial as a percentage of total population of counterparties and such defaults primarily occurred within loans and lending commitments. Estimated losses associated with counterparty defaults were not material.

To assess the performance of LGD parameters used, on an annual basis the firm compares recovery rates following counterparty defaults to the recovery rates based on LGD parameters assigned to the corresponding exposures prior to default. While the actual realised recovery on each defaulted exposure varies due to transaction and other situation-specific factors, on average, recovery rates continue to be higher than those implied by the LGD parameters used in regulatory capital calculations.

The performance of each IMM model used to quantify EAD is assessed quarterly via backtesting procedures, performed by comparing the predicted and realised exposure of a set of representative trades and portfolios at certain horizons. The firm's models are monitored and enhanced in response to backtesting.

The following three tables present the methods used to calculate Counterparty Credit Risk RWAs and main parameters used within each method for GSGUK, GSI and GSIB as of December 31, 2021.

Table 9: Analysis of CCR Exposure by Approach

GSGUK

$ in millions

		As of December 2021						
		Notional	**Replacement cost/current market value**	**Potential future credit exposure**	**EEPE**	**Multiplier**	**EAD post CRM**	**RWAs**
1	Mark to market		$ 4,490	$ 5,592			$ 9,724	$ 5,730
3	Standardised approach							
4	IMM (for derivatives and SFTs)				110,046	1.40	154,064	77,725
5	*Of which securities financing transactions*				43,195	1.40	60,473	19,054
6	*Of which derivatives and long settlement transactions*				66,851	1.40	93,591	58,671
11	**Total**							**$ 83,455**

GSI

$ in millions

		As of December 2021						
		Notional	**Replacement cost/current market value**	**Potential future credit exposure**	**EEPE**	**Multiplier**	**EAD post CRM**	**RWAs**
1	Mark to market		$ 4,219	$ 4,865			$ 9,085	$ 4,994
3	Standardised approach							
4	IMM (for derivatives and SFTs)				107,607	1.40	150,649	77,388
5	*Of which securities financing transactions*				41,506	1.40	58,108	18,911
6	*Of which derivatives and long settlement transactions*				66,101	1.40	92,542	58,477
11	**Total**							**$ 82,382**

GSIB

$ in millions

		As of December 2021						
		Notional	**Replacement cost/current market value**	**Potential future credit exposure**	**EEPE**	**Multiplier**	**EAD post CRM**	**RWAs**
1	Mark to market		$ 271	$ 727			$ 998	$ 661
3	Standardised approach							
4	IMM (for derivatives and SFTs)				2,439	1.40	3,415	336
5	*Of which securities financing transactions*				1,689	1.40	2,365	142
6	*Of which derivatives and long settlement transactions*				750	1.40	1,050	194
11	**Total**							**$ 997**

The following table presents GSGUK, GSI and GSIB's EAD after credit risk mitigation and RWAs on exposures to CCPs as of December 31, 2021.

Table 10: Exposures to CCPs

$ in millions							As of December 2021
		EAD post CRM			RWAs		
		GSGUK	GSI	GSIB	GSGUK	GSI	GSIB
1	**Exposures to QCCPs (total)**				**$ 921**	**$ 921**	-
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	10,484	10,484	-	210	210	-
3	(i) OTC derivatives	7,261	7,261	-	146	146	-
4	(ii) Exchange-traded derivatives	2,509	2,509	-	50	50	-
5	(iii) SFTs	714	714	-	14	14	-
6	(iv) Netting sets where cross-product netting has been approved	-	-		-	-	
7	Segregated initial margin	-	-	-			
8	Non-segregated initial margin	18,428	18,428	0	368	368	-
9	Prefunded default fund contributions	1,143	1,143	0	343	343	-
10	Alternative calculation of own funds requirements for exposures				-	-	-
11	**Exposures to non-QCCPs (total)**				-	-	-
12	Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which	-	-	-	-	-	-
13	(i) OTC derivatives	-	-	-	-	-	-
14	(ii) Exchange-traded derivatives	-	-	-	-	-	-
15	(iii) SFTs	-	-	-	-	-	-
16	(iv) Netting sets where cross-product netting has been approved	-	-	-	-	-	-
17	Segregated initial margin	-	-	-			
18	Non-segregated initial margin	-	-	-	-	-	-
19	Prefunded default fund contributions	-	-	-	-	-	-
20	Unfunded default fund contributions	-	-	-	-	-	-

The following table presents GSGUK, GSI and GSIB's exposures subject to CVA capital charges and corresponding RWAs as of December 31, 2021.

Table 11: CVA VaR Capital Charge

$ in millions							As of December 2021
		Exposure value			RWAs		
		GSGUK	GSI	GSIB	GSGUK	GSI	GSIB
1	Total portfolios subject to the advanced method	$ 56,315	$ 56,315	-	$ 10,687	$ 10,687	-
2	(i) VaR component (including the 3× multiplier)				2,358	2,358	-
3	(ii) SVaR component (including the 3× multiplier)				8,329	8,329	-
4	All portfolios subject to the standardised method	5,852	5,670	53	5,926	5,785	31
5	Total subject to the CVA capital charge	**$ 62,167**	**$ 61,985**	**$ 53**	**$ 16,613**	**$ 16,472**	**$ 31**

The following table presents a quarterly flow statement of the RWAs and Capital requirements under the IMM for GSGUK, GSI and GSIB as of December 31, 2021.

Table 12: RWA Flow Statements of CCR Exposures under the IMM

$ in millions							**As of December 2021**
		RWA amounts			**Capital requirements**		
		GSGUK	**GSI**	**GSIB**	**GSGUK**	**GSI**	**GSIB**
1	**RWAs as at the end of the previous reporting period**	**$ 88,133**	**$ 87,703**	**$ 430**	**$ 7,050**	**$ 7,016**	**$ 34**
2	Asset size	(6,765)	(6,679)	(86)	(541)	(535)	(6)
3	Credit quality of counterparties	(2,497)	(2,487)	(10)	(199)	(198)	(1)
7	Foreign exchange movements	(535)	(536)	1	(43)	(43)	0
8	Other	(611)	(612)	1	(49)	(49)	0
9	**RWAs as at the end of the current reporting period**	**$ 77,725**	**$ 77,389**	**$ 336**	**$ 6,218**	**$ 6,191**	**$ 27**

The following table presents GSGUK, GSI and GSIB total and average amount of net balance sheet Credit Risk exposures over the twelve-month period by exposure class as of December 31, 2021.

Table 13: Total and Average Net Amount of Exposures

$ in millions							**As of December 2021**
		GSGUK		**GSI**		**GSIB**	
		Net value of exposures at the end of the period	**Average net exposures over the period**	**Net value of exposures at the end of the period**	**Average net exposures over the period**	**Net value of exposures at the end of the period**	**Average net exposures over the period**
1	Central governments or central banks	$ 59,540	$ 48,206	$ 49,055	$ 38,598	$ 10,440	$ 9,608
2	Institutions	9,622	12,375	8,333	11,106	8,478	7,851
3	Corporates	15,202	15,894	6,577	6,372	9,731	10,728
14	Equity	669	862	669	862	-	-
15	***Total IRB approach***	**$ 85,033**	**$ 77,337**	**$ 64,634**	**$ 56,938**	**$ 28,649**	**$ 28,187**
16	Central governments or central banks	3,162	2,401	528	280	2,632	2,122
21	Institutions	2,552	2, 650	-	-	-	-
22	Corporates	1,679	1,566	1,427	1,323	80	30
24	Retail	96	80	-	-	10	10
26	Secured by mortgages on immovable property	108	141	-	-	47	55
28	Exposures in default	235	127	-	-	6	12
29	Items associated with particularly high risk	1,233	1,221	-	-	-	-
33	Equity exposures	177	165	-	-	-	-
34	Other exposures	517	956	356	590	23	33
35	***Total standardised approach***	**$ 9,759**	**$ 9,307**	**$ 2,311**	**$ 2,193**	**$ 2,798**	**$ 2,262**
36	***Total***	**$ 94,792**	**$ 86,644**	**$ 66,945**	**$ 59,131**	**$ 31,447**	**$ 30,449**

The following table presents a quarterly flow statement of the RWAs and Capital requirements under the IRB approach for GSGUK, GSI and GSIB as of December 31, 2021.

Table 14: RWA Flow Statements of Credit Risk Exposures under the IRB Approach

$ in millions							**As of December 2021**
		RWA amounts			**Capital requirements**		
		GSGUK	**GSI**	**GSIB**	**GSGUK**	**GSI**	**GSIB**
1	**RWAs as at the end of the previous reporting period**	**$ 30,461**	**$ 20,571**	**$ 11,295**	**$ 2,437**	**$ 1,646**	**$ 904**
2	Asset size	179	(68)	247	15	(5)	20
3	Asset quality	55	47	8	5	4	1
7	Foreign exchange movements	(309)	(258)	(51)	(25)	(21)	(4)
8	Other	111	118	(13)	8	9	(1)
9	**RWAs as at the end of the reporting period**	**$ 30,497**	**$ 20,410**	**$ 11,486**	**$ 2,440**	**$ 1,633**	**$ 920**

Credit Risk Mitigation

To reduce credit exposures on derivatives and securities financing transactions, we may enter into netting agreements with counterparties that permit the firm to offset receivables and payables with such counterparties. A netting agreement is a contract with a counterparty that permits net settlement of multiple transactions with that counterparty, including upon the exercise of termination rights by a non-defaulting party. Upon exercise of such termination rights, all transactions governed by the netting agreement are terminated and a net settlement amount is calculated.

We may also reduce credit risk with counterparties by entering into agreements that enable us to receive and post cash and securities collateral with respect to our derivatives and securities financing transactions, subject to the terms of the related credit support agreements or similar arrangements (collectively, credit support agreements). An enforceable credit support agreement grants the non-defaulting party exercising termination provisions the right to liquidate collateral and apply the proceeds to any amounts owed. In order to assess enforceability of our right to setoff under netting and credit support agreements, we evaluate various factors, including applicable bankruptcy laws, local statutes and regulatory provisions in the jurisdiction of the parties to the agreement. The collateral we hold consists primarily of cash and securities of high quality government bonds (mainly US and EU), subject to haircuts as deemed appropriate by the Credit Risk function. The function performs ongoing collateral monitoring, to ensure the firm maintains an appropriate level of diversification of collateral, and distribution of collateral quality.

Our collateral is managed by certain functions within the firm which review exposure calculations, make margin calls with relevant counterparties, and ensure subsequent settlement of collateral movements. We monitor the fair value of the collateral on a daily basis to ensure that our credit exposures are appropriately collateralised.

As of December 2021, the aggregate amounts of additional collateral or termination payments related to our net derivative liabilities under bilateral agreements that could have been called by our counterparties in the event of a one- and two-notch downgrade of our credit ratings are $118 million and $991 million respectively for GSI, and immaterial for GSIB.

For additional information about the firm’s derivatives (including collateral and the impact of the amount of collateral required in the event of a ratings downgrade), see “Note 7. Derivatives and Hedging Activities” in Part II, Item 8 “Financial Statements and Supplementary Data” in the firm’s 2021 Form 10-K. See “Note 11. Collateralized Agreements and Financings” in Part II, Item 8 “Financial Statements and Supplementary Data” in the firm’s 2021 Form 10-K for further information about collateralised agreements and financings.

For loans and lending commitments, depending on the credit quality of the borrower and other characteristics of the transaction, we employ a variety of potential risk mitigants. Risk mitigants include collateral provisions, guarantees, covenants, structural seniority of the bank loan claims and, for certain lending commitments, provisions in the legal documentation that allow us to adjust loan amounts, pricing, structure and other terms as market conditions change. The type and structure of risk mitigants employed can significantly influence the degree of credit risk involved in a loan or lending commitment.

When we do not have sufficient visibility into a counterparty’s financial strength or when we believe a counterparty requires support from its parent, we may obtain third-party guarantees of the counterparty’s obligations. The main types of guarantors are sovereigns, certain supranational and multilateral development banks, banks and other financial institutions. We may also mitigate our credit risk using credit derivatives or participation agreements.

The following three tables presents GSGUK, GSI and GSIB net carrying values of credit risk exposures secured by different CRM techniques as of December 31, 2021.

Table 15: CRM Techniques

GSGUK

$ in millions						As of December 2021
		Exposures unsecured – Carrying amount	**Exposures secured – Carrying amount**	**Exposures secured by collateral**	**Exposures secured by financial guarantees**	**Exposures secured by credit derivatives**
1	Total loans	$ 6,212	$4,617	$ 4,617	-	**-**
2	Total debt securities	$ 2,929	$1,489	$1,489	-	-
3	**Total exposures**	**$ 9,141**	**$ 6,106**	**$ 6,106**	**-**	**-**
4	Of which defaulted	$ 317	$ 8	$ 8	-	-

GSI

$ in millions						As of December 2021
		Exposures unsecured – Carrying amount	**Exposures secured – Carrying amount**	**Exposures secured by collateral**	**Exposures secured by financial guarantees**	**Exposures secured by credit derivatives**
1	Total loans	$ 1,425	-	-	-	-
2	Total debt securities	$ 366	-	-	-	-
3	**Total exposures**	**$ 1,791**	**-**	**-**	-	-
4	Of which defaulted	$ 88	-	-	-	-

GSIB

$ in millions						As of December 2021
		Exposures unsecured – Carrying amount	**Exposures secured – Carrying amount**	**Exposures secured by collateral**	**Exposures secured by financial guarantees**	**Exposures secured by credit derivatives**
1	Total loans	$ 4,355	$ 12,195	$ 11,690		$ 505
2	Total debt securities	$ 3,203	$ 1,489	$ 1,489		
3	**Total exposures**	**$ 7,558**	**$ 13,684**	**$ 13,179**	-	**$ 505**
4	Of which defaulted	-	$ 8	$ 8		-

The following table presents the impact of credit derivatives on the RWAs under the IRB approach for GSGUK, GSI and GSIB based on exposure class.

Table 16: IRB Approach - Effect on the RWAs of Credit Derivatives Used as CRM Techniques

$ in millions							As of December 2021
		Pre-Credit Derivatives RWAs			**Actual RWAs**		
		GSGUK	**GSI**	**GSIB**	**GSGUK**	**GSI**	**GSIB**
1	**Exposures under AIRB**						
2	Central governments and central banks	$ 4,832	$ 4,330	$ 502	$ 4,832	$ 4,330	$ 502
3	Institutions	$ 3,813	$ 3,419	$ 536	$ 3,813	$ 3,419	$ 536
6	Corporates – Other	$ 21,851	$ 12,661	$ 11,540	$ 21,851	$ 12,661	$ 10,447
12	Equity IRB	$ 2,001	$ 2,001	$ 0	$ 2,001	$ 2,001	$ 0
14	**Total**	**$ 32,497**	**$ 22,411**	**$ 12,578**	**$ 32,497**	**$ 22,411**	**$ 11,485**

Credit Derivatives

We enter into credit derivative transactions primarily to facilitate client activity and to manage the credit risk associated with market-making.

We also use credit derivatives to hedge counterparty exposure associated with investing and financing activities and to a lesser extent derivative exposure. Some of these hedges qualify as credit risk mitigants for regulatory capital purposes using the PD and LGD substitution approach (and subject to the regulatory haircuts for maturity and currency mismatch where applicable).

Where the aggregate notional of credit derivatives hedging exposure to a loan obligor is less than the notional loan exposure, the substitution approach is only employed for the percentage of loan exposure covered by eligible credit derivatives.

For further information regarding the firm's credit derivative transactions, see "Note 7. Derivatives and Hedging Activities" in Part II, Item 8 "Financial Statements and Supplementary Data" in the firm's 2021 Form 10-K.

For information regarding credit risk concentrations, see "Note 26. Credit Concentrations" in Part II, Item 8 "Financial Statements and Supplementary Data" in the firm's 2021 Form 10-K.

The following table presents GSGUK, GSI and GSIB exposure to credit derivatives based on notional and fair values as of December 31, 2021.

Table 17: Credit Derivatives Exposures

$ in millions									**As of December 2021**
	Credit derivative hedges								
	Protection bought			**Protection sold**			**Other credit derivatives**		
	GSGUK	**GSI**	**GSIB**	**GSGUK**	**GSI**	**GSIB**	**GSGUK**	**GSI**	**GSIB**
Notionals									
Index Credit Default Swaps	$ 377,546	$ 375,669	$ 1,876	$ 379,850	$ 378,422	$ 1,427	-	-	-
Total Return swaps	5,501	5,501	-	1,678	1,678	-	-	-	-
Other Credit Default Swaps	326,676	325,653	1,023	325,994	325,783	212	-	-	-
Other Credit Derivatives	-	-	-	-	-	-	254,862	254,702	160
Total notionals	**$ 709,723**	**$ 706,823**	**$ 2,899**	**$ 707,522**	**$ 705,883**	**$ 1,639**	**$ 254,862**	**$ 254,702**	**$ 160**
Fair values		**-**							
Positive fair value (asset)	**$ 6,822**	**$ 6,817**	**$ 5**	**$ 18,649**	**$ 18,615**	**$ 34**	**$ 6,062**	**$ 6,062**	**$ 0**
Negative fair value (liability)	**$ 18,842**	**$ 18,749**	**$ 93**	**$ 6,136**	**$ 6,059**	**$ 77**	**$ 3,556**	**$ 3,556**	**$ 0**

Wrong-way Risk

We seek to minimise risk where there is a significant positive correlation between the probability of default of a counterparty and our exposure to that counterparty (net of the market value of any collateral we receive), which is known as "wrong-way risk". Wrong-way risk is commonly categorised into two types: specific wrong-way risk and general wrong-way risk. We categorise exposure as specific wrong-way risk when the counterparty and the issuer of the reference asset of the transaction are the same entity or are affiliates, or if the collateral supporting a transaction is issued by the counterparty or its affiliates. General wrong-way risk arises when there is a significant positive correlation between the probability of default of a counterparty and general market risk factors affecting the exposure to that counterparty. We have procedures in place to actively identify, monitor and control specific and general wrong-way risk, beginning at the inception of a transaction and continuing through its life, including assessing the level of risk through stress tests. We ensure that material wrong-way risk is mitigated using collateral agreements or increases to initial margin, where appropriate.

Credit Valuation Adjustment Risk-Weighted Assets

RWAs for CVA address the risk of losses related to changes in counterparty credit risk arising from OTC derivatives. We calculate RWAs for CVA primarily using the Advanced CVA approach set out in CRR, which permits the use of regulator approved VaR models. Consistent with our Regulatory VaR calculation (see "Market Risk" for further details), the CVA RWAs are calculated at a 99% confidence level over a 10-day time horizon.

The CVA RWAs also include a stressed CVA component, which is also calculated at a 99% confidence level over a 10-day horizon using both a Stressed VaR period and stressed EEs. The CVA VaR model estimates the impact on our credit valuation adjustments of changes to our counterparties' credit spreads. It reflects eligible CVA hedges (as defined in CRR), but it excludes those hedges that, although used for risk-management purposes, are ineligible for inclusion in the regulatory CVA VaR model. Examples of such hedges are interest rate hedges, or those that do not reference the specific exposures they are intended to mitigate, but are nevertheless highly correlated to the underlying credit risk.

Other Credit Risk-Weighted Assets

Credit RWAs also include the following components:

Cleared Transactions

RWAs for cleared transactions and default fund contributions (defined as payments made by clearing members to central clearing agencies pursuant to mutualised loss arrangements) are calculated based on specific rules within CRR. A majority of our exposures on centrally cleared transactions are to counterparties that are considered to be Qualifying Central Counterparties (QCCPs) in accordance with the European Market Infrastructure Regulation (EMIR). Such exposures arise from OTC derivatives, exchange-traded derivatives, and securities financing transactions, which are required to be risk weighted at either 2% or 4% based on the specified criteria.

Retail Exposures

As of December 31, 2021, we have immaterial retail exposures (defined as residential mortgage exposures, qualifying revolving exposures, or other retail exposures that are managed as part of a segment of exposures with homogeneous risk characteristics, not on an individual exposure basis) subject to standardised risk weights.

Other Assets

Other assets primarily include property, leasehold improvements and equipment, deferred tax assets, and assets for which there is no defined capital methodology or that are not material. RWAs for other assets are generally based on the carrying value and are typically risk weighted at 100%.

Equity Exposures in the Banking Book

The firm makes investments, both directly and indirectly through funds that it manages, in public and private equity securities, as well as in debt securities and loans and real estate entities. The firm also enters into commitments to make such investments. These investments are typically longer-term in nature and are primarily held for capital appreciation purposes. Equity investments that are not consolidated are classified for regulatory capital purposes as banking book equity exposures. Equity exposures held in GSGUK's banking book are included in the Credit RWAs within row 5 of Table 8 and were not material as of December 31, 2021.

Past due exposures, impaired exposures and impairment provisions

Payments aged more than a threshold of 90 days on any material credit obligation to the company, 180 days on residential mortgage obligations or 120 days on other retail obligations are considered past due.

An exposure is considered impaired when it is probable that the borrower will be unable to pay all amounts due according to the contractual terms of the loan agreement. The firm's definition of unlikeliness to pay includes the distressed restructuring of an obligation, including bank loan obligations, that results in deferred or reduced payment to GS, whether or not counterparty is in bankruptcy, insolvency or local jurisdictional equivalent.

There are no instances for GSGUK, GSI or GSIB where past-due exposures are not considered to be impaired.

The allowance for impairment is determined using various risk factors, including industry default and loss data, current macroeconomic indicators, borrower's capacity to meet its financial obligations, borrower's country of risk, loan seniority and collateral type. In addition, for loans backed by real estate, risk factors include loan to value ratio, debt service ratio and home price index. The firm also records an allowance for losses on lending commitments that are held for investment and accounted for on an accrual basis. Such allowance is determined using the same methodology as the allowance for impairment, while also taking into consideration the probability of drawdowns or funding, and is included in other liabilities and accrued expenses. Additionally, loans are charged off against the impairment provision when deemed to be uncollectible.

For information on GSGUK's methodology for calculating expected credit losses measured in accordance with the provisions of IFRS 9, see "Impairment" in "Notes to the Consolidated Financial Information" in GSGUK's 2021 Consolidated Financial Information.

Securitisations

Overview

CRR defines certain activities as securitisation transactions which attract capital requirements under the "Securitisation Framework." A securitisation is defined as a transaction or scheme, whereby the credit risk associated with an exposure or pool of exposures is tranched, having both of the following characteristics:

- Payments in the transaction or scheme are dependent upon the performance of the exposure or pool of exposures; and
- The subordination of tranches determines the distribution of losses during the ongoing life of the transaction or scheme.

The rules also distinguish between traditional and synthetic securitisations, the primary difference being that a traditional securitisation involves the transfer of assets from a bank's balance sheet into a securitisation vehicle, whereas a synthetic securitisation involves the transfer of credit risk through credit derivatives or guarantees.

Within the GSGUK group, we securitise commercial mortgages, loans and other types of financial assets by selling these assets to securitisation vehicles (e.g., trusts and special purpose vehicles). GSGUK acts as underwriter of the beneficial interests that are sold to investors.

Beneficial interests issued by securitisation entities are debt or equity securities that give the investors rights to receive all or portions of specified cash inflows to a securitisation vehicle and include senior and subordinated interests in principal, interest and/or other cash inflows. The proceeds from the sale of beneficial interests are used to pay the transferor for the financial assets sold to the securitisation vehicle or to purchase securities which serve as collateral.

A portion of our positions that meet the regulatory definition of a securitisation are classified in our trading book, and capital requirements for these positions are calculated under the market risk capital rules. However, we also have certain banking book positions that meet the regulatory definition of a securitisation.

We account for a securitisation as a sale when we have relinquished control over the transferred financial assets. Prior to securitisation, we account for assets pending transfer at fair value and therefore do not typically recognise significant gains or losses upon the transfer of assets. GSGUK did not, as of December 31, 2021 have material assets held with the intent to securitise.

Liquidity risk associated with securitisations is consistently managed as part of the firm's overall liquidity risk management framework.

Banking Book Activity

Securitisation exposures in the banking book within the GSGUK group that meet the regulatory definition of a securitisation fall into the following categories:

- **Warehouse Financing and Lending**. We provide financing to clients who warehouse financial assets. These arrangements are secured by the warehoused assets, primarily consisting of corporate loans and asset-backed and other loans.
- **Other**. We have certain other banking book securitisation activities such as holding securities issued by securitisation vehicles.

By engaging in the banking book securitisation activities noted above, we are primarily exposed to credit risk and to the performance of the underlying assets.

Trading Book Activity

Our securitisation exposures classified as trading book comprise mortgage-backed securities (MBS) and other asset-backed securities (ABS), derivatives referencing MBS or ABS, or derivatives referencing indices of MBS or ABS, which are held in inventory. The population also includes credit correlation positions, which are discussed in the "Comprehensive Risk" section of the "Market Risk Management" chapter.

The primary risks included in beneficial interests and other interests from our involvement with securitisation vehicles are the performance of the underlying collateral, the position of our investment in the capital structure of the securitisation vehicle and the market yield for the security. These interests are accounted for at fair value and are incorporated into the overall risk management approach for financial instruments. For a detailed discussion of the firm's risk management process and practices, see "Risk Management – Market Risk Management" and "Risk Management – Credit Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K.

Calculation of Risk-Weighted Assets

The securitisation framework operates under a hierarchy of approaches which consists of three primary methods, the SEC-IRBA (Internal Ratings Based Approach), SEC-SA (Standardised Approach), and SEC-ERBA (External Ratings Based Approach). The External Credit Assessment Institutions (ECAIs) used for the SEC-ERBA are Standard & Poor's Ratings Services (S&P), Moody's Investors Service (Moody's) and Fitch, Inc. (Fitch) for all types of exposures. For trading and banking book positions we follow the hierarchy of RWA approaches. In the trading book only the correlation trading portfolio has approval to use SEC-IRBA.

The RWAs for securitisation positions are calculated by multiplying the exposure amount by the specific risk-weighting factors assigned. The exposure amount is defined as the carrying value for securities, or the market value of the effective notional of the instrument or indices underlying derivative positions. The securitisation capital requirements are capped at the maximum loss that could be incurred on any given transaction.

The following tables show our securitisation exposures by type of exposure and risk weight band as of December 31, 2021.

Table 18: Securitisation Exposures by Type

$ in millions	As of December 2021					
	Trading Book			Banking Book		
	On-balance-sheet Exposures Traditional	Off-balance-sheet Exposures Traditional	Total Exposure Amount	On-balance-sheet Exposures Traditional	Off-balance-sheet Exposures Traditional	Total Exposure Amount
Residential mortgages	$ 254	-	$ 254	$ 694	-	$ 694
Commercial mortgages	162	-	162	52	-	52
Corporates	-	-	-	27	6	33
Asset-backed and other	641	2,099	2,740	559	58	617
GSGUK Total	**$ 1,057**	**$ 2,099**	**$ 3,156**	**$ 1,332**	**$ 64**	**$ 1,396**

Table 19: Securitisation Exposures and Related RWAs by Risk Weight Bands

$ in millions	As of December 2021				
	Trading Book			Banking Book	
	Long Exposure Amount	Short Exposure Amount	Total RWAs	Exposure Amount	Total RWAs
0% - 25%	$ 249	$ 666	$ 141	$ 1,029	$ 157
26% - 100%	98	1,343	985	73	55
101% - 250%	86	104	298	222	329
251% - 650%	178	81	1,118	20	101
651% - 1,250%	229	122	3,784	51	565
GSGUK Total	**$ 840**	**$ 2,316**	**$ 6,326**	**$ 1,395**	**$ 1,207**

Market Risk

Overview

Market risk is the risk of loss in the value of inventory, investments, loans and other financial assets and liabilities accounted for at fair value, due to changes in market conditions. Categories of market risk include the following:

- Interest rate risk: results from exposures to changes in the level, slope and curvature of yield curves, the volatilities of interest rates, prepayment speeds and credit spreads;
- Equity price risk: results from exposures to changes in prices and volatilities of individual equities, baskets of equities and equity indices;
- Currency rate risk: results from exposures to changes in spot prices, forward prices and volatilities of currency rates; and
- Commodity price risk: results from exposures to changes in spot prices, forward prices and volatilities of commodities, such as crude oil, petroleum products, natural gas, electricity, and precious and base metals.

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

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. These managers have in-depth knowledge of their positions, markets and the instruments available to hedge their exposures.

Market Risk Management Process

The firm's process for managing market risk includes the critical components of the risk management framework described in the "Risk Management – Overview and Structure of Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K, as well as the following:

- Monitoring compliance with established market risk limits and reporting our exposures;
- Diversifying exposures;
- Controlling position sizes; and
- Evaluating mitigants, such as economic hedges in related securities or derivatives.

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 product, business and firmwide levels. For further information about the firm's market risk measures and risk limits, see "Risk Management – Market Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the 2021 Form 10-K.

Market Risk-Weighted Assets

Trading book positions are subject to market risk capital requirements which are designed to cover the risk of loss in value of these positions due to changes in market conditions. These capital requirements are determined either by applying prescribed risk weighting factors, in accordance with the standardised approach, or they are based on internal models which are subject to various qualitative and quantitative parameters. The CRR market risk capital rules require that a company obtains prior written permission from its regulators before using any internal model to calculate its risk-based capital requirement. GSI has permission to calculate capital requirements using internal models, while GSIB and other entities within the U.K. group calculate capital requirements using the standardised approach. GSGUK consolidated requirements are calculated based on the requirements and the approach used within each subsidiary.

For positions captured by GSI's model permission, the capital requirements for market risk are calculated using the following internal models: Value-at-Risk (VaR), Stressed VaR (SVaR), Incremental Risk Charge (IRC), and Comprehensive Risk Measure (CRM), which for PRA purposes is called the All Price Risk Measure (APRM) and is subject to a floor. In addition, Standardised Rules, in accordance with Title IV of Part Three of CRR, are used to calculate capital requirements 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. RWA for market risk are the sum of each of these measures multiplied by 12.5. An overview of each of these measures is provided below.

Regulatory VaR

VaR is the potential loss in value of trading assets and liabilities, as well as certain investments, loans, and other financial assets and liabilities accounted for at fair value, due to adverse market movements over a defined time horizon with a specified confidence level. For both risk management purposes (positions subject to VaR limits) and regulatory capital calculations, the firm uses a single VaR model which captures risks, including those related to interest rates, equity prices, currency rates and commodity prices. As such, VaR facilitates comparison across portfolios of different risk characteristics. VaR also captures the diversification of aggregated risk at the firmwide level.

VaR used for risk management purposes differs from VaR used for regulatory capital requirements (Regulatory VaR) due to differences in time horizons, confidence levels and the scope of positions on which VaR is calculated. For risk management purposes, a 95% one-day VaR is used, whereas for regulatory capital requirements, a 99% 10-day VaR is used to determine Market RWAs and a 99% one-day VaR is used to determine Regulatory VaR exceptions. The 10-day VaR is based on scaling the 1-day VaR by the square root of 10. Moreover, Regulatory VaR is multiplied by a scaler to obtain an effective observation period of at least one year as per CRR market risk regulatory capital requirements.

VaR is calculated daily using historical simulations with full valuation of market factors, capturing both general and specific market risk. VaR is calculated at a positional level based on simultaneously shocking the relevant market risk factors for that position, using a mix of absolute and relative returns. We sample from five years of historical data to generate the scenarios for our VaR calculation. The historical data is weighted so that the relative importance of data reduces over time. This gives greater importance to more recent observations and reflects current asset volatilities.

In accordance with the CRR market risk regulatory capital requirements, we evaluate the accuracy of our Regulatory VaR model through daily backtesting. The results of the backtesting determine the size of the Regulatory VaR multiplier used to compute RWAs.

Table 20 presents our period end, maximum, minimum and average daily GSGUK and GSI 99% 10-day Regulatory VaR over the six-month period ended December 2021.

Stressed VaR

SVaR is the potential loss in value of trading assets and liabilities, as well as certain investments, loans, and other financial assets and liabilities accounted for at fair value, during a period of significant market stress. SVaR is based on a full valuation at a 99% confidence level over a 10-day horizon using market data inputs from a continuous 12-month period of stress. The 10-day SVaR is calculated as the 1-day SVaR scaled by the square root of 10. We identify the stressed period by comparing VaR using market data inputs from different historical periods.

Table 20 presents our period end, maximum, minimum and average weekly GSGUK and GSI 99% 10-day SVaR over the six-month period ended December 2021.

Incremental Risk

Incremental risk is the potential loss in value of non-securitised positions due to the default or credit migration of issuers of financial instruments over a one-year time horizon. As required by the CRR market risk regulatory capital rules, this measure is calculated at a 99.9% confidence level over a one-year time horizon. The model is based on the assumption of a constant level of risk. The model uses a multifactor approach to simulate correlated rating migration and default events, and takes into account various characteristics, including region, industry, basis between different products, credit quality and maturity of the debt. The liquidity horizons are determined based on the speed at which issuer exposures can be reduced by hedging or unwinding, given our experience during a historical stress period, and the prescribed regulatory minimum. The average liquidity horizon for GSI as of December 2021 was 3 months.

Table 20 presents our period end, maximum, minimum and average of the weekly GSGUK and GSI Incremental Risk measure over the six-month period ended December 2021.

Comprehensive Risk

Comprehensive risk is the potential loss in value, due to price risk and defaults, within credit correlation positions. A credit correlation position is defined as a securitisation position for which all or substantially all of the value of the underlying exposures is based on the credit quality of a single company for which a two-way market exists, or indices based on such exposures for which a two-way market exists, or hedges of these positions).

As required under the CRR market risk capital rules, the Comprehensive Risk Measure comprises a model-based measure, which is subject to a floor based on the minimum capital requirement of 8% of RWA calculated under the standard rules for the portfolio. The model-based measure is calculated at a 99.9% confidence level over a one-year time horizon applying a constant level of risk. The model comprehensively covers price risks including nonlinear price effects and takes into account contractual structure of cash flows, the effect of multiple defaults, credit spread risk, volatility of implied correlation, recovery rate volatility and basis risk. The liquidity horizon is based upon our experience during a historical stress period, subject to the prescribed regulatory minimum.

Table 20 presents the period end, maximum, minimum and average of the GSGUK and GSI Comprehensive Risk Measure for the over the six-month period ended December 2021.

Table 20: IMA Values for Trading Portfolios

$ in millions		As of December 2021	
		GSGUK	**GSI**
VaR (10 day 99%)			
1	Maximum value	**364**	**364**
2	Average value	**240**	**240**
3	Minimum value	**171**	**171**
4	Period end	**224**	**224**
SVaR (10 day 99%)			
5	Maximum value	**682**	**682**
6	Average value	**572**	**572**
7	Minimum value	**454**	**454**
8	Period end	**502**	**502**
IRC (99.9%)			
9	Maximum value	**501**	**501**
10	Average value	**205**	**205**
11	Minimum value	**67**	**67**
12	Period end	**90**	**90**
Comprehensive risk capital charge (99.9%)			
13	Maximum value	**202**	**202**
14	Average value	**131**	**131**
15	Minimum value	**87**	**87**
16	Period end	**172**	**172**

Table 21: Market Risk under the IMA

The table below presents the capital requirements and RWA under the IMA for Market Risk as of December 31, 2021.

$ in millions				As of December 2021	
		RWAs		Capital requirements	
		GSGUK	GSI	GSGUK	GSI
1	**VaR (higher of values a and b)**	**$ 9,342**	**$ 9,342**	**$ 747**	**$ 747**
(a)	Previous day's VaR (Article 365(1) of the CRR (VaRt-1))			224	224
(b)	Average of the daily VaR (Article 365(1)) of the CRR on each of the preceding 60 business days (VaRavg) x multiplication factor (mc) in accordance with Article 366 of the CRR			747	747
2	**SVaR (higher of values a and b)**	**$ 19,433**	**$ 19,433**	**$ 1,555**	**$ 1,555**
(a)	Latest SVaR (Article 365(2) of the CRR (SVaRt-1))			502	502
(b)	Average of the SVaR (Article 365(2) of the CRR) during the preceding 60 business days (SVaRavg) x multiplication factor (ms) (Article 366 of the CRR)			1,555	1,555
3	**IRC (higher of values a and b)**	**$ 1,749**	**$ 1,749**	**$ 140**	**$ 140**
(a)	Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 of the CRR)			90	90
(b)	Average of the IRC number over the preceding 12 weeks			140	140
4	**Comprehensive risk measure (higher of values a, b and c)**	**$ 2,149**	**$ 2,149**	**$ 172**	**$ 172**
(a)	Most recent risk number for the correlation trading portfolio (Article 377 of the CRR)			172	172
(b)	Average of the risk number for the correlation trading portfolio over the preceding 12 weeks			162	162
(c)	8% of the own funds requirement in the standardised approach on the most recent risk number for the correlation trading portfolio (Article 338(4) of the CRR)			66	66
5	**Other**	**$ 19,558**	**$ 19,558**	**$ 1,565**	**$ 1,565**
6	**Total**	**$ 52,231**	**$ 52,231**	**$ 4,179**	**$ 4,179**

Table 22: RWA Flow Statements of Market Risk Exposures under the IMA

GSGUK

$ in millions								As of December 2021
		VaR	**SVaR**	**IRC**	**Comprehensive risk measure**	**Other**	**Total RWAs**	**Total capital requirements**
1	**RWAs at previous quarter end**	**$ 8,946**	**$ 22,918**	**$ 3,271**	**$ 1,536**	**$ 19,106**	**$ 55,777**	**$ 4,462**
1a	*Regulatory adjustment*	(6,036)	(14,980)	(2,259)	-	(5,845)	(29,120)	(2,329)
1b	***RWAs at the previous quarter-end***	**$ 2,910**	**$ 7,938**	**$ 1,012**	**$ 1,536**	**$ 13,261**	**$ 26,657**	**$ 2,133**
2	Movement in risk levels	(125)	(1,756)	113	613	(2,045)	(3,200)	(256)
3	Model updates/changes	12	94	-	-	-	106	8
8a	***RWAs at the end of the reporting period***	**$ 2,797**	**$ 6,276**	**$ 1,125**	**$ 2,149**	**$ 11,216**	**$ 23,563**	**$ 1,885**
8b	*Regulatory adjustment*	6,545	13,157	624	-	8,342	28,668	2,294
8	**RWAs at the end of the reporting period**	**$ 9,342**	**$ 19,433**	**$ 1,749**	**$ 2,149**	**$ 19,558**	**$ 52,231**	**$ 4,179**

GSI

$ in millions								As of December 2021
		VaR	**SVaR**	**IRC**	**Comprehensive risk measure**	**Other**	**Total RWAs**	**Total capital requirements**
1	**RWAs at previous quarter end**	**$ 8,946**	**$ 22,918**	**$ 3,271**	**$ 1,536**	**$ 19,106**	**$ 55,777**	**$ 4,462**
1a	*Regulatory adjustment*	(6,036)	(14,980)	(2,259)	-	(5,845)	(29,120)	(2,329)
1b	***RWAs at the previous quarter-end***	**$ 2,910**	**$ 7,938**	**$ 1,012**	**$ 1,536**	**$ 13,261**	**$ 26,657**	**$ 2,133**
2	Movement in risk levels	(125)	(1,756)	113	613	(2,045)	(3,200)	(256)
3	Model updates/changes	12	94	-	-	-	106	8
8a	***RWAs at the end of the reporting period***	**$ 2,797**	**$ 6,276**	**$ 1,125**	**$ 2,149**	**$ 11,216**	**$ 23,563**	**$ 1,885**
8b	*Regulatory adjustment*	6,545	13,157	624	-	8,342	28,668	2,294
8	**RWAs at the end of the reporting period**	**$ 9,342**	**$ 19,433**	**$ 1,749**	**$ 2,149**	**$ 19,558**	**$ 52,231**	**$ 4,179**

Model Review and Validation

The models discussed above, which are used to determine Regulatory VaR, SVaR, Incremental risk and Comprehensive risk, are independently reviewed, validated and approved by Model Risk.

These models are regularly reviewed and enhanced in order to incorporate changes in the composition of positions included in market risk measures, as well as variations in market conditions. Prior to implementing significant changes to our assumptions and/or models, Model Risk performs model validations. Significant changes to VaR and stress testing models are reviewed with the firm's chief market risk officer, and approved by the Risk Governance Committee.

Regulatory VaR Backtesting Results

As required by the CRR market risk capital rules, we validate the accuracy of our Regulatory VaR models by backtesting the output of such models against daily loss results. The number of exceptions (that is, the higher of the number of overshootings based on comparing the positional or actual losses to the corresponding 99% one-day Regulatory VaR) over the most recent 250 business days is used to determine the size of the VaR multiplier, which could increase from a minimum of three to a maximum of four, depending on the number of exceptions.

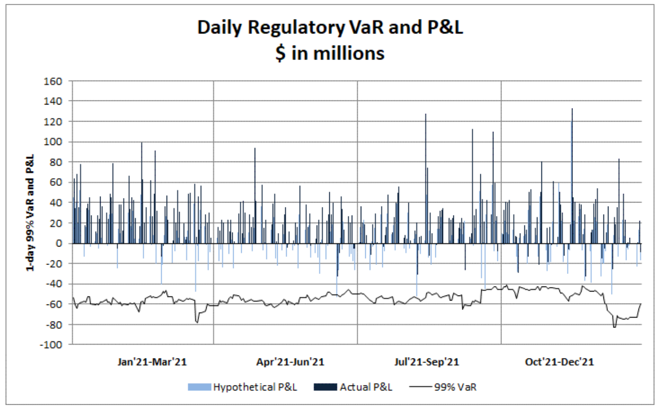
As defined in the CRR market risk capital rules, hypothetical net revenues for any given day represent the impact of that day's price variation on the value of positions held at the close of business the previous day. As a consequence, these results exclude certain revenues associated with market-making businesses, such as bid/offer net revenues, which are more likely than not to be positive by their nature. In addition, hypothetical net revenues used in our Regulatory VaR backtesting relate only to positions which are included in Regulatory VaR and, as noted above, differ from positions included in our risk management VaR. This measure of hypothetical net revenues is used to evaluate the performance of the Regulatory VaR model and is not comparable to our actual daily net revenues. See "Risk Management — Market Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K.

GSI hypothetical losses observed on a single day exceeded our 99% one-day Regulatory VaR once during the twelve months preceding December 2021. This exceedance was discounted by the PRA from the calculation of the IMA backtesting multiplier. GSI actual losses observed on a single day did not exceed our 99% one-day Regulatory VaR during the twelve months preceding December 2021. Note that, although a one-day time horizon is used for backtesting purposes, a 10-day time horizon is used, as described earlier, to determine RWAs associated with Regulatory VaR.

The tables below present our 99% one-day Regulatory VaR and hypothetical and actual PnL during the previous twelve months.

Table 23: Comparison of VaR estimates with gains/losses

GSI



The table below summarizes the number of reported excesses for GSI for the previous twelve months.

	Multiplier	Number of reported excesses: Hypothetical	Number of reported excesses: Actual
Backtesting			
GSI	3.00	0	0

Stress Testing

Stress testing is a method of determining the effect of various hypothetical stress scenarios on the firm and GSI and GSIB individually. Stress testing is used to examine risks of specific portfolios as well as the potential impact of significant risk exposures across GSI and GSIB. A variety of stress testing techniques is used to calculate the potential loss from a wide range of market moves on portfolios, including firmwide stress tests, sensitivity analysis and scenario analysis.

For a detailed description of the firm's stress testing practices, see "Risk Management – Market Risk Management – Risk Measures – Stress Testing" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 10-K.

The table below presents the components of own funds requirements under the standardised approach as of December 31, 2021.

Table 24: Market Risk under the Standardised Approach

$ in millions **As of December 2021**

		RWAs			Capital Requirements		
		GSGUK	**GSI**	**GSIB**	**GSGUK**	**GSI**	**GSIB**
	Outright products						
1	Interest rate risk (general and specific)	$ 43,968	$ 41,767	$ 2,201	$ 3,517	$ 3,341	$ 176
2	Equity risk (general and specific)	3,397	3,336	61	272	267	5
3	Foreign exchange risk	2,459	2,040	248	197	164	20
4	Commodity risk	2,010	672	-	161	54	-
4a	Collective investment undertakings	2,073	2,073	-	166	166	-
	Options						
6	Delta-plus method	17	17	0	1	1	0
7	Scenario approach	3,153	3,142	11	252	251	1
8	Securitisation (specific risk)	6,326	6,326	-	506	506	-
9	**Total**	**$ 63,403**	**$ 59,373**	**$ 2,521**	**$ 5,072**	**$ 4,750**	**$ 202**

Interest Rate Sensitivity

Interest Rate Risk in the Trading Book

Our exposure to interest rate risk in our trading book arises mostly from positions held to support client market-making activities. These positions are accounted for at fair value and the interest rate risk is monitored as a component of Market risk. For additional information regarding interest rate risk, see "Risk Management – Market Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K.

Interest Rate Risk in the Banking Book

Our exposure to interest rate risk in the banking book (IRRBB) arises from differences in interest earned or paid as interest rates change, due to the reset characteristics of our assets and liabilities. IRRBB risk in GSIB is mainly driven by deposit taking activities via our digital deposit platform (Marcus by Goldman Sachs) and may increase further as our lending and deposit taking activities continue to expand. However, our banking book activities' exposure to movements in interest rates remains immaterial for GSGUK as at December 31, 2021.

For further information regarding asset-liability management, see "Risk Management – Liquidity Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K.

Operational Risk

Overview

Operational risk is the risk of an adverse outcome resulting from inadequate or failed internal processes, people, systems or from external events. The firm'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:

- Clients, products and business practices;
- Execution, delivery and process management;
- Business disruption and system failures;
- Employment practices and workplace safety;
- Damage to physical assets;
- Internal fraud; and
- External fraud.

Operational Risk, which is independent of the firm's revenue-producing units and reports to the firm'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 the firm's exposure to operational risk at levels that are within its risk appetite. GSGUK's framework for managing operational risk is consistent with and part of GS Group's framework

Operational Risk Management Process

The firm's process for managing operational risk includes the critical components of the risk management framework described in "Risk Management – Overview and Structure of Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2021 Form 10-K including a comprehensive data collection process, as well as firmwide policies and procedures, for operational risk events.

The firm combines top-down and bottom-up approaches to manage and measure operational risk. From a top-down perspective, senior management assesses firmwide 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 to senior management.

The firm maintains 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 the company's operational risk, and for ensuring our business and operational resilience.

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

The firm has established policies that require all employees to report and escalate operational risk events.When operational risk events are identified, the 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.

The firm uses operational risk management applications to capture, analyse, aggregate and report operational risk event data and key metrics. One of the key risk identification and assessment tools is an operational risk and control self-assessment process, which is performed by the firm'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 firm measures operational risk exposure using both statistical modelling and scenario analyses, which involves qualitative and quantitative assessments of internal and external operational risk event data and internal control factors for each of our businesses. Operational risk measurement also incorporates an assessment of business environment factors, including:

- Evaluations of the complexity of business activities;
- The degree of automation in our processes;
- New activity information;
- The legal and regulatory environment; and
- Changes in the markets for our products and services, including the diversity and sophistication of our customers and counterparties.

The results from these scenario analyses are used to monitor changes in operational risk and to determine business lines that may have heightened exposure to operational risk. These analyses are used in the determination of the appropriate level of operational risk capital to hold.

Model Review and Validation

The models used to measure operational risk exposure are independently reviewed, validated and approved by Model Risk. See "Model Risk" for further information.

Capital Requirements

The consolidated operational risk capital requirements for GSGUK, GSI and GSIB are calculated under the Standardised Approach in accordance with the CRR.

Table 25: Operational Risk Capital Requirement

$ in millions	As of December 2021		
	GSGUK	**GSI**	**GSIB**
Standardised Approach	$ 1,898	$ 1,671	$ 66

Model Risk

Overview

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

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

The firm's model risk management framework is managed through a governance structure and risk management controls, which encompass standards designed to ensure we maintain a comprehensive model inventory, including risk assessment and classification, sound model development practices, independent review and model-specific usage controls. The Firmwide Model Risk Control Committee oversees 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 firm's models. This review includes an analysis of the model documentation, assumptions, input and output data, limitations and uncertainties, independent testing, an assessment of the appropriateness of the methodology used, verification of compliance with model development and implementation standards, and assessment of adequacy of the ongoing monitoring plan.

The firm regularly refines and enhances 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 their assumptions in order to critically evaluate and verify the model's conceptual soundness, suitability of calculation techniques, accuracy and sensitivity to input parameters and assumptions, as well as the scope of testing performed by the model developers.

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

Asset Encumbrance

Overview

Asset encumbrance refers to the pledging or use of an asset as a means to secure, collateralise or credit-enhance any on-balance-sheet or off-balance-sheet transaction from which it cannot be freely withdrawn. The majority of our encumbrance is driven by secured financing activities, which include transactions in repo, securities lending, facilitation of short positions (customer and GSGUK) and collateral swaps. The remaining encumbrance is driven by derivatives trading. A portion of GSGUK's assets are encumbered in currencies other than US Dollars. Asset encumbrance is an integral part of GSGUK's liquidity, funding and collateral management process.

The tables in this section identify components of our encumbered and unencumbered assets for the period ended December 31, 2021. All numbers in the tables are based on the applicable accounting standards and median values are computed over the preceding 4 quarterly data points[1].

Table 26: Encumbered and Unencumbered Assets

	Carrying Amount of Encumbered Assets		Fair Value of Encumbered Assets		Carrying Amount of Unencumbered Assets		Fair Value of Unencumbered Assets	
$ in millions		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA
Assets of the Reporting Institution [2]	**136,291**	**27,821**	**N/a[2]**	**N/a[2]**	**1,074,569**	**49,832**	**N/a[2]**	**N/a[2]**

1. The figures in Table 27 are a subset of Assets of the Reporting Institution in Table 26
2. Cells are marked N/a to indicate those components which are not reportable

[1] Median values are calculated using the following 4 month-end values – March 2021, June 2021, September 2021 and December 2021

Table 27: Components of Encumbered and Unencumbered Assets[1]

	Carrying Amount of Encumbered Assets		Fair Value of Encumbered Assets		Carrying Amount of Unencumbered assets		Fair Value of Unencumbered Assets	
$ in millions		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA
Equity Instruments[3]	**44,726**	**2,032**	**N/a[2]**	**N/a[2]**	**9,926**	**194**	**N/a[2]**	**N/a[2]**
Debt Securities[3]	**36,758**	**25,557**	**36,758**	**25,557**	**10,723**	**5,397**	**10,723**	**5,397**
of which: covered bonds	**518**	**504**	**518**	**504**	**7**	**7**	**7**	**7**
of which: asset-backed securities	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
of which: issued by general governments	**24,700**	**22,425**	**24,700**	**22,425**	**8,967**	**5,281**	**8,967**	**5,281**
of which: issued by financial corporations[6]	**5,104**	**342**	**5,104**	**342**	**1,172**	**5**	**1,172**	**5**
of which: issued by non-financial corporations	**6,221**	**2,419**	**6,221**	**2,419**	**662**	**155**	**662**	**155**
Other Assets	**55,062[4]**	**-**	**N/a[2]**	**N/a[2]**	**1,054,620[5]**	**44,221**	**N/a[2]**	**N/a[2]**

1. The figures in Table 27 are a subset of Assets of the Reporting Institution in Table 26
2. Cells are marked N/a to indicate those components which are not reportable
3. Fair value is the same as carrying value for Debt Securities
4. Encumbered Other Assets includes cash encumbered for derivatives margin and on-balance-sheet cash that has been segregated under the FCA's Client Assets Sourcebook (CASS)
5. The majority of unencumbered Other Assets relate to derivative instruments
6. HQLA balances reported in this row mainly comprise of securities issued by Multinational Development Banks and Public Sector Enterprises

The firm receives securities collateral in respect of securities purchased under agreement to resell, secured borrowings, margin loans and derivatives. The tables below break down securities collateral received into the portion which has been treated as encumbered and the portion which is available for encumbrance.

Table 28: Collateral Received

	Fair Value of Encumbered Collateral Received or Own Debt Securities Issued		Fair Value of Collateral Received or Own Debt Securities Issued Available for Encumbrance	
$ in millions		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA
Collateral Received by the Reporting Institution[1,2]	**645,795**	**403,399**	**92,587**	**46,638**

1. The figures shown in Table 29 are a subset of Collateral Received by the Reporting Institution in Table 28
2. Collateral Received by the Reporting Institution does not include cash collateral which is included as an on-balance-sheet asset in Tables 26 and 27

Table 29: Components of Collateral Received[1]

$ in millions	Fair Value of Encumbered Collateral Received or Own Debt Securities Issued		Fair Value of Collateral Received or Own Debt Securities Issued Available for Encumbrance	
		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA
Loans on Demand	**-**	**-**	**-**	**-**
Equity Instruments	**238,635**	**36,973**	**24,733**	**1,877**
Debt Securities	**406,337**	**366,426**	**67,962**	**44,671**
of which: covered bonds	**156**	**154**	**30**	**29**
of which: asset-backed securities	**34**	**-**	**132**	**--**
of which: issued by general governments	**377,050**	**362,318**	**44,548**	**43,160**
of which: issued by financial corporations[3]	**11,212**	**1,106**	**9,231**	**31**
of which: issued by non-financial corporations	**17,917**	**3,486**	**13,673**	**1,452**
Loans and advances other than loans on demand	**-**	**-**	**50**	**-**
Other Collateral Received	**192**	**-**	**-**	**-**
Own Debt Securities Issued other than Own Covered Bonds or ABSs	**-**	**-**	**-**	**-**
Own Covered Bonds and Asset-Backed Securities issued and not yet pledged	**N/a[2]**	**N/a[2]**	**-**	**-**
Total Assets, Collateral received and Own Debt Securities Issued	**785,323**	**433,046**	**N/a[2]**	**N/a[2]**

1. The figures shown in Table 29 are a subset of Collateral Received by the Reporting Institution in Table 28
2. Cells are marked N/a to indicate those components which are not reportable
3. HQLA balances reported in this row mainly comprise of securities issued by Multinational Development Banks and Public Sector Enterprises

The table below shows the extent to which liabilities have been matched to encumbered assets.

Table 30: Sources of Encumbrance

$ in millions	Matching Liabilities, Contingent Liabilities or Securities Lent	Assets, Collateral Received and Own Debt Securities Issued other than Covered Bonds and ABSs Encumbered
Carrying amount of selected financial liabilities[1]	**837,095**	**317,000**
Other Sources of Encumbrance	**397,516**	**434,943**

1. There may be a mismatch between liabilities and encumbered assets and collateral received driven by the accounting standards presentation of derivatives

Commentary

In this disclosure, derivative instruments are reported in accordance with the applicable accounting standards. In addition, total assets include collateralised lending where the receivable is reported as a balance sheet assets in Table 26 and 27 and the underlying collateral received is reported in Tables 28 and 29 resulting in double counting of these assets.

GSGUK primarily adopts standard collateral agreements and collateralises based on industry standard contractual agreements (mostly Credit Support Annexes (CSA) and Global Master Repurchase Agreements (GMRAs)). The rights and obligations on collateral posted to counterparties for derivatives are dependent on the counterparty and the nature and jurisdiction of the CSA. Derivative liabilities are collateralised primarily using G10 currencies and government bonds.

Liquidity Risk

Overview

GSGUK is subject to the liquidity requirements as set out in the CRR with regard to liquidity coverage requirement for credit institutions and other applicable guidelines. When we use the term "liquidity standards", we refer to the aforementioned regulations. The liquidity standards set forth minimum liquidity levels designed to ensure that credit institutions and investment firms maintain adequate amount of liquid assets to withstand a 30 calendar-day stress scenario. This information should be read in conjunction with Group Inc.'s most recent Annual Report on Form 10-K for the year ended December 31, 2021.

Liquidity Risk Management

Liquidity risk is the risk that we will be unable to fund GSGUK or meet our liquidity needs in the event of firm-specific, broader industry or market liquidity stress events. We have in place a comprehensive and conservative set of liquidity and funding policies. Our principal objective is to be able to fund GSGUK and to enable our core businesses to continue to serve clients and generate revenues, even under adverse circumstances.

We manage 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.

Treasury, which reports to our chief financial officer, has primary responsibility for developing, managing and executing our liquidity and funding strategy within our risk appetite.

Liquidity Risk, which is independent of our revenue-producing units and Treasury, and reports to our chief risk officer, has primary responsibility for assessing, monitoring and managing our liquidity risk through firmwide oversight 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.

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

Based on the results of our internal liquidity risk models, as well as consideration of other factors including, but not limited to, an assessment of our potential intraday liquidity needs and a qualitative assessment of the condition of the financial markets and GSGUK, we believe that our liquidity position as of December 31, 2021 was appropriate.

For information about Group Inc.'s internal Liquidity Risk Management framework, see "Risk Management – Liquidity Risk Management" in Part I, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's Annual Report on Form 10-K.

Compliance with Liquidity Requirements

The PRA guidelines require that a firm maintains LCR that is no less than 100%. In addition, the PRA may require a firm to hold additional liquidity for risks not covered in the LCR, referred to as Pillar 2 risks. A firm's HQLA is expected to be available for use to address liquidity needs in a time of stress, which could result in a firm's LCR dropping below the applicable requirement. The liquidity standards also set forth a supervisory framework for addressing LCR shortfalls that is intended to enable supervisors to monitor and respond appropriately to the unique circumstances that give rise to a firm's LCR shortfall.

This information is based on our current interpretation and understanding of the liquidity standards and the guidelines on LCR Disclosure and may evolve as we discuss the interpretation and application of these rules with our regulators. Table 37 (lines 1 through 23) presents GSGUK's LCR in the format provided in the guidelines on LCR Disclosure. Tables 31 through 36 present a supplemental breakdown of GSGUK's LCR components. Tables 38 and 39 present a summarised disclosure template for Goldman Sachs International (GSI) and Goldman Sachs International Bank (GSIB), respectively.

Liquidity Coverage Ratio

The liquidity standards require a firm to maintain an amount of high-quality liquid assets (HQLA) sufficient to meet stressed net cash outflows (NCOs) over a prospective 30 calendar-day period. The LCR is calculated as the ratio of HQLA to NCOs.

The table below presents a summary of our trailing twelve month average monthly LCR for the period ended December 31,2021.

Table 31: Liquidity Coverage Ratio

$ in millions	Twelve Months Ended December 2021
	Average Weighted
Total high-quality liquid assets	$90,374
Net cash outflows	$46,561
Liquidity coverage ratio[1]	195%

1. The ratio reported in this row are calculated as the average of the monthly LCRs for the trailing twelve months and may not equal the calculation of the ratios using components amounts reported in "Total high-quality liquid assets" and "Net Cash Outflows".

In the table above, the average weighted Total HQLA balance reflects the application of haircuts prescribed in the liquidity standards as described in the HQLA section.

The average weighted Total HQLA held by GSGUK is expected to meet the liquidity requirements set out in the LCR Delegated Act as well as the additional requirements set by the PRA to cover Pillar 2 risks.

GSGUK's average monthly LCR for the trailing twelve-month period ended December 2021 was 195%. The NCOs largely consist of prospective outflows related to GSGUK's secured and unsecured funding, derivative positions and unfunded commitments. We expect business-as-usual fluctuations in our client activity, business mix and overall market environment to affect our average LCR on an ongoing basis.

See "High-Quality Liquid Assets" and "Net Cash Outflows" for further information about GSGUK's LCR.

High-Quality Liquid Assets

Total HQLA represents unencumbered, high-quality liquid assets held by a firm. The liquidity standards define HQLA in three asset categories: Level 1, Level 2A and Level 2B, and applies haircuts and limits to certain asset categories.

Level 1 assets are considered the most liquid and are eligible for inclusion in a firm's HQLA amount without a haircut or limit. Level 2A and 2B assets are considered less liquid than Level 1 assets and are subject to additional adjustments as prescribed in the liquidity standards. In addition, the sum of Level 2A and 2B assets cannot comprise more than 40% of a firm's HQLA amount, and Level 2B assets cannot comprise more than 15% of a firm's HQLA amount.

Table 31 presents a summary of the weighted average Total HQLA held by GSGUK, calculated in accordance with the liquidity standards.

Our HQLA substantially consists of Level 1 assets and is diversified across our major operating currencies. Our HQLA is also substantially similar in composition to our GCLA.

For information about Group Inc.'s GCLA, see "Risk Management – Liquidity Risk Management" in Part I, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's Annual Report on Form 10-K.

Net Cash Outflows

Overview

The liquidity standards define NCOs as the net of cash outflows and inflows during a prospective stress period of 30 calendar days. NCOs are calculated by applying prescribed outflow and inflow rates to certain assets, liabilities and off-balance-sheet arrangements. These outflow and inflow rates reflect a specific standardised stress scenario to a firm's funding sources, contractual obligations and assets over the prospective stress period, as prescribed by the liquidity standards. Due to the inherently uncertain and variable nature of stress events, a firm's actual cash outflows and inflows in a realised liquidity stress event may differ, possibly materially, from those reflected in a firm's NCOs.

To capture outflows and inflows that would occur within a 30 calendar-day period, the liquidity standards require that a firm's NCOs calculation reflects outflows and inflows based on the contractual maturity of certain assets, liabilities and off-balance-sheet arrangements. To determine the maturity date of outflows, the liquidity standards account for any option that could accelerate the maturity date of an instrument or the date of a transaction. Where contractual maturity is not applicable, the liquidity standards also set forth stressed outflow assumptions. In addition, the liquidity standards require a firm to recognise contractual outflows within a 30 calendar-day period that are not otherwise described in the liquidity standards and to not recognise inflows not specified in the liquidity standards. The inflows included in the NCOs calculation are subject to a cap of 75% of a firm's calculated outflows.

Table 31 above presents a summary of GSGUK's NCOs, calculated in accordance with the liquidity standards.

More details on each of the material components of our NCOs, including a description of the applicable sections of the liquidity standards, are described below.

In the tables referenced in the remainder of this section, unweighted balances reflect certain GSGUK's assets, liabilities and off-balance-sheet arrangements captured in the liquidity standards. Weighted balances reflect the application of prescribed outflow and inflow rates to these unweighted balances.

Unsecured and Secured Financing

Overview

Our primary sources of funding are deposits, collateralised financings, unsecured short-term and long-term borrowings (including funding from Group Inc. and affiliates), and shareholders' equity. We seek to maintain broad and diversified funding sources globally across products, programs, markets, currencies and creditors to avoid funding concentrations.

For information about Group Inc.'s funding sources, see "Balance Sheet and Funding Sources" in Part I, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's Annual Report on Form 10-K.

Unsecured Net Cash Outflows

GSGUK's unsecured funding consists of a number of different products, including:

- Debt securities issued, which includes notes, certificates, and warrants; and
- Savings, demand and time deposits from consumers and institutional clients and through internal and third-party broker-dealers.

GSGUK's unsecured debt and deposits are a source of funding for inventory, lending activity and other assets, including a portion of our liquid assets.

The liquidity standards require that the NCOs calculation reflects a firm's upcoming maturities of unsecured long-term debt and other unsecured funding products during a 30 calendar-day period, assuming no roll over of debt that matures.

The liquidity standards also prescribe outflows related to a partial loss of retail, small business, and wholesale deposits.

Inflows from deposits placed with agent banks and lending activity are included as part of "Inflows from fully performing exposures" (see Table 32).

The table below presents a summary of GSGUK's NCOs related to our unsecured borrowing and lending activity, calculated in accordance with the liquidity standards.

Table 32: Unsecured Net Cash Outflows

$ in millions	**Twelve Months Ended December 2021**	
	Average Unweighted	**Average Weighted**
Outflows		
Retail deposits and deposits from small business customers, of which:	**$32,105**	**$4,862**
Stable deposits	**0**	**0**
Less stable deposits	**31,943**	**4,862**
Unsecured wholesale funding, of which:	**35,674**	**31,373**
Non-operational deposits	**30,432**	**26,131**
Unsecured debt	**5,242**	**5,242**
Inflows		
Inflows from fully performing exposures	**3,104**	**522**
Net unsecured cash outflows/(inflows)[2]	**$64,648**	**$35,713**

2. Net unsecured cash outflows/(inflows) reflects the subtraction of the inflow amounts from the outflow amounts shown in the table above and is included for illustrative purposes.

Secured Net Cash Outflows

GSGUK funds a significant amount of inventory on a secured basis, including repurchase agreements, securities loaned and other secured financings. In addition, we provide financing to our clients for their securities trading activities, as well as securities lending and other prime brokerage services.

The liquidity standards consider outflows and inflows related to secured funding and securities services together as part of "Secured wholesale funding" and "Secured lending" (see Table 33).

Specifically, under the liquidity standards, secured funding transactions include repurchase agreements, collateralised deposits, securities lending transactions and other secured wholesale funding arrangements. Secured lending transactions, as defined under the liquidity standards, include reverse repurchase transactions, margin loans, securities borrowing transactions and secured loans.

The standardised stress scenario prescribed in the liquidity standards applies outflow and inflow rates between 0-100% to secured funding and lending transactions. Specific outflow and inflow rates are based on factors such as the quality of the underlying collateral, as well as the type, tenor, and counterparty of a transaction.

The table below presents a summary of GSGUK's NCOs related to our secured funding and lending activity, calculated in accordance with the liquidity standards.

Table 33: Secured Net Cash Outflows

$ in millions	Twelve Months Ended December 2021	
	Average Unweighted	**Average Weighted**
Outflows		
Secured wholesale funding		**$40,808**
Inflows		
Secured lending	**$370,131**	**103,749**
Net secured cash outflows/(inflows)[3]		**$(62,941)**

[3] Net secured cash outflows/(inflows) reflects the subtraction of the inflow amounts from the outflow amount shown in the table above and is included for illustrative purposes.

Derivatives

Overview

Derivatives are instruments that derive their value from underlying asset prices, indices, reference rates and other inputs, or a combination of these factors. Derivatives may be traded on an exchange or they may be privately negotiated contracts, which are usually referred to as OTC derivatives. Certain OTC derivatives are cleared and settled through central clearing counterparties, while others are bilateral contracts between two counterparties.

- **Market-Making.** As a market maker, GSGUK enters into derivative transactions to provide liquidity to clients and to facilitate the transfer and hedging of their risks. In this role, we typically act as principal and are required to commit capital to provide execution, and maintain inventory in response to, or in anticipation of, client demand.

- **Risk Management.** GSGUK also enters into derivatives to actively manage risk exposures that arise from its market-making and investing and lending activities in derivative and cash instruments. Our holdings and exposures are hedged, in many cases, on either a portfolio or risk-specific basis, as opposed to an instrument-by-instrument basis. In addition, the firm may enter into derivatives that are used to manage interest rate exposure in certain fixed-rate unsecured long-term and short-term borrowings, and deposits.

We enter into various types of derivatives, including futures, forwards, swaps and options.

For information about Group Inc.'s derivative exposures and hedging activities, see Note 7 "Derivatives and Hedging Activities" in Part II, Item 8 "Financial Statements and Supplementary Data" in the firm's Annual Report on Form 10-K.

Derivative Net Cash Outflows

The liquidity standards require that derivative NCOs reflect outflows and inflows resulting from contractual settlements related to derivative transactions occurring over a 30 calendar-day period. These outflows and inflows can generally be netted at a counterparty level if subject to a valid qualifying master netting agreement. In addition, the liquidity standards require that NCOs reflect certain contingent outflows related to a firm's derivative positions that may arise during a 30 calendar-day stress scenario, including:

- Incremental collateral required as a result of a change in a firm's financial condition;

- Legal right of substitution of collateral posted to a firm for less liquid or non-HQLA collateral;

- Collateral required as a result of market movements. The liquidity standards require that a firm reflects in its NCOs calculation the absolute value of the largest net cumulative collateral outflow or inflow in a 30 calendar-day period over the last two years; and

- Excess collateral greater than the current collateral requirement under the governing contract that a firm may be contractually required to return to counterparty.

In the table below, "Outflows related to derivative exposures and other collateral requirements" reflects contractual derivative settlements, as well as contingent derivative outflows, calculated in accordance with the liquidity standards. Inflows from contractual derivative settlements are reflected in "Other cash inflows" (see Table 36). The liquidity standards do not recognise contingent derivative inflows.

The table below presents a summary of the GSGUK's derivative NCOs, calculated in accordance with the liquidity standards.

Table 34: Derivative Net Cash Outflows

$ in millions	Twelve Months Ended December 2021	
	Average Unweighted	**Average Weighted**
Outflows related to derivative exposures and other collateral requirements	**$24,256**	**$22,442**

Unfunded Commitments

Overview

GSGUK's commercial lending activities include lending to investment-grade and non-investment-grade corporate borrowers. Such commitments include commitments related to relationship lending activities (principally used for operating and general corporate purposes) and related to other investment banking activities (generally extended for contingent acquisition financing and are often intended to be short-term in nature, as borrowers often seek to replace them with other funding sources). The firm also extends lending commitments in connection with other types of corporate lending, as well as commercial real estate financing and retail lending.

In addition, the firm provides financing to clients who warehouse financial assets. These arrangements are secured by the warehoused assets, primarily consisting of residential real estate, consumer and corporate loans.

Unfunded Commitments Net Cash Outflows

The liquidity standards apply outflow rates to the undrawn portion of committed credit and liquidity facilities that a firm has extended based on counterparty type and purpose. The undrawn portion is defined as the amount of the facility that could be drawn upon within 30 calendar days under the governing agreement, less the fair value of any liquid assets that serve as collateral, after recognising the applicable haircut for those assets. Commitments extended to non-financial sector corporates are prescribed an outflow rate of 10-30%, insurance sector entities an outflow rate of 40-100%, credit institutions an outflow rate of 40% and all others an outflow rate of 100%.

The table below presents a summary of GSGUK's NCOs related to our unfunded commitments, calculated in accordance with the liquidity standards.

Table 35: Unfunded Commitments Net Cash Outflows

$ in millions	Twelve Months Ended December 2021	
	Average Unweighted	**Average Weighted**
Credit and liquidity facilities	**$8,415**	**$4,388**

Other Net Cash Outflows

The table below presents a summary of GSGUK's other cash outflows and inflows, including, but not limited to, overnight and term funding from Group Inc. and affiliates, derivative inflows, unsettled inventory balances, loans of collateral to effect customer short sales and other prime brokerage services.

Table 36: Other Net Cash Outflows

$ in millions	Twelve Months Ended December 2021	
	Average Unweighted	**Average Weighted**
Outflows		
Other contractual obligations	**$105,775**	**$22,728**
Other contingent funding obligations	**84,512**	**58,234**
Inflows		
Other cash inflows	**41,078**	**41,078**
Net other cash outflows/(inflows)[4]	**$149,209**	**$39,884**

4 Net other cash outflows/(inflows) reflects the subtraction of the inflow amounts from the outflow amounts shown in the table above and is included for illustrative purposes.

Table 37: GSGUK Liquidity Coverage Ratio Summary

	Scope of consolidation (Consolidated)	Total Unweighted Value				Total Weighted Value			
	Currency and units ($ in millions)								
	Period ended	March 2021	June 2021	September 2021	December 2021	March 2021	June 2021	September 2021	December 2021
	Number of data points used in the calculation of averages	12	12	12	12	12	12	12	12
	HIGH-QUALITY LIQUID ASSETS								
1	Total high-quality liquid assets (HQLA)					81,274	82,318	85,698	90,374
	CASH – OUTFLOWS								
2	Retail deposits and deposits from small business customers, of which:	29,748	30,846	31,351	32,105	4,509	4,680	4,756	4,862
3	*Stable deposits*	70	36	0	0	3	2	0	0
4	*Less stable deposits*	29,516	30,665	31,208	31,943	4,506	4,678	4,756	4,862
5	Unsecured wholesale funding	28,389	31,098	33,934	35,674	23,802	26,518	29,532	31,373
6	*Operational deposits (all counterparties) and deposits in networks of cooperative banks*	0	0	0	0	0	0	0	0
7	*Non-operational deposits (all counterparties)*	24,894	26,803	28,903	30,432	20,308	22,222	24,501	26,131
8	*Unsecured debt*	3,494	4,295	5,032	5,242	3,494	4,295	5,032	5,242
9	Secured wholesale funding					30,002	34,366	36,808	40,808
10	Additional requirements	36,167	34,863	33,541	32,671	30,125	29,119	27,937	26,831
11	*Outflows related to derivative exposures and other collateral requirements*	28,201	26,405	24,966	24,256	26,763	25,275	23,686	22,442
12	*Outflows related to loss of funding on debt products*	0	0	0	0	0	0	0	0
13	*Credit and liquidity facilities*	7,966	8,458	8,575	8,415	3,361	3,844	4,251	4,388
14	Other contractual funding obligations	81,510	87,891	95,049	105,775	20,401	21,288	21,963	22,728
15	Other contingent funding obligations	61,203	68,644	75,004	84,512	41,111	46,667	51,567	58,234
16	**TOTAL CASH OUTFLOWS**					149,949	162,637	172,563	184,835
	CASH – INFLOWS								
17	Secured lending (e.g. reverse repos)	283,786	309,288	332,801	370,131	74,915	85,622	93,991	103,749
18	Inflows from fully performing exposures	4,245	3,935	3,747	3,104	1,895	1,493	1,065	522
19	Other cash inflows	32,561	35,363	38,963	41,078	32,561	35,363	38,963	41,078
EU-19a	(Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)					0	0	0	0
EU-19b	(Excess inflows from a related specialised credit institution)					0	0	0	0
20	**TOTAL CASH INFLOWS**	320,592	348,586	375,512	414,313	109,371	122,477	134,019	145,349
EU-20a	***Fully exempt inflows***	0	0	0	0	0	0	0	0
EU-20b	***Inflows Subject to 90% Cap***	0	0	0	0	0	0	0	0
EU-20c	***Inflows Subject to 75% Cap***	262,214	286,488	309,174	346,527	109,371	122,477	134,019	145,349
						TOTAL ADJUSTED VALUE			
21	**LIQUIDITY BUFFER**[5]					81,274	82,318	85,698	90,374
22	**TOTAL NET CASH OUTFLOWS**[5]					41,431	45,058	43,926	46,561
23	**LIQUIDITY COVERAGE RATIO (%)**[6]					197%	191%	195%	195%

[5] The amounts reported in these rows may not equal the calculation of those amounts using component amounts reported in rows 1-20 due to technical factors such as the application of the Level 2 liquid asset caps and the total inflow cap.

[6] The ratios reported in this row are calculated as average of the monthly LCR's for the trailing twelve months and may not equal the calculation of ratios using component amounts reported in rows 21 and 22.

Table 38: GSI Liquidity Coverage Ratio Summary

Scope of consolidation (Solo)	Total Weighted Value			
Currency and units ($ in millions)				
Period ended	**March 2021**	**June 2021**	**September 2021**	**December 2021**
Number of data points used in the calculation of averages	**12**	**12**	**12**	**12**
LIQUIDITY BUFFER	64,287	64,999	68,460	72,485
TOTAL NET CASH OUTFLOWS	34,461	37,160	39,515	43,287
LIQUIDITY COVERAGE RATIO (%)[7]	188%	176%	174%	168%

[7] The ratios reported in this row are calculated as average of the monthly LCR's for the trailing twelve months and may not equal the calculation of ratios using component amounts reported in rows Liquidity Buffer & Total Net Cash Outflows.

Table 39: GSIB Liquidity Coverage Ratio Summary

Scope of consolidation (Solo)	Total Weighted Value			
Currency and units ($ in millions)				
Period ended	**March 2021**	**June 2021**	**September 2021**	**December 2021**
Number of data points used in the calculation of averages	**12**	**12**	**12**	**12**
LIQUIDITY BUFFER	16,986	17,319	17,238	17,889
TOTAL NET CASH OUTFLOWS	12,179	12,449	12,106	12,199
LIQUIDITY COVERAGE RATIO (%)[8]	140%	139%	143%	147%

[8] The ratios reported in this row are calculated as average of the monthly LCR's for the trailing twelve months and may not equal the calculation of ratios using component amounts reported in rows Liquidity Buffer & Total Net Cash Outflows.

Leverage Ratio

The company is subject to the leverage ratio framework established by the PRA. 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.

In October 2021, the framework was revised to set a minimum leverage ratio requirement at 3.25% that is expected to apply from January 1, 2023.

The table below presents a breakdown of the leverage ratio for GSGUK and its significant subsidiaries, GSI and GSIB as of 31 December 2021 as per the current framework.

Table 40: Leverage Ratio

$ in millions	As of December 2021		
	GSGUK	**GSI**	**GSIB**
Tier 1 Capital	$ 42,277	$ 37,110	$ 3,408
Leverage Ratio Exposure	$ 950,265	$ 892,611	$ 53,247
Leverage Ratio	**4.4%**	**4.2%**	**6.4%**

The following tables present further information on the leverage ratio. Table 41 reconciles the exposure measure to the balance sheets of GSGUK, GSI and GSIB. Table 42 breaks down the exposures from on-balance sheet assets by trading and banking book. Table 43 gives further details on the adjustments and drivers of the leverage ratio.

Table 41: Summary Reconciliation of Accounting Assets and Leverage Ratio Exposures

$ in millions	**As of December 2021**		
	GSGUK	**GSI**	**GSIB**
Total assets as per balance sheet	**$ 1,195,789**	**$ 1,143,420**	**$ 86,508**
Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	-	-	-
Adjustment for fiduciary assets recognised on the balance sheet pursuant to the applicable accounting framework but excluded from the leverage ratio exposure measure in accordance with Article 429(13) of Regulation (EU) No 575/2013 "CRR"	-	-	-
Adjustments for derivative financial instruments[1]	(275,689)	(276,639)	744
Adjustments for securities financing transactions[1]	23,884	24,299	5,775
Adjustment for off-balance sheet items [1]	7,851	4,431	3,421
Adjustment for intragroup exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (7) of Regulation (EU) No 575/2013[1]	-	(1,263)	(36,844)
Adjustment for exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (14) of Regulation (EU) No 575/2013	-	-	-
Other adjustments	(1,570)	(1,637)	(6,357)
Total leverage ratio exposure	**$ 950,265**	**$ 892,611**	**$ 53,247**

1. Differences between the accounting values recognised as assets on the balance sheet and the leverage ratio exposure values. A further breakdown of these amounts can be found in Table 43.

Table 42: On-Balance Sheet Exposures

$ in millions	**As of December 2021**		
	GSGUK	**GSI**	**GSIB**
Total on-balance sheet exposures[1] (excluding derivatives, SFTs, and exempted exposures), of which:	**$ 235,422**	**$ 201,494**	**$ 30,243**
Trading book exposures	**$ 141,830**	**$ 132,644**	**$ 7,921**
Banking book exposures, of which:	**$ 93,592**	**$ 68,850**	**$ 22,322**
Covered bonds	-	-	-
Exposures treated as sovereigns	62,657	49,583	13,073
Exposures to regional governments, MDB, international organisations and PSE not treated as sovereigns	-	-	-
Institutions	11,973	8,210	1,873
Secured by mortgages of immovable properties	108	-	47
Retail exposures	96	-	10
Corporate	14,441	9,944	5,892
Exposures in default	325	88	8
Other exposures	3,992	1,025	1,419

Table 43: Leverage Ratio Common Disclosure

$ in millions	As of December 2021		
	GSGUK	**GSI**	**GSIB**
On-balance sheet exposures (excluding derivatives and SFTs)			
On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	$ 269,910	$ 235,910	$ 36,832
Asset amounts deducted in determining Tier 1 capital	(1,570)	(1,545)	(22)
Total on-balance sheet exposures[1] (excluding derivatives, SFTs and fiduciary assets)	**$ 268,340**	**$ 234,365**	**$ 36,810**
Derivative exposures			
Replacement cost associated with all derivatives transactions (ie net of eligible cash variation margin)	37,684	36,919	312
Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	309,976	309,979	1,224
Exposure determined under Original Exposure Method	-	-	-
Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework	-	-	-
Deductions of receivables assets for cash variation margin provided in derivatives transactions	(33,536)	(33,451)	(85)
Exempted CCP leg of client-cleared trade exposures	(9,320)	(9,320)	-
Adjusted effective notional amount of written credit derivatives	823,759	822,040	1,719
Adjusted effective notional offsets and add-on deductions for written credit derivatives	(768,828)	(767,110)	(1,719)
Total derivative exposures	**$ 359,735**	**$ 359,057**	**$ 1,451**
Securities financing transaction exposures			
Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	414,678	395,688	49,229
Netted amounts of cash payables and cash receivables of gross SFT assets	(124,223)	(123,966)	(257)
Counterparty credit risk exposure for SFT assets	23,884	24,299	5,775
Derogation for SFTs: Counterparty credit risk exposure in accordance with Article 429b (4) and 222 of Regulation (EU) No 575/2013	-	-	-
Agent transaction exposures	-	-	-
Exempted CCP leg of client-cleared SFT exposure	-	-	-
Total securities financing transaction exposures	**$ 314,339**	**$ 296,021**	**$ 54,747**
Other off-balance sheet exposures			
Off-balance sheet exposures at gross notional amount	35,593	19,871	15,723
Adjustments for conversion to credit equivalent amounts	(27,742)	(15,440)	(12,302)
Other off-balance sheet exposures	**$ 7,851**	**$ 4,431**	**$ 3,421**
Exempted exposures in accordance with CRR Article 429 (7) and (14) (on and off balance sheet)			
Exemption of intragroup exposures (solo basis) in accordance with Article 429(7) of Regulation (EU) No 575/2013 (on and off balance sheet)	-	(1,263)	(43,182)
Exposures exempted in accordance with Article 429 (14) of Regulation (EU) No 575/2013 (on and off balance sheet)	-	-	-
Capital and total exposures			
Tier 1 capital	$ 42,277	$ 37,110	$ 3,412
Total leverage ratio exposures	**$ 950,265**	**$ 892,611**	**$ 53,247**
Leverage ratio			
Leverage ratio	**4.4%**	**4.2%**	**6.4%**
Choice on transitional arrangements and amount of derecognised fiduciary items			
Choice on transitional arrangements for the definition of the capital measure	-	-	-
Amount of derecognised fiduciary items in accordance with Article 429(11) of Regulation (EU) No 575/2013	-	-	-

[1] The On Balance Sheet Exposures in Table 43 include cash collateral posted on derivative which is excluded from Table 42 in accordance with the European Commission Implementing Regulation (EU) 2016/200

Factors impacting the Leverage Ratio

The leverage ratio has decreased from 4.5% as of June 2021 to 4.4% as of December 2021. This was primarily due to an increase in on balance sheet exposures partially offset by decrease in off balance sheet exposure.

Risk of Excessive Leverage

The risk of excessive leverage is the risk resulting from a vulnerability due to leverage or contingent leverage that may require unintended corrective measures to our business plan, including distressed selling of assets which might result in losses or in valuation adjustments to our remaining assets.

The GSI and GSIB Asset and Liability Committees (GSI and GSIB ALCOs) are the primary governance committees for the management of the UK material subsidiaries' balance sheets, and are responsible for maintaining leverage ratios in accordance with the levels expressed in each entity's risk appetite statement.

We monitor the leverage ratio as calculated above and have processes in place to dynamically manage our assets and liabilities. These processes include:

- Monthly leverage ratio monitoring is conducted for GSI and GSIB. Leverage ratio monitoring thresholds have been established for GSI and GSIB and reported to the respective ALCOs, CROs, CFOs, CEOs, Risk Committees and Boards depending on size of movement.
- Quarterly leverage ratio planning which combines our projected leverage ratio assets (on- and off-balance sheet) and Tier 1 capital of GSGUK, GSI and GSIB.
- Potential new transactions which could have a material impact on GSGUK's capital and/or leverage position are escalated to and approved by Corporate Treasury, and by Controllers and other managers from independent control and support functions.

Capital Adequacy

Overview

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

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

Internal Capital Adequacy Assessment Process

We perform an ICAAP with the objective of ensuring that GSGUK is appropriately capitalised relative to the risks in our business. The ICAAP is a comprehensive assessment of the risks to which we are or may be exposed and covers both the risks for which we consider capital to be an appropriate mitigant, and those for which we consider mitigants other than capital to be appropriate.

As part of our ICAAP, we perform an internal risk-based capital assessment. We evaluate capital adequacy based on the result of our internal risk-based capital assessment, which includes the results of stress tests, and our regulatory capital ratios. Stress testing is an integral component of our ICAAP. It is designed to measure our estimated performance under various stressed market conditions and assists us in analysing whether GSGUK holds an appropriate amount of capital relative to the risks of our businesses. Our goal is to hold sufficient capital to ensure we remain adequately capitalised after experiencing a severe stress event. Our assessment of capital adequacy is viewed in tandem with our assessment of liquidity adequacy and is integrated into our overall risk management structure, governance and policy framework.

Own Funds Template

The table below presents further information on the detailed capital position of GSGUK, GSI and GSIB, in accordance with the format prescribed by the Commission Implementing Regulation (EU) No 1423/2013.

Table 44: Own Funds Disclosure

$ in millions	As of December 2021		
	GSGUK	**GSI**	**GSIB**
Capital instruments and the related share premium accounts	$ 2,523	$ 6,166	$ 2,157
Paid up capital instruments	2,135	598	63
Share premium	388	5,568	2,094
Retained earnings	33,054	24,591	1,419
Accumulated other comprehensive income (and other reserves, to include unrealised gains and losses under the applicable accounting standards)	204	(162)	(74)
Less unaudited profit for the financial period	-	-	-
Common Equity Tier 1 (CET1) capital before regulatory adjustments	**$ 35,781**	**$ 30,595**	**$ 3,502**
Additional value adjustments	(663)	(638)	(9)
Intangible assets	(174)	(168)	(6)
Negative amounts resulting from the calculation of expected loss amounts	(687)	(705)	(69)
Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	(5)	(16)	11
Deferred tax assets	(17)	-	(17)
Defined-benefit pension fund assets	(172)	(172)	-
Other adjustments[1]	(86)	(86)	-
Total regulatory adjustments to Common equity Tier 1 (CET1)	**$ (1,804)**	**$ (1,785)**	**$ (90)**
Common Equity Tier 1 (CET1) capital	**$ 33,977**	**$ 28,810**	**$ 3,412**
Additional Tier 1 (AT1) capital	**8,300**	**8,300**	**-**
Tier 1 capital (T1 = CET1 + AT1)	**$ 42,277**	**$ 37,110**	**$ 3,412**
Capital instruments and the related share premium accounts	6,503	5,377	826
Qualifying own funds instruments included in consolidated T2 capital issued by subsidiaries and held by third parties	-	-	-
Of which: Instruments issued by subsidiaries subject to phase out	-	-	-
Non qualifying T2 capital instruments	-	-	-
Tier 2 (T2) capital before regulatory adjustments	**$ 6,503**	**$ 5,377**	**$ 826**
Other deductions	**-**	**-**	**-**
Tier 2 (T2) capital	**$ 6,503**	**$ 5,377**	**$ 826**
Total capital (TC = T1 + T2)	**$ 48,780**	**$ 42,487**	**$ 4,238**
Total risk weighted assets	**$ 293,306**	**$ 269,762**	**$ 17,262**
Common Equity Tier 1 (as a percentage of risk exposure amount)	11.6%	10.7%	19.8%
Tier 1 (as a percentage of risk exposure amount)	14.4%	13.8%	19.8%
Total capital (as a percentage of risk exposure amount)	16.6%	15.7%	24.5%
Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus the systemically important institution buffer (G-SII or O-SII buffer), expressed as a percentage of risk exposure amount)	7.04%	7.05%	7.05%
Of which: Capital conservation buffer requirement	2.50%	2.50%	2.50%
Of which: Counter cyclical buffer requirement	0.05%	0.05%	0.05%
Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	7.1%	6.2%	15.3%
Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	$ 1,133	$ 1,071	-
Direct and indirect holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	-	-	-

1. Other Adjustments include regulatory deductions for foreseeable charges applicable to profits recognised as of December 2021

Countercyclical Capital Buffer Template

The following tables present information on the impact of the countercyclical capital buffer as prescribed under CRR Article 440 which came into force from January 1, 2017.

Table 45: Countercyclical Capital Buffer

$ in millions	As of December 2021		
	GSGUK	**GSI**	**GSIB**
Total risk exposure amount	**$ 293,306**	**$ 269,762**	**$ 17,262**
Countercyclical buffer rate	**0.05%**	**0.05%**	**0.05%**
Countercyclical buffer requirement	**147**	**126**	**9**

The geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer is broken down in Table 46.

As of December 31, 2021 the Financial Policy Committee (FPC) had recognised exposures of U.K. institutions from Norway, Hong Kong, Czech Republic, Slovakia, Ireland, France, Bulgaria, Luxembourg in addition to the UK as implemented in the calculation of this buffer. These are shown as separate rows below with their respective contributions to own funds requirements for GSGUK, GSI and GSIB.

On March 11, 2020, the Bank of England announced that it has reduced the UK countercyclical capital buffer from 1% to 0% of banks' exposures to U.K. borrowers and counterparties with effect from March 11, 2020, reducing the company's buffer by approximately 0.20%. The rate is expected to revert back to 1% from 13 December 2022.

Table 46: Geographical Distribution of Credit Exposures Relevant for the Calculation of the Buffer

$ in millions — **As of December 2021**

	General credit exposures		Trading book exposure[1]		Securitisation exposure		Own funds requirements					
Breakdown by Country	**Exposure value for SA**	**Exposure value for IRB**	**Sum of long and short position of trading book**	**Value of trading book exposure for internal models**	**Exposure value for SA**	**Exposure value for IRB**	**Of which: General credit exposures**	**Of which: Trading book exposures**	**Of which: Securiti-sation exposures**	**Total**	**Own funds requirement weights**	**Counter-cyclical capital buffer rate**
Norway	-	$ 348	$ 1	$ 113	-	-	$ 15	$ 0	-	$ 15	1.2%	1.00%
Sweden	-	815	25	1,048	-	-	31	4	-	35	2.8%	0.00%
Hong Kong	-	504	96	2,759	-	-	41	4	-	45	3.6%	1.00%
Czech Republic	-	272	-	66	-	-	13	0	-	13	1.0%	0.50%
Iceland	-	4	-	11	-	-	1	1	-	2	0.1%	0.00%
Slovakia	-	339	-	2	-	-	12	0	-	12	0.9%	1.00%
United Kingdom	2,304	15,728	82,200	1,484,301	-	870	1,373	794	74	2,241	179.3%	0.00%
Lithuania	-	0	-	2	-	-	0	0	-	0	0.0%	0.00%
Denmark	-	509	0	72	-	-	34	2	-	36	2.9%	0.00%
Ireland	-	4,125	839	1,386	-	-	271	212	-	483	38.6%	0.00%
France	10	2,134	197	10,444	-	-	77	34	-	111	8.9%	0.00%
Bulgaria	-	-	0	0	-	-	-	0	-	0	0.0%	0.50%
Luxembourg	400	9,570	206	512	-	-	623	24	-	647	51.8%	0.50%
Other	1,099	55,339	20,603	598,097	-	526	3,490	896	23	4,409	352.8%	0.00%
GSGUK Total	**$ 3,813**	**$ 89,687**	**$ 104,167**	**$ 2,098,813**	**-**	**$ 1,396**	**$ 5,981**	**$ 1,971**	**$ 97**	**$ 8,049**	**644.0%**	**0.05%**
Norway	-	348	1	113	-	-	15	0	-	15	1.2%	1.00%
Sweden	-	806	25	1,048	-	-	30	4	-	34	2.7%	0.00%
Hong Kong	-	443	96	2,759	-	-	36	4	-	40	3.2%	1.00%
Czech Republic	-	272	-	66	-	-	13	0	-	13	1.0%	0.50%
Iceland	-	4	-	11	-	-	1	1	-	2	0.1%	0.00%
Slovakia	-	339	-	2	-	-	12	0	-	12	0.9%	1.00%
United Kingdom	1,560	14,164	82,124	1,484,301	-	-	1,121	788	-	1,909	152.7%	0.00%

Lithuania	-	0	-	2	-	-	0	0	-	0	0.0%	0.00%
Denmark	-	507	0	72	-	-	34	2	-	36	2.9%	0.00%
Ireland	-	3,764	839	1,386	-	-	233	212	-	445	35.6%	0.00%
France	-	1,798	197	10,444	-	-	64	34	-	98	7.8%	0.00%
Bulgaria	-	-	0	0	-	-	-	0	-	0	0.0%	0.50%
Luxembourg		7,269	95	512			488	11		499	39.9%	0.50%
Other	-	50,027	20,568	598,097	-	-	2,914	894	-	3,808	304.6%	0.00%
GSI Total	**$ 1,560**	**$ 79,741**	**$ 103,945**	**$ 2,098,813**	**-**	**-**	**$ 4,961**	**$ 1,950**	**-**	**$ 6,911**	**552.8%**	**0.05%**
Norway	-	0	0	-	-	-	0	0	-	0	0.0%	1.00%
Sweden	-	9	-	-	-	-	1	-	-	1	0.0%	0.00%
Hong Kong	-	61	-	-	-	-	5	-	-	5	0.4%	1.00%
Czech Republic	-	-	-	-	-	-	-	-	-	-	0.0%	0.50%
Iceland	-	-	-	-	-	-	-	-	-	-	0.0%	0.00%
Slovakia	-	-	-	-	-	-	-	-	-	-	0.0%	1.00%
United Kingdom	102	3,184	76	-	-	870	290	6	74	370	29.6%	0.00%
Lithuania	-	-	-	-	-	-	-	-	-	-	0.0%	0.00%
Denmark	-	2	-	-	-	-	0	-	-	0	0.0%	0.00%
Ireland	-	361	0	-	-	-	37	0	-	37	3.0%	0.00%
France	-	337	0	-	-	-	12	0	-	12	1.0%	0.00%
Bulgaria	-	-	-	-	-	-	-	-	-	-	0.0%	0.50%
Luxembourg	-	2,301	111	-			88	13		101	8.1%	0.50%
Other	63	5,333	35	-	-	526	476	3	23	502	40.1%	0.00%
GSIB Total	**$ 165**	**$ 11,588**	**$ 222**	**-**	**-**	**$ 1,396**	**$ 909**	**$ 22**	**$ 97**	**$ 1,028**	**82.2%**	**0.05%**

1. The value of trading book exposures for both internal models and standard approach has been reported on a gross basis in line with the reporting requirements however does not form the basis for the capital calculation.

Capital and MREL Instruments

The following table summarises the main features of capital and MREL instruments for GSGUK as of December 2021.

Table 47: GSGUK Capital and MREL Instruments' Main Features Template

$ in millions								As of December 2021
Issuer	GSGUK	GSGUK	GSGUK	GSGUK	GSGUK	GSGUK	GSGUK	GSGUK
Unique Identifier (e.g. CUSIP, ISIN, or Bloomberg identifier for private placement)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Public or private placement	Private placement	Private placement	Private placement	Private placement	Private placement	Private placement	N/A	N/A
Governing law(s) of the instrument	UK	UK	UK	UK	UK	UK	UK	UK
Contractual recognition of write down and conversion powers of resolution authorities	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Transitional CRR rules	CET1	Additional Tier 1	Tier 2	Tier 2	Tier 2	Tier 2	Eligible Liability	Eligible Liability
Post-transitional CRR rules	CET1	Additional Tier 1	Tier 2	Tier 2	Tier 2	Tier 2	Eligible Liability	Eligible Liability
Eligible at solo/(sub-) consolidated/solo&(sub-) consolidated	Consolidated	Consolidated	Consolidated	Consolidated	Consolidated	Consolidated	Consolidated	Consolidated
Instrument type	Ordinary Shares	Deeply Subordinated Undated Additional Tier 1 Notes	Preference Shares	Preference Shares	Subordinated Debt	Subordinated Debt	Senior debt	Senior debt
Amount recognised in regulatory capital	2,135	8,300	300	2,000	3,528	675	0	0
Nominal amount of instrument	2,135	3,000; 2,800; 2,500	300	2,000	3,528	675	14,576	7,100
Issue Price	2,135	$1,000,000 per Note	$1.00 per Preference Share	$1.00 per Preference Share	3,528	675	14,576	7,100
Redemption Price	2,135	$1,000,000 per Note	$1.00 per Preference Share	$1.00 per Preference Share	3,528	675	14,576	7,100
Accounting Classification	Shareholders' Equity	Shareholders' Equity	Amortised Cost	Amortised Cost	Amortised Cost	Amortised Cost	Amortised Cost	Amortised Cost
Original date of issuance[1]	Aug 20, 2013	June 27, 2017; June 28, 2017; November 28, 2018	June 27, 2018	July 11, 2019	Aug 1, 2005	Mar 20, 2013	Mar 6, 2012	Jan 21, 2020
Perpetual or dated	Perpetual	Perpetual	Dated	Dated	Dated	Dated	Dated	Dated
Original maturity date[2]	No maturity	No maturity	July 11, 2029	July 11, 2029	Sep 9, 2030	Dec 26, 2029	Mar 6, 2027	Jan 21, 2030
Issuer call subject to prior supervisory approval	N/A	No	Yes	Yes	No	No	No	No
Option call date, contingent call dates and redemption amount	N/A	N/A	With notice and PRA approval but not earlier than five years from the issue date	With notice and PRA approval but not earlier than five years from the issue date	No	No	N/A	N/A
Subsequent call dates, if applicable	N/A	N/A	Daily	Daily	N/A	N/A	N/A	N/A
Fixed or floating dividend / coupon	N/A	Fixed	Floating	Floating	Floating	Floating	Floating	Floating
Coupon rate and any related index[3]	N/A	8.55 per cent.; 8.55 per cent.; 8.67 per cent.	CoF + LTDS + 65 bps	CoF + LTDS + 65 bps	CoF + LTDS + 100bps	CoF + LTDS + 100bps	CoF + LTDS + 40bps	CoF + LTDS + 40bps
Existence of a dividend stopper	No	No	No	No	No	No	No	No
Fully discretionary, partially discretionary or mandatory (in terms of timing)	Fully Discretionary	Fully Discretionary	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory

Fully discretionary, partially discretionary or mandatory (in terms of amount)	**Fully Discretionary**	**Fully Discretionary**	**Mandatory**	**Mandatory**	**Mandatory**	**Mandatory**	**Mandatory**	**Mandatory**
Existence of step up or other incentive to redeem	**N/A**	**N/A**	**No**	**No**	**N/A**	**N/A**	**No**	**No**
Noncumulative or cumulative	**Non-cumulative**	**Non-cumulative**	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
Convertible or non-convertible	**N/A**	**Non-convertible**	**Convertible**	**Convertible**	**Convertible**	**Convertible**	**Convertible**	**Convertible**
If convertible, conversion trigger(s)	**N/A**	**N/A**	**Resolution trigger**	**Resolution trigger**	**Resolution trigger**	**Resolution trigger**	**Resolution trigger**	**Resolution trigger**
If convertible, fully or partially	**N/A**	**N/A**	**Fully**	**Fully**	**Fully**	**Fully**	**Fully**	**Fully**
If convertible, conversion rate	**N/A**	**N/A**	**Conversion rate to be determined by the BoE**	**Conversion rate to be determined by the BoE**	**Conversion rate to be determined by the BoE**	**Conversion rate to be determined by the BoE**	**Conversion rate to be determined by the BoE**	**Conversion rate to be determined by the BoE**
If convertible, mandatory or optional conversion	**N/A**	**N/A**	**Optional**	**Optional**	**Optional**	**Optional**	**Optional**	**Optional**
If convertible, specify instrument type convertible into	**N/A**	**N/A**	**Ordinary Shares**	**Ordinary Shares**	**Ordinary Shares**	**Ordinary Shares**	**Ordinary Shares**	**Ordinary Shares**
If convertible, specify issuer of instrument it converts to	**N/A**	**N/A**	**GSGUKL**	**GSGUKL**	**GSGUKL**	**GSGUKL**	**GSGUKL**	**GSGUKL**
Write-down features	**N/A**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
If write-down, write-down trigger(s)	**N/A**	**Regulatory Trigger Event[4] and Resolution trigger**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
If write-down, full or partial	**N/A**	**Always fully (to $0.01 per Note)**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
If write-down, permanent or temporary	**N/A**	**Permanent**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
If temporary write-down, description of write-up mechanism	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Type of subordination (only for eligible liabilities)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**Contractual**	**Contractual**
Ranking of the instrument in normal insolvency proceedings	**Equity**	**Perpetual unsecured securities**	**Preference shares**	**Preference shares**	**Subordinated loan facility**	**Subordinated loan facility**	**Senior loan**	**Senior loan**
Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	**Preference shares**	**Preference Shares**	**Unsecured and subordinated debt**	**Unsecured and subordinated debt**	**Unsecured and unsubordinated debt**	**Unsecured and unsubordinated debt**	**Unsecured and senior debt**	**Unsecured and senior debt**
Non-compliant transitioned features	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
If yes, specify non-compliant features	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Link to the full term and conditions of the instrument (signposting)[5]	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

1. First date of ordinary share issuance.
2. The original maturity date has been extended following amendment and the current maturity date is reflected in the table.
3. CoF represents Cost of Funds (the US Federal Reserve Funds Rate) and LTDS represents Long Term Debt Spread (the Goldman Sachs Weighted Average Cost of Debt).
4. Regulatory Trigger Event will be deemed to have occurred at any time where: (i) the CET1 Ratio of the GSGUKL and its consolidated subsidiaries as calculated by GSGUKL or the PRA is less than 7 per cent.; and or (ii) the CET1 Ratio of GSI as calculated by GSGUKL or the PRA is less than 7 per cent.
5. Instruments are internally issued as such no prospectus is available.

Key Changes during the Period

On October 22, 2021, GSGUK borrowed an additional $1,500,000,000 under the $22,000,000,000 Loan Agreement between Goldman Sachs UK Funding Limited as lender and GSGUK as borrower originally dated March 06, 2012.

The following table summarises the main features of capital instruments for GSI and GSIB as of December 2021.

Table 48: GSI and GSIB Capital Instruments' Main Features Template

$ in millions							As of December 2021
Issuer	GSI	GSI	GSI	GSI	GSI	GSIB	GSIB
Unique Identifier (e.g. CUSIP, ISIN, or Bloomberg identifier for private placement)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Public or private placement	Private placement	Private placement	Private placement	Private placement	Private placement	Private placement	Private placement
Governing law(s) of the instrument	UK	UK	UK	UK	UK	UK	UK
Contractual recognition of write down and conversion powers of resolution authorities	No	No	No	No	No	No	No
Transitional CRR rules	CET1	Additional Tier 1	Tier 2	Tier 2	Tier 2	CET1	Tier 2
Post-transitional CRR rules	CET1	Additional Tier 1	Tier 2	Tier 2	Tier 2	CET1	Tier 2
Eligible at solo/(sub-) consolidated/solo&(sub-) consolidated	Consolidated	Consolidated	Consolidated	Consolidated	Consolidated	Consolidated	Consolidated
Instrument type	Ordinary Shares	Deeply Subordinated Undated Additional Tier 1 Notes	Sub-ordinated Debt	Sub-ordinated Debt	Sub-ordinated Debt	Ordinary Shares	Sub-ordinated Debt
Amount recognised in regulatory capital	598	8,300	4,252	675	450	63	826
Nominal amount of instrument	598	3,300; 2,500; 2,500	4,252	675	450	63	826
Issue Price	598	$1,000,000 per Note	4,252	675	450	63	826
Redemption Price	598	$1,000,000 per Note	4,252	675	450	63	826
Accounting Classification	Shareholder's Equity	Shareholder's Equity	Amortised Cost	Amortised Cost	Amortised Cost	Shareholder's Equity	Amortised Cost
Original date of issuance[1]	May 18, 1988	June 27, 2017; June 28, 2017; 28 November, 2018	July 31, 2003	June 26, 2012	Mar 20, 2013	Jun 28, 1973	Sep 9, 2015
Perpetual or dated	Perpetual	Perpetual	Dated	Dated	Dated	Perpetual	Dated
Original maturity date[2]	No maturity	No maturity	Sep 9, 2030	Dec 26, 2029	Dec 26, 2029	No maturity	15 years from agreement
Issuer call subject to prior supervisory approval	N/A	No	N/A	N/A	N/A	N/A	N/A
Option call date, contingent call dates and redemption amount	N/A	N/A	No	No	No	N/A	No
Subsequent call dates, if applicable	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fixed or floating dividend / coupon	N/A	Fixed	Floating	Floating	Floating	N/A	Floating
Coupon rate and any related index[3]	N/A	8.55 per cent.; 8.55 per cent.; 8.67 per cent.	CoF + LTDS + 100bps	CoF + LTDS + 100bps	CoF + LTDS + 100bps	N/A	CoF + 341bps
Existence of a dividend stopper	No	No	No	No	No	No	No
Fully discretionary, partially discretionary or mandatory (in terms of timing)	Fully discretionary	Fully Discretionary	Mandatory	Mandatory	Mandatory	Fully discretionary	Mandatory
Fully discretionary, partially discretionary or mandatory (in terms of amount)	Fully discretionary	Fully Discretionary	Mandatory	Mandatory	Mandatory	Fully discretionary	Mandatory

Existence of step up or other incentive to redeem	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Noncumulative or cumulative	**Non-cumulative**	**Non-cumulative**	**Cumulative**	**Cumulative**	**Cumulative**	**Non-cumulative**	**Cumulative**
Convertible or non-convertible	**N/A**	**Non-Convertible**	**Convertible**	**Convertible**	**Convertible**	**N/A**	**Non-Convertible**
If convertible, conversion trigger(s)	**N/A**	**N/A**	**Resolution trigger**	**Resolution trigger**	**Resolution trigger**	**N/A**	**N/A**
If convertible, fully or partially	**N/A**	**Non-convertible**	**Fully**	**Fully**	**Fully**	**N/A**	**N/A**
If convertible, conversion rate	**N/A**	**N/A**	**Conversion rate to be determined by the BoE**	**Conversion rate to be determined by the BoE**	**Conversion rate to be determined by the BoE**	**N/A**	**N/A**
If convertible, mandatory or optional conversion	**N/A**	**N/A**	**Optional**	**Optional**	**Optional**	**N/A**	**N/A**
If convertible, specify instrument type convertible into	**N/A**	**N/A**	**Ordinary Shares**	**Ordinary Shares**	**Ordinary Shares**	**N/A**	**N/A**
If convertible, specify issuer of instrument it converts to	**N/A**	**N/A**	**GSI**	**GSI**	**GSI**	**N/A**	**N/A**
Write-down features	**N/A**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
If write-down, write-down trigger(s)	**N/A**	**Regulatory Trigger Event[4] and Resolution trigger**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
If write-down, full or partial	**N/A**	**Always fully (to $0.01 per Note)**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
If write-down, permanent or temporary	**N/A**	**Permanent**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
If temporary write-down, description of write-up mechanism	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Type of subordination (only for eligible liabilities)	**N/A**	**Contractual**	**Contractual**	**Contractual**	**Contractual**	**N/A**	**Contractual**
Ranking of the instrument in normal insolvency proceedings	**Equity**	**Perpetual unsecured securities**	**Subordinated loan facility**	**Subordinated loan facility**	**Subordinated loan facility**	**Equity**	**Subordinated loan facility**
Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	**Preference shares**	**Preference Shares**	**Unsecured and unsubord-inated debt**	**Unsecured and unsubord-inated debt**	**Unsecured and unsubord-inated debt**	**Preference shares**	**Unsecured and unsubord-inated debt**
Non-compliant transitioned features	**No**	**No**	**No**	**No**	**No**	**No**	**No**
If yes, specify non-compliant features	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Link to the full term and conditions of the instrument (signposting)[5]	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

1. First date of ordinary share issuance.
2. The original maturity date has been extended following amendment and the current maturity date is reflected in the table.
3. CoF represents Cost of Funds (the US Federal Reserve Funds Rate) and LTDS represents Long Term Debt Spread (the Goldman Sachs Weighted Average Cost of Debt).
4. Regulatory Trigger Event will be deemed to have occurred at any time where: (i) the CET1 Ratio of the GSGUKL and its consolidated subsidiaries as calculated by GSGUKL or the PRA is less than 7 per cent.; and or (ii) the CET1 Ratio of GSI as calculated by GSGUKL or the PRA is less than 7 per cent.
5. Instruments are internally issued as such no prospectus is available.

Governance Arrangements

Directors of regulated entities are selected based primarily on the following criteria: (i) judgement, character, expertise, skills and knowledge useful to the oversight of the companies' businesses; (ii) diversity of viewpoints, backgrounds, experiences, and other demographics; (iii) business or other relevant experience; and (iv) the extent to which the interplay of the candidate's expertise, skills, knowledge and experience with that of other Board members will build a Board that is effective, collegial and responsive to the needs of the companies.

In selecting new directors, we consider a number of factors in seeking to develop a Board that, as a whole, reflects a range of skills, diversity, experience and expertise. It is our aim that at least 40% of the members of the Boards of the regulated entities in our UK group are women.

As of December 31, 2021, 40.0% of the members of the GSI Board and 42.9% of the members of the GSIB Board were women. GSAMI ceased being a subsidiary of GSGUK and was no longer consolidated for regulatory purposes in November 2021. As at that date and as at December 31, 2021, 57.1% of the members of the GSAMI Board were women.

We have set out below the biographies of the members of the Boards of Directors of GSI and GSIB as of December 31, 2021, together with the positions and number of directorships they held at that date, including those at Goldman Sachs. We have excluded appointments held with organisations which do not pursue predominantly commercial objectives, such as charitable, educational and religious community organisations and counted directorships held within the same group as a single directorship in accordance with the PRA's General Organisational Requirements at 5.4-5.6 and the FCA's Senior Management Arrangements, Systems and Controls (SYSC) handbook at 4.3A.5-7.

Table 49: GSI Board of Directors[1]

Name	Role	Background	Directorships
J. M. D. Barroso	Non-executive director and chair	José Manuel joined the GSI Board of Directors in July 2016 as chair and a non-executive director, and also acts as an advisor to the firm. He is also a member of the GSI Board Nominations Committee. He served as President of the European Commission from 2004 to 2014 and as the Prime Minister of Portugal from 2002 to 2004, having been elected to the Portuguese Parliament in 1985 and having held various ministerial positions. Since 2021 he has been the chair of the board of Gavi, the Vaccine Alliance. José Manuel has a number of academic positions and has received various honorary degrees, prizes and decorations. On behalf of the European Union, Jose Manuel received the Nobel Peace Prize in 2012. José Manuel graduated in Law from the University of Lisbon and earned an MA in Political Science and a diploma in European studies from the University of Geneva.	**1**
S. A. Boyle[2]	Executive director	Sally was appointed as a director of GSI in July 2018. Sally is an advisory director to GSI, having recently retired as international head of Human Capital Management (HCM) a position she had held since 2015. Sally is also a member of the Supervisory Board of Goldman Sachs Bank Europe SE. Sally joined Goldman Sachs in 1999, before which she was a partner at Mills & Reeve Solicitors. Sally is also a non-executive director of the Royal Air Force.	**1**
C. G. Cripps	Non-executive director	Catherine joined the GSI Board of Directors in April 2019 and is chair of the GSI Board Risk Committee and a member of the GSI Board Audit Committee. Catherine was formerly an Investment Director at GAM, the CEO of a multi-strategy fund of Aida Capital Limited and has held various positions in equity derivatives trading, risk management and product control at different investment banks. Catherine also serves as a non-executive director at Maniyar Capital Advisors UK Ltd, Polar Capital Technology Trust plc and Warwick Company (UK) Limited. She stepped down from positions at CQS Management Ltd and the Nuclear Liabilities Fund Ltd in April and November 2021 respectively. Catherine earned an MA in Physics from Oxford University and has recently completed a period of post graduate research in Quantum Information at Imperial College, London.	**4**
R. J. Gnodde	Executive director and chief executive officer	Richard is chief executive officer of GSI having joined the GSI Board in October 2006. He has been a member of the Firmwide Management Committee since 2003 and is also chair of the European Management Committee and a member of the Firmwide Reputational Risk Committee. Richard joined Goldman Sachs in 1987. Richard serves as a trustee of the University of Cape Town Trust and is on the Campaign Board of Cambridge University. Richard earned a BA from the University of Cape Town and an MA from Cambridge University.	**1**
S. Gyimah	Non-executive director	Sam Gyimah joined the GSI Board of Directors in November 2020 and is a member of the GSI Board Audit Committee. Sam was formerly the Member of Parliament for East Surrey from 2010 through to 2019. During this time, Sam served in a number of ministerial positions including joint Minister for Higher Education, Innovation, Technology and Research at the Department for Business, Energy and Industrial Strategy and the Department for Education in 2018, as well as Parliamentary Under Secretary of State at the Ministry of Justice between 2016 and 2018. Sam has also served as a government whip and as Parliamentary Private Secretary to Prime Minister David Cameron, attending Cabinet. Sam is also a non-executive director of Oxford University Innovation and holds a number of advisory roles including with Blume Equity LLP. Sam earned an MA in Philosophy, Politics and Economics from the University of Oxford.	**2**

[1] On 18 November 2021, Lisa Donnelly and Nirubhan Pathmanabhan were approved as executive directors by the Board of GSI, subject to regulatory approval. This has been granted for Mr. Pathmanabhan and he was appointed as an executive director on 18 May 2022.
[2] Sally Boyle retired from the Board of GSI on 31 December 2021

N. Harman	Non-executive director	Nigel joined the GSI Board of Directors in December 2016 and is chair of the GSI Board Audit Committee and a member of the GSI Board Risk Committee. He was formerly a partner at KPMG, acting in a number of roles including Chairman of UK Banking, Head of Banking and Head of Financial Risk Management. Nigel earned a BSc (Hons) in Economics and Accountancy from Bristol University. He is also a fellow of the Institute of Chartered Accountants.	**1**
D. W. McDonogh	Executive director	Dermot joined the GSI Board of Directors in December 2016 and is chief operating officer for EMEA. He is also the Chair of the Supervisory Boards of Goldman Sachs Bank Europe SE and, since August 2019, a non-executive director of Goldman Sachs Bank USA. He serves on a number of the firm's committees including the European Management Committee, Firmwide Enterprise Risk Committee, Firmwide Risk Council, Firmwide Conduct Committee and the Firmwide Asset Liability Committee. Additionally, Dermot co-chairs the GSI Risk Committee and the EMEA Conduct Committee. He joined Goldman Sachs in 1994. Dermot earned a degree in Finance from the University of Limerick in Ireland.	**1**
T. L. Miller OBE	Non-executive director	Therese ("Terry") Miller joined the GSI Board of Directors in July 2018 and is chair of the GSI Board Nominations Committee and GSI Board Remuneration Committee and is a member of the GSI Board Risk Committee. She served as general counsel for the London Organising Committee of the Olympic Games and Paralympic Games ("LOCOG") from 2006 to 2013 and as a director of the organizing committee for the 2014 Invictus Games. Prior to joining LOCOG, Terry was the International General Counsel of GSI. She is a non-executive director of Rothesay Life plc and Stelrad Group plc and is the senior independent director of Galliford Try Holdings plc. She is also a Nominated Director of the British Equestrian Federation. She was appointed an Officer of the Order of the British Empire for her services to the London 2012 Games.	**4**
E. E. Stecher	Non-executive director	Esta joined the GSI Board of Directors in July 2018 and is a member of the GSI Remuneration Committee. She also chairs the Boards of Directors of Goldman Sachs International Bank, Goldman Sachs Bank USA and the Goldman Sachs Philanthropy Fund and is a member of the Supervisory Board of Goldman Sachs Bank Europe SE. In September 2021, Esta retired as a partner and became a senior advisor to the firm. Esta is a trustee emeritus of Columbia University and remains involved in other roles at Columbia University. Esta joined Goldman Sachs in 1994, prior to which she was a partner at Sullivan & Cromwell. Esta earned a BA from the University of Minnesota and a JD from Columbia Law School.	**2**
M. O. Winkelman	Non-executive director	Mark joined the GSI Board of Directors in June 2016 and is a member of the GSI Board Risk Committee[3]. He has also served as a non-executive director of The Goldman Sachs Group, Inc. since December 2014 and is chair of The Goldman Sachs Group, Inc. Risk Committee and a member of its Audit and Governance Committees. Mark previously held a number of senior roles at Goldman Sachs between 1978 and 1994, including as a member of the Management Committee, co-head of the Fixed Income Division and head of the J. Aron Division. Mark is also a trustee emeritus of the Board of Penn Medicine of the University of Pennsylvania.	**1**

Table 50: GSIB Board of Directors[4]

Name	Role	Background	Directorships
D. C. M. Bicarregui[5]	Executive director	David joined the GSIB Board of Directors in December 2016 and is the chief financial officer of GSIB and the firm's international treasurer, head of global liquidity management. He serves on a number of the firm's Asset and Liability Committees including as co-chair of the GSI, GSIB, and Goldman Sachs Bank Europe SE Committees and as a member on the Firmwide Committee. He is also a member of the Firmwide New Activity Committee, Structured Products Committee, GSIB Management Committee, GSI and GSIB Risk Committees and the Internal Reorganization, Trade and Transaction Subcommittee. David joined Goldman Sachs in 1997. He serves on the board of St. George's College in Weybridge. David earned a BA (Hons) in Economics and Politics from Exeter University and an MBA from Columbia University and London Business School.	**2**
C. G. Cripps	Non-executive director	Catherine joined the GSIB Board of Directors in April 2019 and is chair of the GSIB Board Risk Committee and a member of the GSIB Board Audit Committee. Catherine was formerly an Investment Director at GAM, the CEO of a multi-strategy fund of Aida Capital Limited and has held various positions in equity derivatives trading, risk management and product control at different investment banks. Catherine also serves as a non-executive director at Maniyar Capital Advisors UK Ltd, Polar Capital Technology Trust plc and Warwick Company (UK) Limited. She stepped down from positions at CQS Management Ltd and the Nuclear Liabilities Fund Ltd in April and November 2021 respectively. Catherine earned an MA in Physics from Oxford University and has recently completed a period of post graduate research in Quantum Information at Imperial College, London.	4
S. Gyimah	Non-executive director	Sam Gyimah joined the GSIB Board of Directors in November 2020 and is a member of the GSIB Board Audit Committee. Sam was formerly the Member of Parliament for East Surrey from 2010 through to 2019. During this time, Sam served in a number of ministerial positions including joint Minister for Higher Education, Innovation, Technology and Research at the Department for Business, Energy and Industrial Strategy and the Department for Education in 2018, as well as Parliamentary Under Secretary of State at the Ministry of Justice between 2016 and 2018. Sam has also served as a government whip and as Parliamentary Private Secretary to Prime Minister David Cameron, attending Cabinet. Sam is also a non-executive director of Oxford University Innovation and holds a number of advisory roles including with Blume Equity LLP. Sam earned an MA in Philosophy, Politics and Economics from the University of Oxford.	**2**
N. Harman	Non-executive director	Nigel joined the GSIB Board of Directors in December 2016 and is chair of the GSIB Board Audit Committee and a member of the GSIB Board Risk Committee. He was formerly a partner at KPMG, acting in a number of roles including Chairman of UK Banking, Head of Banking and Head of Financial Risk Management. Nigel earned a BSc (Hons) in Economics and Accountancy from Bristol University. He is also a fellow of the Institute of Chartered Accountants.	**1**

[3] Mark Winkelman stepped down as a member of the GSI Board Remuneration Committee on 18 May 2022

[4] David Wildermuth retired from the Board of GSIB on 27 July 2021. On 18 November 2021 Lisa Donnelly and Nirubhan Pathmanabhan were approved as executive directors by the Board of GSIB, subject to regulatory approval. This has been granted for Mr. Pathmanabhan and he was appointed as an executive director on 18 May 2022

[5] David Bicarregui retired from the Board of GSIB on 27 April 2022

D. W. McDonogh	Executive director and chief executive officer	Dermot is chief executive officer of GSIB having joined the GSIB Board in February 2009 and is chief operating officer for EMEA. He is also the Chair of the Supervisory Boards of Goldman Sachs Bank Europe SE, and, since August 2019, a non-executive director of Goldman Sachs Bank USA. He serves on a number of the firm's committees including the European Management Committee, Firmwide Enterprise Risk Committee, Firmwide Risk Council, Firmwide Conduct Committee and the Firmwide Asset Liability Committee. Additionally, Dermot chairs the GSIB Management Committee and co-chairs the GSIB Risk Committee and the EMEA Conduct Committee. He joined Goldman Sachs in 1994. Dermot earned a degree in Finance from the University of Limerick in Ireland.	**1**
T. L. Miller OBE	Non-executive director	Therese ("Terry") Miller joined the GSIB Board of Directors in August 2015 and is chair of the GSIB Board Nominations Committee and GSIB Board Remuneration Committee and is a member of the GSIB Board Risk Committee. She served as general counsel for the London Organising Committee of the Olympic Games and Paralympic Games ("LOCOG") from 2006 to 2013 and as a director of the organizing committee for the 2014 Invictus Games. Prior to joining LOCOG, Terry was the International General Counsel of GSI. She is a non-executive director of Rothesay Life plc and Stelrad Group plc and is the senior independent director of Galliford Try Holdings plc. She is also a Nominated Director of the British Equestrian Federation. She was appointed an Officer of the Order of the British Empire for her services to the London 2012 Games.	**4**
E. E. Stecher	Non-executive director and chair	Esta joined the GSIB Board of Directors in July 2011 and was appointed chair in October 2016. She is a member of the GSIB Board Nominations and Remuneration Committees. She also chairs the Boards of Directors of Goldman Sachs Bank USA and the Goldman Sachs Philanthropy Fund and is a member of the Supervisory Board of Goldman Sachs Bank Europe SE. In September 2021, Esta retired as a partner and became a senior advisor to the firm**.** Esta is a trustee emeritus of Columbia University and remains involved in other roles at Columbia University. Esta joined Goldman Sachs in 1994, prior to which she was a partner at Sullivan & Cromwell. Esta earned a BA from the University of Minnesota and a JD from Columbia Law School.	**2**

Climate Risk

Overview

Climate risk is the risk of adverse outcomes arising from the long and/or short term impacts of climate. GSGUK categorizes climate risk 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 the risk that asset values may decline because of changes in climate policies or changes in the underlying economy due to de-carbonization.

Informed by the results of our risk identification process, we have developed methodologies applied to the entity for both physical and transition risk. This is a foundation for quantifiable measurement and integration of climate risk into relevant GSGUK risk management. We use a variety of measurement methodologies to assess the potential impact of climate-related risks, and perform GSGUK scenario analysis to identify vulnerabilities and risks.

Physical Risk

In both our physical and transition risk stress testing, we leverage open-source data and models used by the scientific and climate policy communities. For physical risk stress tests, we employ a combination of open-source data Global Circulation Models (GCM) and our internal methodologies to project how climate variables such as temperature may evolve over time at different geographical locations for GSGUK. We have developed a climate scoring approach for a number of significant physical risks, such as, extreme temperature, water stress, wildfire, etc. For each of these physical climate risk indices, and based on the scenario used, we categorize the physical risk severity of the relevant assets in GSGUK's portfolio. We continue to monitor the severity of impacts for GSGUK resiliency.

Transition Risk

Transition risk emerges from policy, legal, technology and market changes resulting from the shift to a lower carbon economy. For example, when implementing the Paris Agreement, carbon-intensive sectors may suffer from transition risk due to regulatory pressures and changed market preferences. In our GSGUK transition risk stress tests, we use Integrated Assessment Models (IAM) as a foundation to which we add our internally developed methodologies. IAMs, which are open-source models used by the climate policy community, combine a physical climate model with an underlying economic model.

We project the effects of a climate policy change from a base case to other more stringent climate policy scenarios. As a result, we model transition risk by generating risk factor shocks such as equity shocks, credit spread shocks and credit rating shocks by country and by industry under different climate policy scenarios. Once we develop the shocks, we apply them to relevant GSGUK portfolios to produce stress tests and assess impacts.

Climate Risk Integration

For GSGUK climate-related risks manifest in different ways across our business and we have continued to make significant enhancements to our climate risk management framework, including steps to further integrate climate risk into our broader entity risk management processes. Consistent with the firmwide governance structure from senior management to GS Group Board and its committees, including the Risk and Public Responsibilities Committee, we have integrated oversight of climate-related risks into GSGUK risk management governance structure, including the oversight by the company's Board and Risk Committee. We have begun incorporating climate risk into our credit evaluation and underwriting processes for select industries and in select loan commitments.

As part of its oversight responsibility, the GSI and GSIB Board and Risk Committee receive reporting of risk appetite metrics and updates on our risk management approach to climate risk, including our approach towards scenario analysis and integration into existing risk management processes. In general, GSGUK 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 year-end 2021, climate change related risks were identified as relevant but based on the quantification analysis they have been assessed as non-material risks to GSGUK.

UK Remuneration Disclosures

Introduction

The following disclosures are made by Goldman Sachs Group UK Limited in accordance with Article 450 of CRR in respect of Goldman Sachs International ("GSI") and Goldman Sachs International Bank ("GSIB"), applicable in the UK pursuant to the European Union (Withdrawal) Act in 2018 and in accordance with the Prudential Sourcebooks of the Financial Conduct Authority ("FCA") in respect of Goldman Sachs Asset Management International (together, the "UK Companies"[1]). For the purposes of this remuneration disclosure, any reference to an EU regulation, including to a Binding Technical Standard and Guidelines, is a reference to the UK version of that regulation, unless otherwise stated.

Remuneration Programme Philosophy

Retention of talented employees is critical to executing the firm's business strategy successfully. Remuneration is, therefore, a key component of the costs the firm incurs to generate revenues, similar to cost of goods sold or manufacturing costs in other industries.

The remuneration philosophy and the objectives of the remuneration programme for the firm are reflected in the Compensation Principles for The Goldman Sachs Group, Inc. ("GS Group"), as posted on the Goldman Sachs public website:

http://www.goldmansachs.com/investor-relations/corporate-governance/corporate-governance-documents/compensation-principles.pdf

The firm's Compensation Principles were approved by shareholders at the 2010 annual shareholders' meeting. 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; and

(v) Align aggregate remuneration for the firm with performance over the cycle.

[1] These disclosures include any employees assigned from time to time to Goldman Sachs Bank (USA) London branch.

Compensation Frameworks

The Amended and Restated Firmwide Performance Assessment & Variable Compensation Framework ("Firmwide Compensation Framework") formalizes the variable compensation practices of the firm.

The primary purpose of the Firmwide Compensation Framework is to assist the firm in assuring that its variable compensation program does not provide "covered employees" (i.e., senior executives as well as other employees of the firm, who, either individually or as part of a group, have the ability to expose the firm to material amounts of risk) with incentives to take imprudent risks and is consistent with the safety and soundness of the firm. Each division maintains a division-specific Performance Assessment & Variable Compensation Framework that is consistent with the Firmwide Compensation Framework (collectively, the "Compensation Frameworks").

In addition, the firm utilizes the Management Committee Performance Assessment Framework to provide greater definition to, and transparency regarding, the pre-established financial and non-financial factors considered by the GS Group Compensation Committee to assess the firm's performance in connection with compensation decisions for Management Committee members. Performance is assessed in a holistic manner, without ascribing specific weight to any single factor or metric.

Remuneration Governance

The Compensation Committee

The Board of Directors of GS Group (the "Group Board") oversees the development, implementation and effectiveness of the firm's global remuneration practices, which it generally exercises directly or through delegation to the Compensation Committee of the Group Board (the "Compensation Committee"). The responsibilities of the Compensation Committee include:

- Review and approval of (or recommendation to the Group Board to approve) the firm's variable remuneration structure, including the portion to be paid as share-based awards, all year-end share-based grants for eligible employees (including those employed by the UK Companies), and the terms and conditions of such awards.

- Assisting the Group Board in its oversight of the development, implementation and effectiveness of policies and strategies relating to the Human Capital Management ("HCM") function, including recruiting, retention, career development and progression, management succession (other than that within the purview of the Corporate Governance and Nominating Committee) and diversity.

The Compensation Committee held 10 meetings in 2021 to discuss and make determinations regarding remuneration.

The members of the Compensation Committee at the end of 2021 were M. Michele Burns (Chair), Drew G. Faust, Kimberley D. Harris, Ellen J. Kullman, Lakshmi N. Mittal and Adebayo O. Ogunlesi (ex-officio). None of the members of the Compensation Committee was an employee of the firm. All members of the Compensation Committee were "independent" within the meaning of the New York Stock Exchange Rules and the Group Board Policy on Director Independence.

External Consultants

The Compensation Committee recognises the importance of using a remuneration consultant that is appropriately qualified and is determined to be independent.

For 2021, the Compensation Committee received the advice of a remuneration consultant from Meridian (formerly of FW Cook) who reviewed the Performance Assessment Framework as well as on other remuneration matters.

Other Stakeholders

In carrying out the responsibilities of the Compensation Committee, the Chair of the Compensation Committee met multiple times with senior management during the year, including the firm's Chief Operating Officer ("COO"), the Global Head of HCM and other members of senior management.

The Remuneration Committees

The responsibilities of the Board Remuneration Committees of GSI and GSIB (the "Remuneration Committees") include:

- Overseeing the development and implementation of the remuneration policies of GSI and GSIB insofar as they relate to employees of GSI and GSIB whose remuneration is subject to the relevant provisions of the Prudential Regulation Authority ("PRA") Rulebook or FCA Handbook.
- To take steps to satisfy itself that the remuneration policies of GSI and GSIB are in accordance with the relevant provisions of the PRA Rulebook and FCA Handbook ("Remuneration Code"), including in particular that:
  - the remuneration policies of GSI and GSIB appropriately take into account the long-term interests of shareholders, investors and other stakeholders in GSI and GSIB; and
  - the remuneration policies of GSI and GSIB are consistent with and promote sound and effective risk management and do not encourage risk-taking that exceeds the level of tolerated risk of GSI and GSIB.
- Making recommendations to the Boards of GSI and GSIB for approval and adoption of the remuneration policies of GSI and GSIB once satisfied that the policies are in accordance with the Remuneration Code.

The Remuneration Committees held 7 meetings in 2021 to discuss and make determinations regarding the remuneration policies of GSI and GSIB.

At the end of 2021:

- the members of the GSI Board Remuneration Committee were Therese Miller (Chair), Mark O. Winkelman and Esta Stecher;
- the members of the GSIB Board Remuneration Committee were Therese Miller (Chair) and Esta Stecher; and
- none of the members of the Remuneration Committees was an employee of the UK Companies.

Compensation-related Risk Assessment

The firm's Chief Risk Officer ("CRO") presented an annual compensation-related risk assessment to the Compensation Committee, meeting jointly with the Risk Committee of the Group Board, to assist the Compensation Committee in its assessment of the effectiveness of the firm's remuneration programme, and particularly, whether the programme is consistent with the principle that variable remuneration does not encourage employees to expose the firm to imprudent risk. This assessment most recently occurred in December 2021.

GS Group's CRO and the CRO for GSI and GSIB also provided a compensation-related risk assessment to the Remuneration Committees.

In addition, the firm's EMEA Conduct Committee assists senior management of the UK Companies in the oversight of conduct risk and business standards.

Global Remuneration Determination Process

The firm's global process for setting variable remuneration (including the requirement to consider risk and compliance issues) applies to employees of the UK Companies in the same way as to employees in other regions and is subject to oversight by the senior management of the firm in the region. The firm uses a highly disciplined and robust process for setting variable remuneration across all divisions and regions following the process outlined in the Compensation Frameworks.

This process involves divisional compensation managers, divisional compensation committees, division heads, HCM and the Firmwide Management Committee (the firm's most senior leaders), as appropriate.

In addition, as part of the remuneration determination process, members of the firm's Compliance, Risk, Employment Law Group and Employee Relations functions make arrangements for divisional management to take into consideration certain compliance, risk or control matters when determining remuneration of individuals. Before any individual remuneration decisions are finalised, Employee Relations and the Employment Law Group assess the recommended remuneration for relevant individuals in the context of overall performance and other factors, and recommendations are reviewed with respect to comparators.

Additionally, the Remuneration Committees oversee the development and implementation of the remuneration policies of GSI and GSIB, and review remuneration-related information during the year, including an annual compensation-related risk assessment, an overview of the firm's remuneration programme and structure, and certain remuneration data.

Link Between Pay and Performance

In 2021, annual remuneration for employees generally comprised fixed remuneration (including base salary) and variable remuneration. The firm's remuneration practices provide for variable remuneration determinations to be made on a discretionary basis. Variable remuneration is based on multiple factors and is not set as a fixed percentage of revenue or by reference to any other formula, consistent with the process outlined in the Compensation Frameworks. Firmwide performance is a key factor in determining variable remuneration.

The firm is committed to aligning variable remuneration with performance. In order to do so, the performance of the firm, division and individual over the past year, as well as over prior years, are taken into account.

The firm believes that the firm's senior leaders have responsibility for overall performance and, as a result, senior employees have experienced more volatility in their remuneration year-over-year, particularly in periods when the firm's performance declined significantly.

The firm believes that multi-year guarantees should be avoided as they risk misaligning remuneration and performance, and guaranteed variable remuneration should be awarded in exceptional circumstances only (for example, for certain new hires).

Performance Measurement

Variable remuneration determinations take into account firm, division, business unit, desk and individual performance, as applicable.

Firmwide performance

Certain firmwide financial metrics and year-on-year changes in those metrics are reviewed, including the following:

- Return on average common shareholders' equity;
- Return on average tangible common shareholders' equity;
- Efficiency ratio;
- Book value per common share growth;
- Pre-tax earnings;
- Net revenues;
- Diluted earnings per common share; and

Divisional performance

Additionally, each revenue-producing division has quantitative and/or qualitative metrics specific to the division, its business units and, where applicable, desks that are used to evaluate the performance of the division and its employees.

Individual performance

Employees are evaluated annually as part of the performance review feedback process. This process reflects input from a number of employees, including supervisors, peers and those who are junior to the employee, regarding an array of performance measures. The performance evaluations for 2021 included assessments of Teamwork and Collaboration

(One GS); Compliance, Risk Management, Code of Conduct, and Firm Reputation; Sensitivity to Risk and Control (revenue-producing employees); Control Side Empowerment (control functions); and Culture. As part of the performance review feedback process, managers with three or more direct reports are assessed and receive feedback on their performance as a manager.

Performance Assessment Framework

The Performance Assessment Framework, which guided the Compensation Committee's process for 2021, aligns performance metrics and goals across the firm's most senior leaders, and helps to ensure that the remuneration programme for the Firmwide Management Committee continues to be appropriately aligned with the firm's long-term strategy, stakeholder expectations and the safety and soundness of the firm.

Risk Adjustment

Prudent risk management is a hallmark of the firm's culture and sensitivity to risk and risk management are key elements in assessing employee performance, including as part of the performance review feedback process noted above.

The firm takes risk, including conduct risk, into account both on an ex-ante and ex-post basis when setting the amount and form of variable remuneration for employees. As documented in the Compensation Frameworks, different lines of business have different risk profiles and these are taken into account when determining remuneration. These include credit, market, liquidity, operational, reputational, legal, compliance and conduct risks.

Guidelines are provided to assist compensation managers when applying discretion during the remuneration process to promote consistent consideration of the different risks presented by the firm's businesses. Further, to ensure the independence of control function employees, remuneration for those employees is not determined by individuals in revenue-producing positions but rather by the management of the relevant control function.

Consistent with prior years, for 2021 certain employees receive a portion of their variable remuneration as a share-based award that is subject to a number of terms and conditions that could result in forfeiture or recapture. For further details, see "Structure of Remuneration" below.

In the 2021 annual compensation-related risk assessment presented to the Compensation Committee, meeting jointly with the Risk Committee of the Board, and separately to the Remuneration Committees, the CRO confirmed that the various components of the firm's remuneration programmes and policies (for example, process, structure and governance) balanced risk and incentives in a manner that does not encourage imprudent risk-taking. In addition, the CRO stated that the firm has a risk management process that, among other things, is consistent with the safety and soundness of the firm and focuses on our:

(i) *Risk management culture*: the firm's culture emphasises continuous and prudent risk management;

(ii) *Risk-taking authority*: there is a formal process for identifying employees who, individually or as part of a group, have the ability to expose the firm to material amounts of risk;

(iii) *Upfront risk management*: the firm has tight controls on the allocation, utilisation and overall management of risk-taking, as well as comprehensive profit and loss and other management information which provide ongoing performance feedback. In addition, in determining variable remuneration, the firm reviews performance metrics that incorporate ex-ante risk adjustments; and

(iv) *Governance*: the oversight of the Group Board, management structure and the associated processes all contribute to a strong control environment and control functions have input into remuneration structure and design.

The CRO for GSI and GSIB participated in the presentation to provide appropriate assurances to the Remuneration Committees with respect to GSI and GSIB.

Structure of Remuneration

In accordance with a resolution of the shareholders of Goldman Sachs Group UK Limited, the variable component of remuneration paid to certain employees identified under Article 94(2) of Directive 2013/36/CRD as "Material Risk Taker" of GSI and GSIB shall not exceed 200% of the fixed component.

Fixed Remuneration

The firm has a global salary approach to ensure consistency in salary levels and to achieve an appropriate balance between fixed and variable remuneration.

For certain employees identified as Material Risk Takers in accordance with Commission Delegated Regulation with regard to regulatory technical standards on criteria to identify categories of staff whose professional activities have a material impact on an institution's risk profile under Article 94(2) of Directive 2013/36/CRD and the PRA Rulebook (Remuneration Part), additional fixed remuneration is awarded in the form of an allowance generally paid in cash. The selection of recipients and the value of allowances awarded are determined as a result of an evaluation of professional experience, role and level of organisational responsibility.

Variable Remuneration

For employees with total remuneration and variable remuneration above specific thresholds, variable remuneration is generally paid in a combination of cash and share-based remuneration. In general, the portion paid in the form of a share-based award increases as variable remuneration increases and, for Material Risk Takers, is set to ensure compliance with the applicable rules of the Remuneration Code.

The variable remuneration programme is flexible to allow the firm to respond to changes in market conditions and to maintain its pay-for-performance approach. Variable remuneration is discretionary (even if paid consistently over a period of years).

Share-Based Remuneration

The firm believes that remuneration should encourage a long-term, firmwide approach to performance and discourage imprudent risk-taking. Paying a significant portion of variable remuneration in the form of share-based remuneration that delivers over time, changes in value according to the price of shares of common stock (shares) of GS Group, and is subject to forfeiture or recapture encourages a long-term, firmwide focus because its value is realised through long-term responsible behaviour and the financial performance of the firm.

The firm imposes transfer restrictions, retention requirements, and anti-hedging policies to further align the interests of the firm's employees with those of the firm's shareholders. The firm's retention and transfer restriction policies, coupled with the practice of paying senior employees a significant portion of variable remuneration in the form of share-based awards, leads to a considerable investment in shares of GS Group over time. For share-based awards granted to certain employees, performance conditions may also be applicable.

In addition, from time to time, the firm may make awards consisting of unfunded, unsecured promises to deliver other instruments on terms and conditions that are substantially similar to those applicable to Restricted Stock Units ("RSUs") described below.

- **Deferral Policy**: The deferred portion of fiscal year 2021 annual variable remuneration was generally awarded in the form of RSUs. An RSU is an unfunded, unsecured promise to deliver a share on a predetermined date. RSUs awarded in respect of fiscal year 2021 generally deliver in three equal instalments on or about each of the first, second and third anniversaries of the grant date, assuming the employee has satisfied the terms and conditions of the award at each such date. Where required under the Remuneration Code, RSUs awarded in respect of fiscal year 2021 for Material Risk Takers generally deliver in four equal instalments on or about each of the first, second, third and fourth anniversaries of the grant date, or, for Material Risk Takers who perform a Risk Management Function, on or about each of the first, second, third, fourth and fifth anniversaries of the grant date, or, for Material Risk Takers who perform a PRA Senior Management Function, on or about each of the third, fourth, fifth, sixth and seventh anniversaries of the grant date, assuming in each case, the employee has satisfied the terms and conditions of the award at each such date.
- **Transfer Restrictions**: The firm generally requires certain individuals to hold a material portion of the shares they receive in respect of RSUs granted as part of their year-end remuneration according to the firm's global deferral table. These transfer restrictions apply to the lower of 50% of the shares delivered before reduction for tax withholding, or the number of shares received after reduction for tax withholding. Because combined tax and social security rates in the United Kingdom are close to 50%, transfer restrictions apply to substantially all net shares delivered to employee's resident in the United Kingdom.

  An employee generally cannot sell, exchange, transfer, assign, pledge, hedge or otherwise dispose of any RSUs or shares that are subject to transfer restrictions.
- **Retention Requirement**: All shares delivered to employees designated as Material Risk Takers in relation to their variable remuneration are subject to retention in accordance with the requirements of the Remuneration Code.
- **Forfeiture and Recapture Provisions:** The RSUs and shares delivered thereunder in relation to variable remuneration are subject to forfeiture or recapture if the Compensation Committee or its delegate(s) determine(s) that during 2021 the employee participated (or otherwise oversaw or was responsible for, depending on the circumstances, another individual's participation) in the structuring or marketing of any product or service, or participated on behalf of the firm or any of its clients in the purchase or sale of any security or other property, in any case without appropriate consideration of the risk to the

firm or the broader financial system as a whole (for example, if the employee were to improperly analyse risk or fail sufficiently to raise concerns about such risk) and, as a result of such action or omission, the Compensation Committee or its delegate(s) determine(s) there has been, or reasonably could be expected to be, a material adverse impact on the firm, the employee's business unit or the broader financial system.

This provision is not limited to financial risks and is designed to encourage the consideration of the full range of risks associated with the activities (for example, legal, compliance or reputational). The provision also does not require that a material adverse impact actually occur, but rather may be triggered if the firm determines that there is a reasonable expectation of such an impact.

The Compensation Committee previously adopted guidelines that set forth a formal process regarding determinations to forfeit or recapture awards for failure to consider risk appropriately upon the occurrence of certain pre-determined events (for example, in the event of annual firmwide, divisional, business unit or individual losses). The review of whether forfeiture or recapture is appropriate includes input from the CRO, as well as representatives from Legal and Compliance, as appropriate. Determinations are made by the Compensation Committee or its delegates, with any determinations made by delegates reported to the Compensation Committee.

RSUs granted to all Material Risk Takers in relation to variable remuneration are generally subject to forfeiture until delivery of the underlying shares if GS Group is determined by US bank regulators to be "in default" or "in danger of default" as defined under the US Dodd-Frank Wall Street Reform and Consumer Protection Act 2010, or fails to maintain for 90 consecutive business days, the required "minimum tier 1 capital ratio" (as defined under Federal Reserve Board regulations). RSUs awarded in relation to variable remuneration are also subject to forfeiture if the firm or the relevant business unit suffers a "material downturn in financial performance".

All variable remuneration granted to Material Risk Takers is generally subject to forfeiture or recapture in the event of a "material failure of risk management", or in the event that the employee engages in "serious misconduct", at any time during the seven year period after grant (share-based awards) or payment (cash).

Additionally, RSUs and shares delivered thereunder in relation to variable remuneration are generally subject to forfeiture or recapture if it is appropriate to hold a Material Risk Taker accountable in whole or in part for "serious misconduct" related to compliance, control or risk that occurred during 2021 by an individual for whom the Material Risk Taker had supervisory responsibility as a result of direct or indirect reporting lines or management responsibility for an office, division or business.

An employee's RSUs may also be forfeited, and shares delivered thereunder recaptured if the employee engages in conduct constituting "cause" at any time before the RSUs are delivered and any applicable transfer restrictions lapse. Cause includes, among other things, any material violation of any firm policy, any act or statement that negatively reflects on the firm's name, reputation or business interests and any conduct detrimental to the firm.

With respect to all of the forfeiture conditions, if the firm determines after delivery or release of transfer restrictions that an RSU or share delivered thereunder should have been forfeited or recaptured, the firm can require return of any shares delivered or repayment to the firm of the fair market value of the shares when delivered (including those withheld to pay taxes) or any other amounts paid or delivered in respect thereof.

- **Hedging**: The firm's anti-hedging policy ensures employees maintain the intended exposure to the firm's stock performance. In particular, all employees are prohibited from hedging RSUs, shares that are subject to transfer restrictions, and, to the extent applicable, retention shares. In addition, executive officers of GS Group (as defined under the Securities Exchange Act of 1934) are prohibited from hedging any shares that they can freely sell. Employees, other than executive officers, may hedge only shares that they can otherwise sell. However, no employee may enter into uncovered hedging transactions or sell short any shares. Employees may only enter into transactions or otherwise make investment decisions with respect to shares during applicable "window periods".
- **Treatment upon Termination or Change-in-Control:** As a general matter, delivery schedules are not accelerated, and transfer restrictions are not removed, when an employee leaves the firm. The limited exceptions include death and "conflicted employment." A change in control alone is not sufficient to trigger acceleration of any deliveries or removal of transfer restrictions; only if the change in control is followed within 18 months by a termination of employment by the firm without "cause" or by the employee for "good reason" will delivery and release of transfer restrictions be accelerated.

Quantitative Disclosures

The following tables show aggregate quantitative remuneration information for 689 individuals, categorised as Material Risk Takers for the purposes of the Remuneration Code in respect of their duties for the UK Companies. The PRA was consulted on these awards as part of their normal assessment of remuneration.

Material Risk Takers are also eligible to receive certain general non-discretionary ancillary payments and benefits on a similar basis to other employees. These payments and benefits are not included in the disclosures below.

Aggregate remuneration: split between fixed and variable remuneration and forms of variable remuneration

Remuneration paid or awarded for the financial year ended December 31, 2021 comprised fixed remuneration (salaries, allowances and director fees) and variable remuneration. The figures are split into two tables showing “Senior Management” and “Other Material Risk Takers” according to the following definitions:

- **Senior Management:** members of the Boards of Directors of the UK Companies, members of the Management Committees for the Europe, Middle East and Africa (EMEA) region and GSIB, the head of each revenue-producing division in the EMEA region and heads of significant business lines in the EMEA region who perform a significant management function corresponding to PRA and FCA Senior Managers of the UK Companies.
- **Other Material Risk Takers**: other employees whose activities have a material impact on the risk profile of the firm.

As required by Article 450(2) of CRR, the quantitative information referred to in Article 450(1)(h) of CRR has also been provided separately for each major business area, internal control functions, corporate functions, and at the level of the management body in its management and supervisory function of the UK Companies. In addition, the deferred remuneration shown in the table below includes remuneration subject to the deferral requirements in Principle 12 of the Remuneration Code. The amounts relate only to those employees who were Material Risk Takers at the end of the fiscal year, December 31, 2021.

Table 51: Senior Management

	Management Body – Supervisory Function	Management Body – Management Function	Investment Banking[1]	Asset Management[2, 3]	Corporate Functions	Independent Control Functions
Number of members of Senior Management	12	8	18	16	9	8
2021 Fixed Remuneration awarded in cash ($ in millions)	3.18	21.29	80.08	25.44	6.89	4.11
2021 Variable Remuneration awarded in cash ($ in millions)	-	2.29	6.03	6.57	1.72	1.06
2021 Variable Remuneration awarded in RSUs ($ in millions)	-	31.79	126.14	28.51	6.93	3.77
Variable to Fixed Remuneration Ratio		1.60	1.65	1.38	1.26	1.17
Outstanding unvested as at 1 January 2021 ($ in millions)	-	90.24	197.37	50.67	8.42	5.48
Awarded during 2021 ($ in millions)	-	20.32	96.38	20.93	3.03	2.19
Paid out during 2021 ($ in millions)	-	14.39	50.45	19.45	2.47	1.19
Reduced through performance adjustments during 2021 ($ in millions)	-	-	-	-	-	-
Outstanding unvested as at 31 December 2021 ($ in millions)	-	96.18	243.30	52.16	8.97	6.48

Table 52: Other Material Risk Takers

	Investment Banking[1]	Asset Management[2, 3]	Corporate Functions	Independent Control Functions
Number of Other Material Risk Takers	**512**	**64**	**19**	**23**
2021 Fixed Remuneration awarded in cash ($ in millions)	**328.21**	**75.63**	**10.82**	**7.35**
2021 Fixed Remuneration awarded in RSUs ($ in millions)	**-**	**-**	**-**	**-**
2021 Variable Remuneration awarded in cash ($ in millions)	**74.16**	**16.50**	**2.89**	**3.61**
2021 Variable Remuneration awarded in RSUs ($ in millions)	**378.62**	**101.09**	**10.50**	**3.30**
Variable to Fixed Remuneration Ratio	**1.38**	**1.55**	**1.24**	**0.94**
Outstanding unvested as at 1 January 2021 ($ in millions)	**399.14**	**165.88**	**12.59**	**3.39**
Awarded during 2021 ($ in millions)	**259.36**	**64.06**	**6.54**	**1.40**
Paid out during 2021 ($ in millions)	**154.98**	**69.10**	**5.83**	**1.22**
Reduced through performance adjustments during 2021 ($ in millions)	**-**	**-**	**-**	**-**
Outstanding unvested as at 31 December 2021 ($ in millions)	**503.52**	**160.87**	**13.30**	**3.57**

1. Reflects Material Risk Takers in the Investment Banking Division, Merchant Banking Division, Global Markets and Global Investment Research Division
2. Reflects Material Risk Takers in the Consumer and Investment Management Division
3. All elements of deferred remuneration are settled immediately when due, and so there are no amounts of outstanding vested deferred remuneration

Sign-on and Severance Payments

Six Material Risk Takers were awarded sign-on payments and five Material Risk Takers were awarded severance payments during 2021.

Table 53: Sign-on and Severance Payments

	Senior Management	Other Material Risk Takers	Total	Highest Individual Award
Sign-on award ($ in millions)	**-**	**6.67**	**6.67**	**3.56**
Severance payment ($ in millions)	**1.5**	**0.44**	**1.94**	**1.5**

No sign-on or severance payments were awarded to members of the Management Body

Material Risk Takers with Total Remuneration of One Million Euros or above

The following table shows the number of Material Risk Takers with total remuneration of EUR 1 million or above arranged by remuneration band for the remuneration period ended December 31, 2021.

Table 54: Material Risk Takers with total remuneration of EUR 1 million or above

Total Remuneration Band (EUR)	Number of Individuals
≥ 1,000,000 to < 1,500,000	**123**
≥ 1,500,000 to < 2,000,000	**63**
≥ 2,000,000 to < 2,500,000	**34**
≥ 2,500,000 to < 3,000,000	**20**
≥ 3,000,000 to < 3,500,000	**12**
≥ 3,500,000 to < 4,000,000	**3**
≥ 4,000,000 to < 4,500,000	**3**
≥ 4,500,000 to < 5,000,000	**6**
≥ 5,000,000 to < 6,000,000	**15**
≥ 6,000,000 to < 7,000,000	**9**
≥ 7,000,000 to < 8,000,000	**6**
≥ 8,000,000 to < 9,000,000	**3**
≥ 9,000,000 < 10,000,000	**0**
≥ 10,000,000	20
Total	**317**

Note: Goldman Sachs Asset Management International ("GSAMI") transferred out of the GSGUK scope of regulatory consolidation in November 2021. Full year compensation for GSAMI employees has been included in the above charts.

Cautionary Note on Forward-Looking Statements

We have included in these disclosures, and our management may make, statements that may constitute “forward-looking statements.” Forward-looking statements are not historical facts or statements of current conditions, but instead represent only our beliefs regarding future events, many of which, by their nature, are inherently uncertain and outside of our control. These statements may relate to, among other things, (i) our future plans and results, (ii) the objectives and effectiveness of our risk management and liquidity policies, and (iii) the effect of changes to the regulations, and our future status, activities or reporting under banking and financial regulation.

It is possible that our actual results and financial condition may differ, possibly materially, from the anticipated results and financial condition in these forward-looking statements. Important factors that could cause our actual results and financial condition to differ from those in these statements include, among others, those discussed in “Risk Factors” in Part I, Item 1A in the firm’s 2021 Form 10-K.

Glossary

- **Advanced Internal Ratings-Based (AIRB).** The AIRB approach of CRR provides a methodology for banks, subject to supervisory approval, to use various risk parameters to determine the EAD and risk-weights for regulatory capital calculations. Other risk parameters used in the determination of risk weights are each counterparty's Probability of Default (PD), Loss Given Default (LGD) and the effective maturity of the trade or portfolio of trades.

- **Central Counterparty (CCP).** A counterparty, such as a clearing house, that facilitates trades between counterparties.

- **Comprehensive Risk.** The potential loss in value, due to price risk and defaults, for credit correlation positions. Comprehensive risk consists of a modelled measure which is calculated at a 99.9% confidence level over a one-year time horizon, subject to a floor which is 8% of the standardised specific risk add-on.

- **Credit Correlation Position.** A securitisation position for which all or substantially all of the value of the underlying exposures is based on the credit quality of a single company for which a two-way market exists, or indices based on such exposures for which a two-way market exists, or hedges of these positions (which are typically not securitisation positions).

- **Credit Risk.** The potential for loss due to the default or deterioration in credit quality of a counterparty (e.g., an OTC derivatives counterparty or a borrower) or an issuer of securities or other instruments we hold.

- **Credit Valuation Adjustment (CVA).** An adjustment applied to uncollateralised OTC derivatives to cover the risk of mark-to-market losses of bilateral credit risk (i.e. counterparty and own) in uncollateralised derivatives.

- **Debt Valuation Adjustment (DVA).** An adjustment applied to debt held at fair value representing the mark-to-market of unilateral own credit risk in unsecured debt held at fair value.

- **Default.** A default is considered to have occurred when either or both of the two following events have taken place: (i) we consider that the obligor is unlikely to pay its credit obligations to us in full; or (ii) the obligor has defaulted on a payment and/or is past due more than 90 days on any material Wholesale credit obligation, 180 days on residential mortgage obligations or 120 days on other retail obligations.

- **Default Risk.** The risk of loss on a position that could result from failure of an obligor to make timely payments of principal or interest on its debt obligation, and the risk of loss that could result from bankruptcy, insolvency, or similar proceedings.

- **Effective Expected Positive Exposure (EEPE).** The time-weighted average of non-declining positive credit exposure over the EE simulation. EEPE is used in accordance with the IMM as the exposure measure that is then risk weighted to determine counterparty risk capital requirements.

- **Event Risk.** The risk of loss on equity or hybrid equity positions as a result of a financial event, such as the announcement or occurrence of a company merger, acquisition, spin-off, or dissolution.

- **Expected Exposure (EE).** The expected value of the probability distribution of non-negative credit risk exposures to a counterparty at any specified future date before the maturity date of the longest term transaction in a netting set.

- **Exposure at Default (EAD).** The exposure amount that is risk weighted for regulatory capital calculations. For on-balance-sheet assets, such as receivables and cash, EAD is generally based on the balance sheet value. For the calculation of EAD for off-balance-sheet exposures, including commitments and guarantees, an equivalent exposure amount is calculated based on the notional amount of each transaction multiplied by a credit conversion factor designed to estimate the net additions to funded exposures that would be likely to occur over a one-year horizon, assuming the obligor were to default. For substantially all of the counterparty credit risk arising from OTC derivatives, exchange-traded derivatives and securities financing transactions, internal models calculate the distribution of exposure upon which the EAD calculation is based.

- **Idiosyncratic Risk.** The risk of loss in the value of a position that arises from changes in risk factors unique to that position.

- **Incremental Risk.** The potential loss in value of non-securitised positions due to the default or credit migration of issuers of financial instruments over a one-year time horizon. This measure is calculated at a 99.9% confidence level over a one-year time horizon using a multi-factor model.

- **Internal Models Methodology (IMM).** The IMM establishes a methodology for entities to use their internal models to estimate exposures arising from OTC derivatives, securities financing transactions and cleared transactions, subject to qualitative and quantitative requirements and supervisory approval.
- **Loss Given Default (LGD).** An estimate of the economic loss rate if a default occurs during economic downturn conditions.
- **Market Risk.** The risk of loss in the value of our inventory, investments, loans and other financial assets and liabilities accounted for at fair value, due to changes in market conditions.
- **Operational Risk.** The risk of an adverse outcome resulting from inadequate or failed internal processes, people, systems or from external events.
- **Other Systemically Important Institutions.** Institutions identified by national regulators as those whose failure or malfunction could potentially lead to serious negative consequences for the domestic financial systems and real economy.
- **Prudent Valuation Adjustment (PVA).** A deduction from CET1 capital where the prudent value of trading assets or other financial assets measured at fair value is materially lower than the fair value recognised in the consolidated financial information.
- **Probability of Default (PD).** Estimate of the probability that an obligor will default over a one-year horizon.
- **Regulatory Value-at-Risk (VaR).** The potential loss in value of trading positions due to adverse market movements over a 10-day time horizon with a 99% confidence level.
- **Regulatory VaR Backtesting.** Comparison of daily positional and actual loss results to the Regulatory VaR measure calculated as of the end of the prior business day.
- **Securitisation Position.** Represents a transaction or scheme in which the credit risk associated with an exposure or pool of exposures is tranched and both payments in the transaction or scheme are dependent upon the performance of the exposure or pool of exposures and the subordination of tranches determines the distribution of losses during the ongoing life of the transaction or scheme.
- **Specific Risk.** The risk of loss on a position that could result from factors other than broad market movements and includes event risk, default risk and idiosyncratic risk. The specific risk add-on is applicable for both securitisation positions and for certain non-securitised debt and equity positions, to supplement the model-based measures.
- **Stress Testing.** Stress testing is a method of determining the effect of various hypothetical stress scenarios.
- **Stressed VaR (SVaR).** The potential loss in value of trading assets and liabilities, as well as certain investments, loans, and other financial assets and liabilities, during a period of significant market stress. SVaR is calculated at a 99% confidence level over a 10-day horizon using market data inputs from a continuous 12-month period of stress.
- **Synthetic Securitisation.** Defined as a securitisation transaction in which the tranching is achieved by the use of credit derivatives or guarantees, and the pool of exposures is not removed from the balance sheet of the originator.
- **Traditional Securitisation.** Defined as a securitisation transaction which involves the economic transfer of the exposures being securitised to a securitisation special purpose entity which issues securities; and so that this must be accomplished by the transfer of ownership of the securitised exposures from the originator or through sub-participation; and the securities issued do not represent payment obligations of the originator.
- **Value-at-Risk (VaR).** The potential loss in value of trading assets and liabilities, certain investments, loans, and other financial assets and liabilities accounted for at fair value, due to adverse market movements over a defined time horizon with a specified confidence level. Risk management VaR is calculated at a 95% confidence level over a one-day horizon.
- **Wholesale Exposure.** A term used to refer collectively to credit exposures to companies, sovereigns or government entities (other than Securitisation, Retail or Equity exposures).

Appendix I: Scope of Consolidation Tables

Consolidated Balance Sheet under the Regulatory Scope of Consolidation

The following three tables provide a reconciliation of GSGUK, GSI and GSIB balance sheet as of December 31, 2021 on an accounting consolidation basis to the GSGUK, GSI and GSIB balance sheet under the regulatory scope of consolidation. It also breaks down how carrying values under the scope of regulatory consolidation are allocated to the different risk frameworks laid out in Part Three of the CRR.

Table 55: Differences Between Accounting and Regulatory Scopes of Consolidation and Mapping of Financial Statement Categories with Regulatory Risk Categories[1]

GSGUK

$ in millions **As of December 2021**

	Carrying values as reported in published financial statements and under the scope of regulatory consolidation	Carrying values of items				
		Subject to the credit risk framework	Subject to the CCR framework	Subject to the securitisation framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from capital
Assets						
Cash and Cash Equivalents	$ 62,657	$ 62,657	-	-	-	-
Customer and Receivables	86,314	6,589	77,223	-	-	-
Trading Assets	744,922	3,247	635,426	-	742,428	-
Collateralised agreements	277,092	-	277,092	-	186,624	-
Investments	4,684	4,202	-	482	-	-
Loans	12,357	5,429	6,079	850	109	-
Investment Property	32	32	-	-	-	-
Other Assets	7,700	7,137	-	-	-	562
Total assets	**$ 1,195,758**	**$ 89,293**	**$ 995,820**	**$ 1,332**	**$ 929,161**	**$ 562**
Liabilities						
Customer and Other payables	$ 119,743	-	-	-	-	$ 119,743
Collateralised financings	168,774	-	168,774	-	-	-
Trading Liabilities	695,076	-	622,172	-	132,047	715
Deposits	79,635	-	-	-	693,961	78,864
Unsecured Borrowings	82,999	-	-	-	772	82,999
Other Liabilities	5,449	-	-	-	-	5,449
Total liabilities	**$ 1,151,676**	**-**	**$ 790,946**	**-**	**$ 826,780**	**$ 287,770**

GSI

$ in millions						As of December 2021
	Carrying values as reported in published financial statements and under the scope of regulatory consolidation	Carrying values of items				
		Subject to the credit risk framework	Subject to the CCR framework	Subject to the securitisation framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from capital
Assets						
Cash and Cash Equivalents	$ 52,422	$ 52,422	-	-	-	-
Collateralised agreements	257,366	-	257,366	-	180,436	-
Customer and other receivables	86,135	6,410	77,223	-	-	-
Trading Assets	742,238	2,042	635,646	-	740,542	-
Investments	399	399	-	-	-	-
Loans	398	398	-	-	-	-
Other assets	4,462	3,925	-	-	-	537
Total assets	**$ 1,143,420**	**$ 65,596**	**$ 970,235**	**-**	**$ 920,978**	**$ 537**
Liabilities						
Collateralised financings	$ 204,539	-	$ 204,539	-	$ 167,812	-
Customer and Other payables	119,883	-	-	-	-	119,883
Trading Liabilities	694,982	-	622,210	-	694,267	715
Unsecured Borrowings	79,813	-	-	-	-	79,813
Other Liabilities	5,308	-	-	-	-	5,308
Total liabilities	**$ 1,104,525**	**-**	**$ 826,749**	**-**	**$ 862,079**	**$ 205,719**

GSIB

$ in millions						As of December 2021
	Carrying values as reported in published financial statements and under the scope of regulatory consolidation	**Carrying values of items**				
		Subject to the credit risk framework	**Subject to the CCR framework**	**Subject to the securitisation framework**	**Subject to the market risk framework**	**Not subject to capital requirements or subject to deduction from capital**
Assets						
Cash at bank and in hand	$ 9,901	9,901	-	-	-	-
Collateralised agreements	55,190	6,716	48,474	-	34,202	-
Customer and other receivables	292	292	-	-	-	-
Trading Asset	3,227	63	3,165	-	2,429	-
Loans	11,800	4,871	6,079	850	109	-
Investments	5,080	4,598	-	482	-	-
Other Assets	1,032	1,009	-	-	-	23
Total assets	**$ 86,522**	**$ 27,450**	**$ 57,718**	**$ 1,332**	**$ 36,740**	**$ 23**
Liabilities						
Collateralised financings	234	-	234	-	234	-
Customer and Other Payables	252	-	-	-	-	252
Trading Liabilities	826	-	826	-	203	-
Deposits	79,635	-	-	-	771	78,864
Unsecured Borrowings	1,896	-	-	-	-	1,896
Other Liabilities	176	-	-	-	-	176
Total liabilities	**$ 83,019**	**-**	**$ 1,060**	**-**	**$ 1,208**	**$ 81,188**

[1] Carrying values under the scope of regulatory consolidation shown in the first column may not be the sum of the carrying values shown in the remaining columns as some items are subject to capital requirements in one or more risk frameworks.

Regulatory Balance Sheet Assets Reconciliation to Exposure at Default (EAD)

The following three tables present a reconciliation of the consolidated regulatory balance sheet to EAD for items subject to credit risk, CCR and securitisation and frameworks.

Table 56: Main Sources of Differences Between Regulatory Exposures Amounts and Carrying Values in Financial Statements

GSGUK

$ in millions				As of December 2021
			Items subject to	
		Credit risk framework	CCR framework	Securitisation framework
1	**Assets carrying value amount under the scope of regulatory consolidation (as per template EU LI1)**	$ 89,293	$ 995,820	$ 1,332
2	Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	-	(790,946)	-
3	Total net amount under the regulatory scope of consolidation	89,293	204,874	1,332
4	Off-balance-sheet amounts	5,436	-	64
5	*Differences due to credit conversion factor*	(1,269)	-	-
6	*Differences due netting of collateral, haircut and EAD modelling*	2,902	(16,775)	-
7	**Exposure amounts considered for regulatory purposes**	**$ 96,362**	**$ 188,099**	**$ 1,396**

GSI

$ in millions				As of December 2021
			Items subject to	
		Credit risk framework	CCR framework	Securitisation framework
1	**Assets carrying value amount under the scope of regulatory consolidation (as per template EU LI1)**	**$ 65,596**	**$ 970,235**	-
2	Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	-	(826,749)	-
3	**Total net amount under the regulatory scope of consolidation**	**65,596**	**143,486**	-
4	Off-balance-sheet amounts	1,349	-	-
5	*Differences due to credit conversion factor*	(337)	-	-
6	*Differences due netting of collateral, haircut and EAD modelling*	3,386	45,160	-
7	**Exposure amounts considered for regulatory purposes**	**$ 69,994**	**$ 188,646**	-

GSIB

$ in millions				As of December 2021
		Items subject to		
		Credit risk framework	CCR framework	Securitisation framework
1	**Assets carrying value amount under the scope of regulatory consolidation (as per template EU LI1)**	**$ 27,450**	**$ 57,718**	**$ 1,332**
2	Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	-	1,060	-
3	Total net amount under the regulatory scope of consolidation	27,450	56,658	1,332
4	Off-balance-sheet amounts[1]	4,108	-	64
5	*Differences due to credit conversion factor*	(1,027)	-	-
6	*Differences due netting of collateral, haircut and EAD modelling*	(62)	(52,244)	0
7	**Exposure amounts considered for regulatory purposes**	**$ 30,469**	**$ 4,414**	**$ 1,396**

[1]**Off balance sheet amounts**: Off balance sheet amounts are stated gross and primarily consist of undrawn committed facilities and guarantees.

Explanations of differences between accounting and regulatory exposure amounts

The carrying value of assets is usually measured at amortised cost or fair value as at the balance sheet date. For on-balance-sheet assets, such as receivables and cash, the EAD is generally based on the carrying value. For the calculation of EAD for off-balance-sheet exposures, including commitments and guarantees, a credit equivalent exposure amount is calculated based on the notional amount of each transaction multiplied by a credit conversion factor in accordance with Article 166 of CRR.

As GSGUK calculates the majority of its credit exposure under the IMM, the impacts of netting and collateral are integral to the calculation of the exposure. The exposures considered for regulatory purposes are presented on a net and collateralised basis where there is a legally enforceable netting and collateral opinion. Under IFRS, netting is required if legal right of set-off exists and the cash flows are intended to be settled on a net basis.

Appendix II: Credit Risk Tables

The following three tables present GSGUK, GSI and GSIB's net values of on-balance-sheet and off-balance-sheet exposures by geographical areas and exposure classes as of December 31, 2021.

Table 57: Geographical Breakdown of Exposures

GSGUK

$ in millions — **As of December 2021**

		Net value										
		EMEA	France	United Kingdom	Other countries	**Asia**	Australia	Other countries	**Americas**	United States	Other countries	**Total**
1	Central governments or central banks	$ 58,895	$ 41,083	$ 9,555	$ 8,257	$ 51	-	$ 51	$ 594	$ 594	$ 0	$ 59,540
2	Institutions	4,815	1,352	1,061	2,402	1,306	120	1,186	3,501	2,983	518	9,622
3	Corporates	11,264	566	3,244	7,454	2,427	1,277	1,150	1,511	598	913	15,202
4	Retail											-
5	Equity	350	-	342	8	-			319	12	307	669
5a	Non-credit obligation assets	-	-	-	-	-	-	-	-	-	-	-
6	***Total IRB approach***	**$ 75,324**	**$ 43,001**	**$ 14,202**	**$ 18,121**	**$ 3,784**	**$ 1,397**	**$ 2,387**	**$ 5,925**	**$ 4,187**	**$ 1,738**	**$ 85,033**
7	Central governments or central banks	3,162		3,162	-	-	-	-	-			3,162
12	Institutions	51	-	-	51	-	-	-	2,501	2,501	-	2,552
13	Corporates	1,673	-	1,673	-	-	-	-	6	6	-	1,679
14	Retail	96	-	86	10	-	-	-	-	-	-	96
15	Secured by mortgages on immovable property	108	-	61	47	-	-	-	-	-	-	108
16	Exposures in default	235	-	-	235	-	-	-	-	-	-	235
17	Items associated with particularly high risk	1,056	10	328	718	63		63	114	58	56	1,233
21	Equity exposures	-	-	-	-	-	-	-	177	177	-	177
22	Other exposures	484		484	-	-			33	33	-	517
23	***Total standardised approach***	**$ 6,865**	**$ 10**	**$ 5,794**	**$ 1,061**	**$ 63**	**-**	**$ 63**	**$ 2,831**	**$ 2,775**	**$ 56**	**9,759**
24	***Total***	**$ 82,189**	**$ 43,011**	**$ 19,996**	**$ 19,182**	**$ 3,847**	**$ 1,397**	**$ 2,450**	**$ 8,756**	**$ 6,962**	**$ 1,794**	**$ 94,792**

GSI

$ in millions												**As of December 2021**
		Net value										
		EMEA	France	United Kingdom	Other countries	**Asia**	Australia	Other countries	**Americas**	United States	Other countries	**Total**
1	Central governments or central banks	$ 48,411	$ 41,083	$ 6,844	$ 484	$ 51	-	$ 51	$ 594	$ 594	-	$ 49,056
2	Institutions	4,534	1,308	1,065	2,161	1,293	118	1,175	2,506	1,990	516	8,333
3	Corporates	3,794	118	1,560	2,116	1,938	1,171	767	845	422	423	6,577
4	Retail	-	-	-	-	-	-	-	-	-	-	-
5	Equity	350	-	342	8	-	-	-	319	12	307	669
5a	Non-credit obligation assets	-	-	-	-	-	-	-	-	-	-	-
6	***Total IRB approach***	**$ 57,089**	**$ 42,509**	**$ 9,811**	**$ 4,769**	**$ 3,282**	**$ 1,289**	**$ 1,993**	**$ 4,264**	**$ 3,018**	**$ 1,246**	**$ 64,635**
7	Central governments or central banks	528	-	528	-	-	-	-	-	-	-	528
12	Institutions	-	-	-	-	-	-	-	-	-	-	-
13	Corporates	1,427	-	1,427	-	-	-	-	-	-	-	1,427
14	Retail	-	-	-	-	-	-	-	-	-	-	-
15	Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-
16	Exposures in default	-	-	-	-	-	-	-	-	-	-	-
17	Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-
21	Equity exposures	-	-	-	-	-	-	-	-	-	-	-
22	Other exposures	356	-	356	-	-	-	-	-	-	-	356
23	***Total standardised approach***	**$ 2,311**	**-**	**$ 2,311**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**$ 2,311**
24	***Total***	**$ 59,400**	**$ 42,509**	**$ 12,122**	**$ 4,769**	**$ 3,282**	**$ 1,289**	**$ 1,993**	**$ 4,264**	**$ 3,018**	**$ 1,246**	**$ 66,946**

GSIB

$ in millions												**As of December 2021**
		Net value										
		EMEA	France	United Kingdom	Other countries	**Asia**	Australia	Other countries	**Americas**	United States	Other countries	**Total**
1	Central governments or central banks	$ 10,440	$ 7,662	$ 2,712	$ 66	-	-	-	0	0	-	$ 10,440
2	Institutions	7,470	149	6,679	642	13	4	9	995	992	3	8,478
3	Corporates	8,576	929	3,231	4,416	490	257	233	665	176	489	9,731
4	Retail	-	-	-	-	-	-	-	-	-	-	-
5	Equity	0	-	0	-	-	-	-	-	-	-	0
5a	Non-credit obligation assets	-	-	-	-	-	-	-	-	-	-	-
6	***Total IRB approach***	**$ 26,486**	**$ 8,740**	**$ 12,622**	**$ 5,124**	**$ 503**	**$ 261**	**$ 242**	**$ 1,660**	**$ 1,168**	**$ 492**	**$ 28,649**
7	Central governments or central banks	2,633	-	2,633	-	-	-	-	-	-	-	2,633
12	Institutions	-	-	-	-	-	-	-	-	-	-	-
13	Corporates	80	-	80	-	-	-	-	-	-	-	80
14	Retail	10	-	10	-	-	-	-	-	-	-	10
15	Secured by mortgages on immovable property	47	-	47	-	-	-	-	-	-	-	47
16	Exposures in default	6	-	-	6	-	-	-	-	-	-	6
17	Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-
21	Equity exposures	-	-	-	-	-	-	-	-	-	-	-
22	Other exposures	22	-	22	-	-	-	-	-	-	-	22
23	***Total standardised approach***	**$ 2,798**	**-**	**$ 2,792**	**$ 6**	**-**	**-**	**-**	**-**	**-**	**-**	**$ 2,798**
24	***Total***	**$ 29,284**	**$ 8,740**	**$ 15,414**	**$ 5,130**	**$ 503**	**$ 261**	**$ 242**	**$ 1,660**	**$ 1,168**	**$ 492**	**$ 31,447**

The following three tables present GSGUK, GSI and GSIB's net values of on-balance-sheet and off-balance-sheet exposures by industry or counterparty types and exposure classes as of December 31, 2021.

Table 58: Concentration of Exposures by Industry or Counterparty Types

GSGUK

$ in millions											**As of December 2021**
		Sovereigns (including Central Banks)	**Banks**	**CCPs and Exchanges**	**Other Financials**	**Real Estate**	**Manufac turing**	**Transport, Utilities & Storage**	**Retail / Wholesale trade**	**Services and other Industries**	**Total**
1	Central governments or central banks	$ 59,540	-	-	-	-	-	-	-	-	$ 59,540
2	Institutions	-	6,004	196	3,405			0		17	9,622
3	Corporates	-	541	143	6,998	716	1,468	815	257	4,264	15,202
4	Retail	-	-	-	-	-	-	-	-	-	-
5	Equity		3	42	2		2			620	669
5a	Non-credit obligation assets	-	-	-	-	-	-	-	-	-	
6	***Total IRB approach***	**$ 59,540**	**$ 6,548**	**$ 381**	**$ 10,405**	**$ 716**	**$ 1,470**	**$ 815**	**$ 257**	**$ 4,901**	**$ 85,033**
7	Central governments or central banks	3,162	-	-	-	-	-	-	-		3,162
12	Institutions		52	-	2,500		-	-	-		2,552
13	Corporates					71	-	-	-	1,608	1,679
14	Retail	-	-	-	-	-	-	-	-	96	96
15	Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	108	108
16	Exposures in default	-	-	-	-	-	-	235			235
17	Items associated with particularly high risk	-	-	-	386	344		77	76	350	1,233
21	Equity exposures	-	-	-	-	177	-	-	-		177
22	Other exposures	-	-	-	-	-	-	-	-	517	517
23	***Total standardised approach***	**$ 3,162**	**$ 52**	**-**	**$ 2,886**	**$ 592**	**-**	**$ 312**	**$ 76**	**$ 2,679**	**$ 9,759**
24	***Total***	**$ 62,702**	**$ 6,600**	**$ 381**	**$ 13,291**	**$ 1,308**	**$ 1,470**	**$ 1,127**	**$ 333**	**$ 7,580**	**$ 94,792**

GSI

	$ in millions										**As of December 2021**
		Sovereigns (including Central Banks)	**Banks**	**CCPs and Exchanges**	**Other Financials**	**Real Estate**	**Manufac turing**	**Transport, Utilities & Storage**	**Retail / Wholesale trade**	**Services and other Industries**	**Total**
1	Central governments or central banks	$ 49,056	-	-	-	-	-	-	-	-	$ 49,056
2	Institutions	-	5,685	196	2,435	-	-	-	-	17	8,333
3	Corporates	43	541	72	3,896	30	1	329	3	1,662	6,577
4	Retail	-	-	-	-	-	-	-	-	-	-
5	Equity	-	3	42	2	-	2	-	-	620	669
5a	Non-credit obligation assets	-	-	-	-	-	-	-	-	-	-
6	***Total IRB approach***	**$ 49,099**	**$ 6,229**	**$ 310**	**$ 6,333**	**$ 30**	**$ 3**	**$ 329**	**$ 3**	**$ 2,299**	**$ 64,635**
7	Central governments or central banks	528	-	-	-	-	-	-	-	-	528
12	Institutions	-	-	-	-	-	-	-	-	-	-
13	Corporates	-	-	-	-	-	-	-	-	1,427	1,427
14	Retail	-	-	-	-	-	-	-	-	-	-
15	Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-
16	Exposures in default	-	-	-	-	-	-	-	-	-	-
17	Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-
21	Equity exposures	-	-	-	-	-	-	-	-	-	-
22	Other exposures	-	-	-	-	-	-	-	-	356	356
23	***Total standardised approach***	**$ 528**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**$ 1,783**	**$ 2,311**
24	***Total***	**$ 49,627**	**$ 6,229**	**$ 310**	**$ 6,333**	**$ 30**	**$ 3**	**$ 329**	**$ 3**	**$ 4,082**	**$ 66,946**

GSIB

	$ in millions										**As of December 2021**
		Sovereigns (including Central Banks)	**Banks**	**CCPs and Exchanges**	**Other Financials**	**Real Estate**	**Manufac turing**	**Transport, Utilities & Storage**	**Retail / Wholesale trade**	**Services and other Industries**	**Total**
1	Central governments or central banks	$ 10,440	-	-	-	-	-	-	-	0	$ 10,440
2	Institutions	-	359	-	8,119	-	-	-	-	0	8,478
3	Corporates	-	1	70	4,148	702	1,466	486	255	2,603	9,731
4	Retail	-	-	-	-	-	-	-	-	-	-
5	Equity	-	-	-	-	-	-	-	-	0	0
5a	Non-credit obligation assets	-	-	-	-	-	-	-	-	-	-
6	***Total IRB approach***	**$ 10,440**	**$ 360**	**$ 70**	**$ 12,267**	**$ 702**	**$ 1,466**	**$ 486**	**$ 255**	**$ 2,603**	**$ 28,649**
7	Central governments or central banks	2,633	-	-	-	-	-	-	-	-	2,633
12	Institutions	-	-	-	-	-	-	-	-	-	-
13	Corporates	-	-	-	-	-	-	-	-	80	80
14	Retail	-	-	-	-	-	-	-	-	10	10
15	Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	47	47
16	Exposures in default	-	-	-	-	-	-	6	-	-	6
17	Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-
21	Equity exposures	-	-	-	-	-	-	-	-	-	-
22	Other exposures	-	-	-	-	-	-	-	-	22	22
23	***Total standardised approach***	**$ 2,633**	**-**	**-**	**-**	**-**	**-**	**$ 6**	**-**	**$ 159**	**$ 2,798**
24	***Total***	**$ 13,073**	**$ 360**	**$ 70**	**$ 12,267**	**$ 702**	**$ 1,466**	**$ 492**	**$ 255**	**$ 2,762**	**$ 31,447**

The following three tables present GSGUK, GSI and GSIB's net values of on-balance-sheet and off-balance-sheet exposures by industry or counterparty types and exposure classes as of December 31, 2021.

Table 59: Maturity of Exposures

GSGUK

$ in millions		Net exposure value					As of December 2021
		On demand	**<= 1 Year**	**> 1 Year <= 5 Years**	**>5 years**	**No Stated Maturity**	**Total**
1	Central governments or central banks	$ 57,778	$ 604	$ 629	$ 529	-	$ 59,540
2	Institutions	1,767	6,878	912	65	-	9,622
3	Corporates	1,812	6,007	6,640	743	-	15,202
4	Retail	-	-	-	-	-	-
5	Equity	-	-		-	669	669
5a	Non-credit obligation assets	-	-	-	-	-	-
6	***Total IRB approach***	**$ 61,357**	**$ 13,489**	**$ 8,181**	**$ 1,337**	**$ 669**	**$ 85,033**
7	Central governments or central banks	-	551	-	2,611	-	3,162
12	Institutions	52	2,500	-	-	-	2,552
13	Corporates	-	1,606	-	73	-	1,679
14	Retail	-	-	10	86	-	96
15	Secured by mortgages on immovable property	-	-	47	61	-	108
16	Exposures in default	-	-	6	229	-	235
17	Items associated with particularly high risk	-	-	-	-	1,233	1,233
21	Equity exposures	-	177	-	-	-	177
22	Other exposures	29	488	-	-	-	517
23	***Total standardised approach***	**$ 81**	**$ 5,322**	**$ 63**	**$ 3,060**	**$ 1,233**	**$ 9,759**
24	***Total***	**$ 61,438**	**$ 18,811**	**$ 8,244**	**$ 4,397**	**$ 1,902**	**$ 94,792**

GSI

$ in millions		Net exposure value					As of December 2021
		On demand	**<= 1 Year**	**> 1 Year <= 5 Years**	**>5 years**	**No Stated Maturity**	**Total**
1	Central governments or central banks	$ 48,052	$ 410	$ 594	-	-	$ 49,056
2	Institutions	1,515	5,866	706	246	-	8,333
3	Corporates	328	5,309	908	32	-	6,577
4	Retail	-	-	-	-	-	-
5	Equity	-	-	-	-	669	669
5a	Non-credit obligation assets	-	-	-	-	-	-
6	***Total IRB approach***	**$ 49,895**	**$ 11,585**	**$ 2,208**	**$ 278**	**$ 669**	**$ 64,635**
7	Central governments or central banks	-	-	-	-	-	-
12	Institutions	-	-	-	-	-	-
13	Corporates	-	1,354	-	73	-	1,427
14	Retail	-	-	-	-	-	-
15	Secured by mortgages on immovable property	-	-	-	-	-	-
16	Exposures in default	-	-	-	-	-	-
17	Items associated with particularly high risk	-	-	-	-	-	-
21	Equity exposures	-	-	-	-	-	-
22	Other exposures	-	356	-	-	-	356
23	***Total standardised approach***	**-**	**$ 2,238**	**-**	**$ 73**	**-**	**$ 2,311**
24	***Total***	**$ 49,895**	**$ 13,823**	**$ 2,208**	**$ 351**	**$ 669**	**$ 66,946**

GSIB

$ in millions							As of December 2021
		Net exposure value					
		On demand	<= 1 Year	> 1 Year <= 5 Years	>5 years	No Stated Maturity	Total
1	Central governments or central banks	$ 9,682	$ 194	$ 35	$ 529	-	$ 10,440
2	Institutions	252	7,031	1,195	-	-	8,478
3	Corporates	1	1,841	6,796	1,093	-	9,731
4	Retail	-	-	-	-	-	-
5	Equity	-	-	-	-	-	-
5a	Non-credit obligation assets	-	-	-	-	-	-
6	***Total IRB approach***	**$ 9,935**	**$ 9,066**	**$ 8,026**	**$ 1,622**	**-**	**$ 28,649**
7	Central governments or central banks	-	23	-	2,610	-	2,633
12	Institutions	-	-	-	-	-	-
13	Corporates	-	80	-	-	-	80
14	Retail	-	-	10	-	-	10
15	Secured by mortgages on immovable property	-	-	47	-	-	47
16	Exposures in default	-	-	6	-	-	6
17	Items associated with particularly high risk	-	-	-	-	-	-
21	Equity exposures	-	-	-	-	-	-
22	Other exposures	-	22	-	-	-	22
23	***Total standardised approach***	**-**	**$ 125**	**$ 63**	**$ 2,610**	**-**	**$ 2,798**
24	***Total***	**$ 9,935**	**$ 9,191**	**$ 8,089**	**$ 4,232**	**-**	**$ 31,447**

Table 60: Credit Quality of Exposures by Exposure Class and Instrument

GSGUK

$ in millions								As of December 2021
		Gross carrying values of						
		Defaulted exposures[1]	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumu-lated write-offs	Credit risk adjustment charges of the period	Net values
1	Central governments or central banks	-	$ 59,540		-	-	-	$ 59,540
2	Institutions	-	9,623	1	-	-	-	9,622
3	Corporates	2	15,248	48	-	-	-	15,202
3a	Non-credit obligation assets	-	-	-	-	-	-	-
14	Equity	-	669	-	-	-	-	669
15	***Total IRB approach***	**$ 2**	**$ 85,080**	**$ 49**	**-**	**-**	**-**	**$ 85,033**
16	Central governments or central banks	-	3,162	-	-	-	-	3,162
21	Institutions	-	2,552	-	-	-	-	2,552
22	Corporates	-	1,679	-	-	-	-	1,679
24	Retail	-	96	-	-	-	-	96
26	Secured by mortgages on immovable property	-	108	-	-	-	-	108
28	Exposures in default	235	-	-	-	-	-	235
29	Items associated with particularly high risk	-	1,233	-	-	-	-	1,233
33	Equity exposures	-	177	-	-	-	-	177
34	Other exposures	-	517	-	-	-	-	517
35	***Total standardised approach***	**$ 235**	**$ 9,524**	**-**	**-**	**-**	**-**	**$ 9,759**
36	***Total***	**$ 237**	**$ 94,604**	**$ 49**	**-**	**-**	**-**	**$ 94,792**
37	Of which: Loans	271	5,101	41	**-**	**-**	**-**	5,331
38	Of which: Debt securities	54	4,364	-	**-**	**-**	**-**	4,418
39	Of which: Off- balance-sheet exposures	-	5,457	8	**-**	**-**	**-**	5,449

GSI

$ in millions								As of December 2021
		Gross carrying values of						
		Defaulted exposures[1]	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumu-lated write-offs	Credit risk adjustment charges of the period	Net values
1	Central governments or central banks	-	$ 49,056	-	-	-	-	$ 49,056
2	Institutions	82	8,251	-	-	-	-	8,333
3	Corporates	6	6,571	-	-	-	-	6,577
3a	Non-credit obligation assets							
14	Equity	4	665	-	-	-	-	669
15	***Total IRB approach***	**$ 92**	**$ 64,543**	**-**	**-**	**-**	**-**	**$ 64,635**
16	Central governments or central banks	-	528	-	-	-	-	528
21	Institutions							
22	Corporates		1,427	-	-	-	-	1,427
24	Retail							
26	Secured by mortgages on immovable property							
28	Exposures in default							
29	Items associated with particularly high risk							
33	Equity exposures							
34	Other exposures		356	-	-	-	-	356
35	***Total standardised approach***		**$ 2,311**	**-**	**-**	**-**	**-**	**$ 2,311**
36	***Total***	**$ 92**	**$ 66,854**	**-**	**-**	**-**	**-**	**$ 66,946**
37	Of which: Loans	34	42	**-**	**-**	**-**	**-**	76
38	Of which: Debt securities	54	312	**-**	**-**	**-**	**-**	366
39	Of which: Off- balance-sheet exposures	-	1,349	**-**	**-**	**-**	**-**	1,349

GSIB

$ in millions								As of December 2021
		Gross carrying values of						
		Defaulted exposures[1]	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumu-lated write-offs	Credit risk adjustment charges of the period	Net values
1	Central governments or central banks	-	$ 10,440		-	-	-	$ 10,440
2	Institutions	-	8,479	1	-	-	-	8,478
3	Corporates	2	9,777	48	-	-	-	9,731
3a	Non-credit obligation assets	-	-	-	-	-	-	-
14	Equity	-	0	-	-	-	-	0
15	***Total IRB approach***	**$ 2**	**$ 28,696**	**$ 49**	**-**	**-**	**-**	**$ 28,649**
16	Central governments or central banks	-	2,633	-	-	-	-	2,633
21	Institutions	-	-	-	-	-	-	-
22	Corporates	-	80	-	-	-	-	80
24	Retail	-	10	-	-	-	-	10
26	Secured by mortgages on immovable property	-	47	-	-	-	-	47
28	Exposures in default	6	-	-	-	-	-	6
29	Items associated with particularly high risk	-	-	-	-	-	-	-
33	Equity exposures	-	-	-	-	-	-	-
34	Other exposures	-	22	-	-	-	-	22
35	***Total standardised approach***	**$ 6**	**$ 2,792**	**-**	**-**	**-**	**-**	**$ 2,798**
36	***Total***	**$ 8**	**$ 31,488**	**$ 49**	**-**	**-**	**-**	**$ 31,447**
37	Of which: Loans	8	12,442	41	-	-	-	12,409
38	Of which: Debt securities	-	4,692	-	-	-	-	4,692
39	Of which: Off- balance-sheet exposures	-	4,108	8	-	-	-	4,100

[1]The defaulted exposures quantified in the tables above include positions where the obligor defaulted prior to our purchase of the position.

Table 61: Credit Quality of Exposures by Industry or Counterparty Types

GSGUK

$ in millions		Gross carrying values of						As of December 2021
		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
1	Central governments or central banks	-	$ 62,702	-	-	-	-	$ 62,702
2	Services and other Industries	2	7,611	34	-	-	-	7,579
3	Banks	-	6,600	0	-	-	-	6,600
4	Other Financials	-	13,301	8	-	-	-	13,293
5	CCPs and Exchanges	-	381	0	-	-	-	381
6	Manufacturing	-	1,473	4	-	-	-	1,469
7	Transport, Utilities & Storage	235	893	1	-	-	-	1,127
8	Retail / Wholesale trade	-	335	1	-	-	-	334
9	Real Estate	-	1,308	1	-	-	-	1,307
10	***Total***	**$ 237**	**$ 94,604**	**$ 49**	**-**	**-**	**-**	**$ 94,792**

GSI

$ in millions		Gross carrying values of						As of December 2021
		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
1	Central governments or central banks	-	$ 49,627	-	-	-	-	$ 49,627
2	Services and other Industries	3	4,079	-	-	-	-	4,082
3	Banks	85	6,144	-	-	-	-	6,229
4	Other Financials	-	6,333	-	-	-	-	$ 6,333
5	CCPs and Exchanges	-	310	-	-	-	-	310
6	Manufacturing	-	3	-	-	-	-	3
7	Transport, Utilities & Storage	-	329	-	-	-	-	329
8	Retail / Wholesale trade	-	3	-	-	-	-	3
9	Real Estate	4	26	-	-	-	-	30
10	***Total***	**$ 92**	**$ 66,854**	**-**	**-**	**-**	**-**	**$ 66,946**

GSIB

$ in millions		Gross carrying values of						As of December 2021
		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
1	Central governments or central banks	-	$ 13,073	-	-	-	-	$ 13,073
2	Services and other Industries	2	2,825	34	-	-	-	2,793
3	Banks	-	361	0	-	-	-	361
4	Other Financials	-	12,228	8	-	-	-	12,220
5	CCPs and Exchanges	-	71	0	-	-	-	71
6	Manufacturing	-	1,478	4	-	-	-	1,474
7	Transport, Utilities & Storage	6	487	1	-	-	-	492
8	Retail / Wholesale trade	-	260	1	-	-	-	259
9	Real Estate	-	705	1	-	-	-	704
10	***Total***	**$ 8**	**$ 31,488**	**$ 49**	**-**	**-**	**-**	**$ 31,447**

Table 62: Credit Quality of Exposures by Geography

GSGUK

$ in millions — **As of December 2021**

		Gross carrying values of Defaulted exposures	Gross carrying values of Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
1	EMEA	$ 237	$ 81,996	$ 44	-	-	-	$ 82,189
2	France	-	43,012	1	-	-	-	43,011
3	United Kingdom	-	20,010	14	-	-	-	19,996
4	Other Countries	237	18,974	29	-	-	-	19,182
5	Asia	-	3,848	1	-	-	-	3,847
6	Australia	-	1,397	0	-	-	-	1,397
7	Other Countries	-	2,451	1	-	-	-	2,450
8	Americas	-	8,760	4	-	-	-	8,756
9	United States	-	6,962	0	-	-	-	6,962
10	Other Countries	-	1,798	4	-	-	-	1,794
12	***Total***	**$ 237**	**$ 94,604**	**$ 49**	**-**	**-**	**-**	**$ 94,792**

GSI

$ in millions — **As of December 2021**

		Gross carrying values of Defaulted exposures	Gross carrying values of Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
1	EMEA	$ 88	$ 59,312	-	-	-	-	$ 59,400
2	France	-	42,509	-	-	-	-	42,509
3	United Kingdom	1	12,121	-	-	-	-	12,122
4	Other Countries	87	4,682	-	-	-	-	4,769
5	Asia	-	3,282	-	-	-	-	3,282
6	Australia	-	1,289	-	-	-	-	1,289
7	Other Countries	-	1,993	-	-	-	-	1,993
8	Americas	4	4,260	-	-	-	-	4,264
9	United States	-	3,018	-	-	-	-	3,018
10	Other Countries	4	1,242	-	-	-	-	1,246
12	***Total***	**$ 92**	**$ 66,854**	**-**	**-**	**-**	**-**	**$ 66,946**

GSIB

$ in millions — **As of December 2021**

		Gross carrying values of Defaulted exposures	Gross carrying values of Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
1	EMEA	$ 8	$ 29,320	$ 44	-	-	-	$ 29,284
2	United Kingdom	-	15,428	14	-	-	-	15,414
3	Germany	-	8,744	4	-	-	-	8,740
4	Other Countries	8	5,147	25	-	-	-	5,130
5	Asia	-	504	1	-	-	-	503
6	Japan	-	261	0	-	-	-	261
7	Other Countries	-	243	1	-	-	-	242
8	Americas	-	1,664	4	-	-	-	1,660
9	United States	-	1,168	0	-	-	-	1,168
10	Other Countries	-	496	4	-	-	-	492
12	***Total***	**$ 8**	**$ 31,488**	**$ 49**	**-**	**-**	**-**	**$ 31,447**

Table 63: Credit Quality of Performing and Non-performing Exposures by Past Due Days

GSGUK

$ millions													December 2021
		Gross carrying amount / Nominal amount											
		Performing exposures			Non-performing exposures								
			Not past due or Past due <= 30 days	Past due > 30 days <= 90 days		Unlikely to pay that are not past-due or past-due <= 90 days	Past due > 90 days <= 180 days	Past due > 180 days <= 1 year	Past due > 1 year <= 2 years	Past due > 2 year <= 5 years	Past due > 5 year <= 7 years	Past due > 7 years	Of which default-ed
010	Loans and advances	$ 381,552	$ 381,552	-	$ 58	$ 2	-	$ 0	-	-	$ 56	-	$ 58
020	*Central banks*	12,741	12,741	-	-	-	-	-	-	-	-	-	-
030	*General governments*	3,649	3,649	-	-	-	-	-	-	-	-	-	-
040	*Credit institutions*	42,133	42,133	-	56	-	-	-	-	-	56	-	56
050	*Other financial corporations*	317,029	317,029	-	0	-	-	0	-	-	-	-	0
060	*Non-financial corporations*	4,567	4,567	-	2	2	-	-	-	-	-	-	2
070	*Of which SMEs*	-	-	-	-	-	-	-	-	-	-	-	-
080	*Households*	1,433	1,433	-	-	-	-	-	-	-	-	-	-
090	Debt Securities	3,528	3,528	-	74	19	-	-	-	0	-	54	74
100	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-
110	*General governments*	2,669	2,669	-	-	-	-	-	-	-	-	-	-
120	*Credit institutions*	3	3	-	52	-	-	-	-	-	-	52	52
130	*Other financial corporations*	597	597	-	-	-	-	-	-	-	-	-	-
140	*Non-financial corporations*	259	259	-	22	19	-	-	-	0	-	2	22
150	Off-balance sheet exposures	5,968			-								-
160	*Central banks*	-			-								-
170	*General governments*	-			-								-
180	*Credit institutions*	402			-								-
190	*Other financial corporations*	2,744			-								-
200	*Non-financial corporations*	2,804			-								-
210	*Households*	18			-								-
220	**Total**	**$ 391,048**	**$ 385,080**	**-**	**$ 132**	**$ 21**	**-**	**$ 0**	**-**	**$ 0**	**$ 56**	**$ 54**	**$ 132**

GSI

$ millions													December 2021
		Gross carrying amount / Nominal amount											
		Performing exposures			Non-performing exposures								
			Not past due or Past due <= 30 days	Past due > 30 days <= 90 days		Unlikely to pay that are not past-due or past-due <= 90 days	Past due > 90 days <= 180 days	Past due > 180 days <= 1 year	Past due > 1 year <= 2 years	Past due > 2 year <= 5 years	Past due > 5 year <= 7 years	Past due > 7 years	Of which default-ed
010	Loans and advances	$ 346,795	$ 346,795	-	$ 56	-	-	0	-	-	$ 56	-	$ 56
020	*Central banks*	12,570	12,570	-	-	-	-	-	-	-	-	-	-
030	*General governments*	3,648	3,648	-	-	-	-	-	-	-	-	-	-
040	*Credit institutions*	42,277	42,277	-	56	-	-	-	-	-	56	-	56
050	*Other financial corporations*	286,561	286,561	-	0	-	-	0	-	-	-	-	0
060	*Non-financial corporations*	1,481	1,481	-	-	-	-	-	-	-	-	-	-
070	*Of which SMEs*	-	-	-	-	-	-	-	-	-	-	-	-
080	*Households*	258	258	-	-	-	-	-	-	-	-	-	-
090	Debt Securities	104	104	-	74	19	-	-	-	0	-	54	74
100	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-
110	*General governments*	-	-	-	-	-	-	-	-	-	-	-	-
120	*Credit institutions*	3	3	-	52	-	-	-	-	-	-	52	52
130	*Other financial corporations*	56	56	-	-	-	-	-	-	-	-	-	-
140	*Non-financial corporations*	45	45	-	22	19	-	-	-	0	-	2	22
150	Off-balance sheet exposures	1,958			-								-
160	*Central banks*	-			-								-
170	*General governments*	-			-								-
180	*Credit institutions*	402			-								-
190	*Other financial corporations*	1,556			-								-
200	*Non-financial corporations*	-			-								-
210	*Households*	-			-								-
220	**Total**	**$ 348,857**	**$ 346,899**	**-**	**$ 130**	**$ 19**	**-**	**$ 0**	**-**	**$ 0**	**$ 56**	**$ 54**	**$ 130**

GSIB

$ millions													December 2021
		Gross carrying amount / Nominal amount											
		Performing exposures			Non-performing exposures								
			Not past due or Past due <= 30 days	Past due > 30 days <= 90 days		Unlikely to pay that are not past-due or past-due <= 90 days	Past due > 90 days <= 180 days	Past due > 180 days <= 1 year	Past due > 1 year <= 2 years	Past due > 2 year <= 5 years	Past due > 5 year <= 7 years	Past due > 7 years	Of which default-ed
010	Loans and advances	$ 68,383	$ 68,383	-	$ 2	$ 2	-	-	-	-	-	-	$ 2
020	*Central banks*	172	172	-	-	-	-	-	-	-	-	-	-
030	*General governments*	1	1	-	-	-	-	-	-	-	-	-	-
040	*Credit institutions*	185	185	-	-	-	-	-	-	-	-	-	-
050	*Other financial corporations*	64,145	64,145	-	-	-	-	-	-	-	-	-	-
060	*Non-financial corporations*	3,083	3,083	-	2	2	-	-	-	-	-	-	2
070	*Of which SMEs*	-	-	-	-	-	-	-	-	-	-	-	-
080	*Households*	797	797	-	-	-	-	-	-	-	-	-	-
090	Debt Securities	5,079	5,079	-	-	-	-	-	-	-	-	-	-
100	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-
110	*General governments*	2,668	2,668	-	-	-	-	-	-	-	-	-	-
120	*Credit institutions*	-	-	-	-	-	-	-	-	-	-	-	-
130	*Other financial corporations*	2,411	2,411	-	-	-	-	-	-	-	-	-	-
140	*Non-financial corporations*	-	-	-	-	-	-	-	-	-	-	-	-
150	Off-balance sheet exposures	4,010			-								-
160	*Central banks*	-			-								-
170	*General governments*	-			-								-
180	*Credit institutions*	-			-								-
190	*Other financial corporations*	1,188			-								-
200	*Non-financial corporations*	2,804			-								-
210	*Households*	18			-								-
220	**Total**	**$ 77,472**	**$ 73,462**	**-**	**$ 2**	**$ 2**	**-**	**-**	**-**	**-**	**-**	**-**	**$ 2**

Table 64: Performing and Non-performing Exposures and Related Provisions

GSGUK

	$ millions															Dec 2021
		Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Accumulated partial write-off	Collateral and financial guarantees received	
		Performing exposures			Non-performing exposures			Performing exposures – accumulated impairment and provisions			Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions				On performing exposures	On non-performing exposures
			Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3		Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3			
1	Loans and advances	$ 381,552	$ 381,406	$ 146	$ 58	-	$ 2	$ 50	$ 32	$ 18	$ 23	-	$ 1	$ 11	$ 299,171	-
2	*Central banks*	12,741	12,741	-	-	-	-	-	-	-	-	-	-	-	11,761	-
3	*General governments*	3,649	3,649	-	-	-	-	-	-	-	-	-	-	-	2,885	-
4	*Credit institutions*	42,133	42,133	-	56	-	-	-	-	-	22	-	-	-	23,451	-
5	*Other financial corporations*	317,029	316,993	37	0	-	-	11	10	1	-	-	-	-	258,342	-
6	*Non-financial corporations*	4,567	4,457	109	2	-	2	32	15	17	1	-	1	11	1,422	-
7	*Of which SMEs*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	*Households*	1,433	1,433	-	-	-	-	7	7	-	-	-	-	-	1,310	-
9	Debt securities	3,528	3,528	-	74	-	-	-	-	-	17	-	-	-	-	-
10	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	*General governments*	2,669	2,669	-	-	-	-	-	-	-	-	-	-	-	-	-
12	*Credit institutions*	3	3	-	52	-	-	-	-	-	1	-	-	-	-	-
13	*Other financial corporations*	597	597	-	-	-	-	-	-	-	-	-	-	-	-	-
14	*Non-financial corporations*	259	259	-	22	-	-	-	-	-	16	-	-	-	-	-
15	Off-balance-sheet exposures	5,968	5,888	80	-	-	-	9	5	3	-	-	-		-	-
16	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
17	*General governments*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
18	*Credit institutions*	402	402	-	-	-	-	-	-	-	-	-	-		-	-
19	*Other financial corporations*	2,744	2,744	-	-	-	-	1	1	-	-	-	-		-	-
20	*Non-financial corporations*	2,804	2,724	80	-	-	-	8	4	3	-	-	-		-	-
21	*Households*	**$ 18**	**$ 18**	**-**	**-**	**-**	**-**	**$ 0**	**$ 0**	**-**	**-**	**-**	**-**		-	-
22	**Total**	**$ 391,048**	**$ 390,822**	**$ 226**	**$ 132**	**-**	**$ 2**	**$ 41**	**$ 27**	**$ 15**	**$ 40**	**-**	**$ 1**	**$ 11**	**$ 299,171**	**-**

GSI

	$ millions															**Dec 2021**
		Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Accumu-lated partial write-off	Collateral and financial guarantees received	
		Performing exposures			Non-performing exposures			Performing exposures – accumulated impairment and provisions			Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions				On performing exposures	On non-performing exposures
			Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3		Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3			
1	Loans and advances	$ 346,795	$ 346,795	-	$ 56	-	-	-	-	-	$ 22	-	-	-	$ 270,248	-
2	*Central banks*	12,570	12,570	-	-	-	-	-	-	-	-	-	-	-	11,761	-
3	*General governments*	3,648	3,648	-	-	-	-	-	-	-	-	-	-	-	2,885	-
4	*Credit institutions*	42,277	42,277	-	56	-	-	-	-	-	22	-	-	-	23,467	-
5	*Other financial corporations*	286,561	286,561	-	0	-	-	-	-	-	-	-	-	-	231,884	-
6	*Non-financial corporations*	1,481	1,481	-	-	-	-	-	-	-	-	-	-	-	109	-
7	*Of which SMEs*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	*Households*	258	258	-	-	-	-	-	-	-	-	-	-	-	142	-
9	Debt securities	104	104	-	74	-	-	-	-	-	17	-	-	-	-	-
10	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	*General governments*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	*Credit institutions*	3	3	-	52	-	-	-	-	-	1	-	-	-	-	-
13	*Other financial corporations*	56	56	-	-	-	-	-	-	-	-	-	-	-	-	-
14	*Non-financial corporations*	45	45	-	22	-	-	-	-	-	16	-	-	-	-	-
15	Off-balance-sheet exposures	1,958	1,958	-	-	-	-	-	-	-	-	-	-		-	-
16	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
17	*General governments*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
18	*Credit institutions*	402	402	-	-	-	-	-	-	-	-	-	-		-	-
19	*Other financial corporations*	1,556	1,556	-	-	-	-	-	-	-	-	-	-		-	-
20	*Non-financial corporations*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
21	*Households*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
22	**Total**	**$ 348,857**	**$ 348,857**	**-**	**$ 130**	**-**	**-**	**-**	**-**	**-**	**$ 39**	**-**	**-**	**-**	**$ 270,248**	**-**

GSIB

	$ millions															Dec 2021
		Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Accumu-lated partial write-off	Collateral and financial guarantees received	
		Performing exposures			Non-performing exposures			Performing exposures – accumulated impairment and provisions			Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions				On performing exposures	On non-performing exposures
			Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3		Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3			
1	Loans and advances	$ 68,383	$ 68,236	$ 146	$ 2	-	$ 2	$ 50	$ 32	$ 18	$ 1	-	$ 1	$ 11	$ 58,784	-
2	*Central banks*	172	172	-	-	-	-	-	-	-	-	-	-	-	-	-
3	*General governments*	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
4	*Credit institutions*	185	185	-	-	-	-	-	-	-	-	-	-	-	-	-
5	*Other financial corporations*	64,145	64,108	37	-	-	-	11	10	1	-	-	-	-	56,680	-
6	*Non-financial corporations*	3,083	2,973	109	2	-	2	32	15	17	1	-	1	11	1,314	-
7	*Of which SMEs*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	*Households*	797	797	-	-	-	-	7	7	-	-	-	-	-	790	-
9	Debt securities	5,079	5,079	-	-	-	-	-	-	-	-	-	-	-	-	-
10	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	*General governments*	2,668	2,668	-	-	-	-	-	-	-	-	-	-	-	-	-
12	*Credit institutions*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	*Other financial corporations*	2,411	2,411	-	-	-	-	-	-	-	-	-	-	-	-	-
14	*Non-financial corporations*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Off-balance-sheet exposures	4,010	3,930	80	-	-	-	9	5	3	-	-	-		-	-
16	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
17	*General governments*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
18	*Credit institutions*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
19	*Other financial corporations*	1,188	1,188	-	-	-	-	1	1	-	-	-	-		-	-
20	*Non-financial corporations*	2,804	2,724	80	-	-	-	8	4	3	-	-	-		-	-
21	*Households*	18	18	-	-	-	-	0	0	-	-	-	-		-	-
22	**Total**	**$ 77,472**	**$ 77,245**	**$ 226**	**$ 2**	**-**	**$ 2**	**$ 59**	**$ 37**	**$ 21**	**$ 1**	**-**	**$ 1**	**$ 11**	**$ 58,784**	**-**

Table 65: Collateral Obtained by Taking Possession and Execution Processes

GSGUK

	As of December 2021	
	Collateral obtained by taking possession accumulated	
$ in millions	Value at initial recognition	Accumulated negative changes
Property Plant and Equipment (PP&E)	-	-
Other than Property Plant and Equipment	25	3
Residential immovable property	-	-
Commercial Immovable property	-	-
Movable property (auto, shipping, etc.)	-	-
Equity and debt instruments	25	3
Other	-	-
Total	**$ 25**	**$3**

GSI

	As of December 2021	
	Collateral obtained by taking possession accumulated	
$ in millions	Value at initial recognition	Accumulated negative changes
Property Plant and Equipment (PP&E)	-	-
Other than Property Plant and Equipment	25	3
Residential immovable property	-	-
Commercial Immovable property	-	-
Movable property (auto, shipping, etc.)	-	-
Equity and debt instruments	25	3
Other	-	-
Total	**$ 25**	**$3**

Table 66: IRB (Equity Exposures Subject to the Simple Risk - Weighted Approach)[1]

GSGUK

$ in millions						As of December 2021
	Equities under the simple risk-weighted approach					
Categories	**On BS amount**	**Off BS amount**	**Risk Weight**	**Exposure Amount**	**RWAs**	**Capital Requirements**
Exchange-traded equity exposures	$ 593	-	290%	$ 593	$ 1,721	$ 138
Other Equity Exposures	$ 76	-	370%	$ 76	$ 280	$ 22
Total	**$ 669**	**-**		**$ 669**	**$ 2,001**	**$ 160**

GSI

$ in millions						As of December 2021
	Equities under the simple risk-weighted approach					
Categories	**On BS amount**	**Off BS amount**	**Risk Weight**	**Exposure Amount**	**RWAs**	**Capital Requirements**
Exchange-traded equity exposures	$ 593	-	290%	$ 593	$ 1,721	$ 138
Other Equity Exposures	$ 76	-	370%	$ 76	$ 280	$ 22
Total	**$ 669**	**-**		**$ 669**	**$ 2,001**	**$ 160**

1. GSGUK and its subsidiaries do not have private equity exposures which are risk-weighted at 190%.

Table 67: IRB Approach - Credit Risk Exposures by Exposure Class and PD Range

GSGUK

$ in millions — **As of December 2021**

PD Scale	Original on - BS gross exposures	Off-BS exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of Obligors	Average LGD	Average Maturity	RWAs	RWA density	EL	Value Adjustments and provisions
Central governments or central banks												-
0.00 to <0.15	$ 59,508	-	100%	$ 59,508	0.0003	28	0.5000	1.0406	$ 4,809	8%	8	-
0.15 to <0.25	2	-	100%	2	0.0018	5	0.5000	1.0000	1	33%	0	-
0.25 to <0.50	0	-	100%	0	0.0026	1	0.5000	1.0000	0	42%	0	-
0.50 to <0.75	30	-	100%	30	0.0067	2	0.5000	1.0000	22	72%	0	-
0.75 to <2.50	-	-	-	-	-	-	-	-	-	-	-	-
2.50 to <10.00	-	-	-	-	-	-	-	-	-	-	-	-
10.00 to <100.00	-	-	-	-	-	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	**$ 59,540**	**-**	**100%**	**$ 59,540**	**0.0003**	**36**	**0.5000**	**1.0406**	**$ 4,832**	**8%**	**$ 8**	
Institutions												-
0.00 to <0.15	8,104	121	100%	8,195	0.0006	217	0.5937	1.1527	2,040	25%	$ 3	
0.15 to <0.25	465	-	100%	465	0.0017	44	0.6540	1.0011	261	61%	1	-
0.25 to <0.50	65	-	100%	65	0.0026	18	0.6451	1.0000	47	78%	0	-
0.50 to <0.75	550	-	100%	550	0.0067	18	0.6765	1.1235	702	152%	3	-
0.75 to <2.50	32	-	100%	32	0.0156	12	0.6540	1.0000	48	173%	0	-
2.50 to <10.00	137	-	100%	137	0.0919	15	0.5785	2.1678	393	253%	7	1
10.00 to <100.00	23	-	100%	23	0.2378	24	0.6112	1.1768	85	379%	3	-
100.00 (Default)	82	-	100%	82	0.9990	3	0.6782	3.3752	237	18%	-	-
Subtotal	**9,458**	**121**	**100%**	**9,549**	**0.0114**	**351**	**0.6025**	**1.1757**	**$ 3,813**	**40%**	**$ 17**	**$1**
Corporates												
0.00 to <0.15	2,662	944	94%	3,490	0.0005	703	0.5974	1.5870	878	25%	1	-
0.15 to <0.25	1,928	648	95%	3,086	0.0018	247	0.7016	1.4051	1,892	61%	4	-
0.25 to <0.50	934	706	89%	1,463	0.0026	140	0.5561	2.9783	1,146	78%	2	1
0.50 to <0.75	827	724	93%	2,475	0.0064	122	0.7827	1.7770	3,760	152%	-	1
0.75 to <2.50	1,866	478	97%	3,229	0.0150	509	0.6322	2.0193	5,602	173%	-	6
2.50 to <10.00	1,139	1,751	86%	2,501	0.0795	73	0.5838	2.7417	6,319	253%	-	17
10.00 to <100.00	475	160	94%	595	0.2061	176	0.5981	2.3317	2,253	379%	-	22
100.00 (Default)	8	-	100%	8	0.9993	8	0.5425	1.0000	1	18%	-	1
Subtotal	**$ 9,839**	**$ 5,411**	**93%**	**$ 16,847**	**0.0240**	**1,978**	**0.6448**	**1.9827**	**$ 21,851**	**130%**	**$ 7**	**$48**
Total (all portfolios)	**$ 78,837**	**$ 5,532**	**98%**	**$ 85,936**	**0.0062**	**2,365**	**0.5398**	**1.2404**	**$ 30,496**	**35%**	**$ 32**	**$49**

GSI

PD Scale	Original on - BS gross exposures	Off-BS exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of Obligors	Average LGD	Average Maturity	RWAs	RWA density	EL	Value Adjustments and provisions
$ in millions												**As of December 2021**
Central governments or central banks												
0.00 to <0.15	$ 49,053	-	-	$ 49,053	0.0003	24	0.5000	1.0058	$ 4,329	9%	7	-
0.15 to <0.25	2	-	-	2	0.0018	3	0.5000	1.0000	1	33%	0	-
0.25 to <0.50	0	-	-	0	0.0026	1	0.5000	1.0000	0	42%	0	-
0.50 to <0.75	-	-	-	-	-	-	-	-	-	-	-	-
0.75 to <2.50	-	-	-	-	-	-	-	-	-	-	-	-
2.50 to <10.00	-	-	-	-	-	-	-	-	-	-	-	-
10.00 to <100.00	-	-	-	-	-	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	**$ 49,055**	**-**	**-**	**$ 49,055**	**0.0003**	**28**	**0.5000**	**1.0058**	**$ 4,330**	**9%**	**$ 7**	**-**
Institutions												
0.00 to <0.15	7,131	-	-	7,131	0.0006	194	0.6220	1.2477	$ 1,913	27%	$ 2	-
0.15 to <0.25	447	-	-	447	0.0017	42	0.6539	1.0011	251	56%	1	-
0.25 to <0.50	65	-	-	65	0.0026	18	0.6451	1.0000	47	72%	0	-
0.50 to <0.75	478	-	-	478	0.0067	17	0.6847	1.0000	607	127%	2	-
0.75 to <2.50	32	-	-	32	0.0156	12	0.6540	1.0000	48	151%	0	-
2.50 to <10.00	76	-	-	76	0.0954	13	0.6391	1.0769	233	305%	5	-
10.00 to <100.00	22	-	-	22	0.2378	23	0.6129	1.1794	84	378%	3	-
100.00 (Default)	82	-	-	82	0.9990	3	0.6782	3.3752	237	289%	-	-
Subtotal	**$ 8,333**	**-**	**-**	**$ 8,333**	**0.0124**	**322**	**0.6283**	**1.2366**	**$ 3,420**	**41%**	**$ 13**	**-**
Corporates												
0.00 to <0.15	1,956	-	-	1,956	0.0005	672	0.6266	1.0736	$ 439	22%	1	-
0.15 to <0.25	2,413	-	-	2,413	0.0018	223	0.7319	1.0999	1,469	61%	3	-
0.25 to <0.50	250	-	-	250	0.0026	110	0.6220	1.0000	166	66%	1	-
0.50 to <0.75	1,592	260	-	1,804	0.0064	98	0.8637	1.3445	2,912	161%	10	-
0.75 to <2.50	1,807	-	-	1,807	0.0161	483	0.6923	1.0617	3,172	176%	20	-
2.50 to <10.00	141	1,089	-	1,033	0.0906	27	0.6942	1.3137	2,992	290%	64	-
10.00 to <100.00	357	-	-	357	0.2378	120	0.6823	1.7282	1,510	422%	58	-
100.00 (Default)	6	-	-	6	0.9990	6	0.5609	1.0000	-	0%	-	-
Subtotal	**$ 8,522**	**$ 1,349**	**-**	**$ 9,626**	**0.0240**	**1,739**	**0.7189**	**1.1768**	**$ 12,660**	**132%**	**$ 157**	-
Total (all portfolios)	**$ 65,910**	**$ 1,349**	-	**$ 67,014**	**0.0052**	**2,089**	**0.5474**	**1.0591**	**$ 20,410**	**30%**	**$ 177**	**-**

GSIB

$ in millions **As of December 2021**

PD Scale	Original on - BS gross exposures	Off-BS exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of Obligors	Average LGD	Average Maturity	RWAs	RWA density	EL	Value Adjustments and provisions
Central governments or central banks												
0.00 to <0.15	$ 10,410	-	100%	$ 10,410	0.0002	10	0.5000	1.2046	$ 480	0%	1	-
0.15 to <0.25	0	-	100%	0	0.0018	4	0.5000	1.0000	0	33%	0	-
0.25 to <0.50	-	-	-	-	-	-	-	-	-	0%	-	-
0.50 to <0.75	30	-	100%	30	0.0067	10	0.5000	1.0000	22	72%	0	-
0.75 to <2.50	-	-	-	-	-	-	-	-	-	-	-	-
2.50 to <10.00	-	-	-	-	-	-	-	-	-	0%	-	-
10.00 to <100.00	-	-	-	-	-	-	-	-	-	0%	-	-
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	**$ 10,440**	**-**	**100%**	**$ 10,440**	**0.0002**	**24**	**0.5000**	**1.2040**	**$ 502**	**5%**	**$ 1**	**-**
Institutions												
0.00 to <0.15	8,184	144	100%	8,292	0.0006	104	0.5200	1.2105	269	3%	0	-
0.15 to <0.25	18	-	100%	18	0.0017	14	0.6569	1.0000	10	56%	0	-
0.25 to <0.50	-	-	-	-	-	-	-	-	-	0%	-	-
0.50 to <0.75	72	-	100%	72	0.0067	9	0.6217	1.9463	95	133%	0	-
0.75 to <2.50	0	-	100%	0	0.0237	1	0.6438	1.0000	0	190%	0	-
2.50 to <10.00	61	-	100%	61	0.0876	3	0.5027	3.5318	160	262%	3	1
10.00 to <100.00	0	-	100%	0	0.2378	2	0.5000	1.0000	1	272%	0	-
100.00 (Default)	-	-		-	-	-	-	-	-		-	-
Subtotal	**$ 8,335**	**$ 144**	**91%**	**$ 8,443**	**0.0732**	**133**	**0.5017**	**3.7466**	**$ 535**	**227%**	**$ 3**	**$ 1**
Corporates												
0.00 to <0.15	872	944	87%	1,580	0.0005	34	0.5632	2.2055	449	28%	0	-
0.15 to <0.25	1,331	648	92%	1,817	0.0017	23	0.5382	2.0354	1,026	56%	2	-
0.25 to <0.50	684	706	87%	1,213	0.0026	32	0.5425	3.3861	980	81%	2	1
0.50 to <0.75	700	441	90%	1,031	0.0062	22	0.5402	3.6586	1,432	139%	3	1
0.75 to <2.50	1,064	478	92%	1,422	0.0176	99	0.5543	3.2359	2,430	171%	14	6
2.50 to <10.00	1,027	587	91%	1,468	0.0732	54	0.5017	3.7466	3,327	227%	54	17
10.00 to <100.00	134	160	87%	254	0.2378	73	0.5118	3.3529	802	316%	31	22
100.00 (Default)	2	-	100%	2	1.0000	3	0.4899	1.0000	1	69%	-	1
Subtotal	**$ 5,814**	**$ 3,964**	**90%**	**$ 8,787**	**0.0237**	**340**	**0.5393**	**2.9609**	**$ 10,447**	**119%**	**$ 106**	**$ 48**
Total (all portfolios)	**$ 24,589**	**$ 4,108**	**100%**	**$ 27,670**	**0.0067**	**497**	**0.5000**	**1.0000**	**$ 11,484**	**72%**	**$ 110**	**$ 49**

Table 68: IRB Approach - Backtesting of PD per Exposure Class

GSGUK

	PD Range		External rating equivalent		Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate (5 years)
Exposure class	Min	Max	Min	Max			End of the previous year[2]	End of the year			
Central governments or central banks	0.01%	23.78%	AAA	CCC	0.03%	0.09%	40	36	-	-	0.00%
Institutions	0.03%	23.78%	AAA	CCC	0.19%	2.09%	939	367	3	1	0.99%
Corporates	0.03%	23.78%	AAA	CCC	2.35%	2.89%	1,241	1,985	11	-	1.61%

GSI

	PD Range		External rating equivalent		Weighted average PD	Arithmetic average PD by obligors	Number of obligors[1]		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate (5 years)
Exposure class	Min	Max	Min	Max			End of the previous year[2]	End of the year			
Central governments or central banks	0.01%	23.78%	AAA	CCC	0.03%	0.05%	18	28	-	-	0.00%
Institutions	0.03%	23.78%	AAA	CCC	0.26%	2.23%	865	319	2	-	1.32%
Corporates	0.03%	23.78%	AAA	CCC	2.34%	2.29%	891	1,733	8	-	2.17%

GSIB

	PD Range		External rating equivalent		Weighted average PD	Arithmetic average PD by obligors	Number of obligors[1]		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate (5 years)
Exposure class	Min	Max	Min	Max			End of the previous year[2]	End of the year			
Central governments or central banks	0.01%	23.78%	AAA	CCC	0.02%	0.18%	22	10	-	-	0.00%
Institutions	0.03%	23.78%	AAA	CCC	0.13%	0.89%	74	64	1	1	0.27%
Corporates	0.03%	23.78%	AAA	CCC	2.35%	7.07%	350	254	3	-	0.79%

1. Defaulted counterparties are excluded from the number of obligors
2. The year on year delta for number of obligors is primarily driven by reclassification of certain counterparties from Institutions to Corporates

Table 69: Exposure-Weighted Average LGD and PD by Geography

GSGUK

GSGUK							As of December 2021
		LGD			PD		
		EMEA	Americas	Asia	EMEA	Americas	Asia
1	Central governments or central banks	50.00%	50.00%	50.00%	0.03%	0.01%	0.02%
2	Institutions	65.71%	51.08%	64.68%	0.47%	0.12%	0.11%
3	Corporates	59.68%	77.31%	62.57%	2.23%	1.59%	4.59%

GSI							
		LGD			PD		
		EMEA	Americas	Asia	EMEA	Americas	Asia
1	Central governments or central banks	50.00%	50.00%	50.00%	0.03%	0.01%	0.02%
2	Institutions	66.02%	56.09%	64.68%	2.16%	0.15%	0.11%
3	Corporates	65.96%	80.59%	65.19%	1.78%	1.73%	5.60%

GSIB							
		LGD			PD		
		EMEA	Americas	Asia	EMEA	Americas	Asia
1	Central governments or central banks	50.00%	50.00%	-	0.02%	0.01%	-
2	Institutions	53.91%	38.45%	64.74%	0.14%	0.06%	0.06%
3	Corporates	54.70%	44.48%	53.37%	2.28%	4.29%	1.06%

Table 70: Standardised Approach - Credit Risk Exposure and CRM Effects

GSGUK

$ in millions							As of December 2021
		Exposures before CCF and CRM		Exposures post CCF and CRM		RWAs and RWA density	
	Exposure classes	On-balance-sheet amount	Off-balance-sheet amount	On-balance-sheet amount	Off-balance-sheet amount	RWAs	RWA density
1	Central governments or central banks	$ 3,161	-	$ 3,161	-	$ 1,379	44%
6	Institutions	2,552	-	2,552	-	1,260	49%
7	Corporates	1,679	-	1,679	-	1,991	119%
8	Retail	96	-	96	-	72	75%
9	Secured by mortgages on immovable property	108	-	108	-	38	35%
10	Exposures in default	235	-	235	-	300	127%
11	Higher-risk categories	1,233	-	1,233	-	1,850	150%
15	Equity	177	-	177	-	177	100%
16	Other items	517	-	517	-	517	100%
17	**Total**	**$ 9,758**	**-**	**$ 9,758**	**-**	**$ 7,584**	**78%**

GSI

$ in millions							As of December 2021
		Exposures before CCF and CRM		Exposures post CCF and CRM		RWAs and RWA density	
	Exposure classes	On-balance-sheet amount	Off-balance-sheet amount	On-balance-sheet amount	Off-balance-sheet amount	RWAs	RWA density
1	Central governments or central banks	$ 528	-	$ 528	-	$ 1,321	250%
6	Institutions	-	-	-	-	-	-
7	Corporates	1,427	-	1,427	-	1,739	122%
8	Retail	-	-	-	-	-	-
9	Secured by mortgages on immovable property	-	-	-	-	-	-
10	Exposures in default	-	-	-	-	-	-
11	Higher-risk categories	-	-	-	-	-	-
15	Equity	-	-	-	-	-	-
16	Other items	356	-	356	-	356	100%
17	**Total**	**$ 2,311**	**-**	**$ 2,311**	**-**	**$ 3,416**	**148%**

GSIB

$ in millions							As of December 2021
		Exposures before CCF and CRM		Exposures post CCF and CRM		RWAs and RWA density	
	Exposure classes	On-balance-sheet amount	Off-balance-sheet amount	On-balance-sheet amount	Off-balance-sheet amount	RWAs	RWA density
1	Central governments or central banks	$ 2,633	-	$ 2,633	-	$ 57	2%
6	Institutions	-	-	-	-	-	-
7	Corporates	80	-	80	-	80	100%
8	Retail	10	-	10	-	7	75%
9	Secured by mortgages on immovable property	47	-	47	-	16	35%
10	Exposures in default	6	-	6	-	7	105%
11	Higher-risk categories	-	-	-	-	-	-
15	Equity	-	-	-	-	-	-
16	Other items	23	-	23	-	23	100%
17	**Total**	**$ 2,799**	**-**	**$ 2,799**	**-**	**$ 190**	**7%**

Table 71: Standardised Approach

GSGUK

$ in millions												As of December 2021
		Risk weight										
	Exposure classes	0%	20%	35%	50%	75%	100%	150%	250%	1250%	Total	Of which unrated
1	Central governments or central banks	$ 2,610	-	-	-	-	-	-	$ 551	-	$ 3,161	$ 3,161
6	Institutions		52	-	2,500	-	-	-	-	-	2,552	2,552
7	Corporates	-	-	-	-	-	1,651	-	-	27	1,678	1,678
8	Retail	-	-	-	-	96	-	-	-	-	96	96
9	Secured by mortgages on immovable property	-	-	108	-	-	-	-	-	-	108	108
10	Exposures in default	-	-	-	-	-	106	129	-	-	235	235
11	Higher-risk categories	-	-	-	-	-	-	1,234	-	-	1,234	1,234
15	Equity	-	-	-	-	-	177	-	-	-	177	177
16	Other items	-	-	-	-	-	517	-	-	-	517	517
17	**Total**	**$ 2,610**	**$ 52**	**$ 108**	**$ 2,500**	**$ 96**	**$ 2,451**	**$ 1,363**	**$ 551**	**$ 27**	**$ 9,758**	**$ 9,758**

GSI

$ in millions												As of December 2021
		Risk weight										
	Exposure classes	0%	20%	35%	50%	75%	100%	150%	250%	1250%	Total	Of which unrated
1	Central governments or central banks	-	-	-	-	-	-	-	$ 528	-	$ 528	$ 528
6	Institutions	-	-	-	-	-	-	-	-	-	-	-
7	Corporates	-	-	-	-	-	1,400	-	-	27	1,427	1,427
8	Retail	-	-	-	-	-	-	-	-	-	-	-
9	Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-
10	Exposures in default	-	-	-	-	-	-	-		-	-	-
11	Higher-risk categories	-	-	-	-	-	-	-	-	-	-	-
15	Equity	-	-	-	-	-	-	-	-	-	-	-
16	Other items	-	-	-	-	-	356	-	-	-	356	356
17	**Total**	**-**	**-**	**-**	**-**	**-**	**$ 1,756**	**-**	**$ 528**	**$ 27**	**$ 2,311**	**$ 2,311**

GSIB

$ in millions												As of December 2021
		Risk weight										
	Exposure classes	0%	20%	35%	50%	75%	100%	150%	250%	1250%	Total	Of which unrated
1	Central governments or central banks	$ 2,610	-	-	-	-	-	-	$ 23	-	$ 2,633	$ 2,633
6	Institutions	-	-	-	-	-	-	-	-	-	-	-
7	Corporates	-	-	-	-	-	80		-	-	80	80
8	Retail	-	-	-	-	10	-	-	-	-	10	10
9	Secured by mortgages on immovable property	-	-	47	-	-	-	-	-	-	47	47
10	Exposures in default	-	-	-	-	-	6	1		-	6	6
11	Higher-risk categories	-	-	-	-	-	-	-	-	-	-	-
15	Equity	-	-	-	-	-	-	-	-	-	-	-
16	Other items	-	-	-	-	-	22	-	-	-	23	23
17	**Total**	**$ 2,610**	**-**	**$ 47**	**-**	**$ 10**	**$ 108**	**$ 1**	**$ 23**	**-**	**$ 2,799**	**$ 2,799**

Appendix III: Counterparty Credit Risk Tables

Table 72: IRB Approach - CCR Exposures by Portfolio and PD Scale

GSGUK

$ in millions **As of December 2021**

	PD Scale	EAD post CRM	Average PD	Number of Obligors	Average LGD	Average Maturity	RWAs	RWA density
Sovereign								
	0.00 to <0.15	$ 15,336	0.03%	188	50%	0.84	$ 1,058	7%
	0.15 to <0.25	2,904	0.18%	24	50%	1.51	1,114	38%
	0.25 to <0.50	97	0.26%	21	50%	1.07	41	43%
	0.50 to <0.75	118	0.61%	15	50%	0.97	80	68%
	0.75 to <2.50	80	2.37%	3	50%	4.72	138	175%
	2.50 to <10.00	81	9.65%	7	50%	0.83	163	201%
	10.00 to <100.00	4	23.78%	5	50%	4.66	13	313%
	100.00 (Default)	-	0.00%	-	0%	-	-	0%
	Subtotal	**$ 18,620**	**0.12%**	**263**	**50%**	**0.96**	**$ 2,607**	**14%**
Institutions								
	0.00 to <0.15	52,016	0.06%	1,007	55%	2.19	17,835	34%
	0.15 to <0.25	8,100	0.17%	396	65%	1.70	5,266	65%
	0.25 to <0.50	1,750	0.26%	138	66%	0.53	1,092	62%
	0.50 to <0.75	6,667	0.66%	245	67%	1.47	5,324	80%
	0.75 to <2.50	325	2.00%	144	66%	1.00	569	175%
	2.50 to <10.00	1,521	6.93%	141	64%	2.91	4,004	263%
	10.00 to <100.00	110	23.78%	105	66%	2.42	452	412%
	100.00 (Default)	1	99.90%	6	0%	3.23	-	0%
	Subtotal	**$ 70,490**	**0.33%**	**2,182**	**57%**	**2.04**	**$ 34,542**	**49%**
Corporates								
	0.00 to <0.15	39,644	0.04%	7,419	68%	1.47	9,200	23%
	0.15 to <0.25	11,487	0.17%	2,426	62%	1.87	6,582	57%
	0.25 to <0.50	5,137	0.25%	1,440	64%	1.25	3,622	71%
	0.50 to <0.75	5,051	0.53%	1,755	64%	1.91	7,306	145%
	0.75 to <2.50	6,294	1.61%	5,748	68%	1.44	11,520	183%
	2.50 to <10.00	859	6.56%	676	64%	1.50	2,594	302%
	10.00 to <100.00	1,473	23.78%	828	64%	1.48	5,372	365%
	100.00 (Default)	-	0.00%	-	0%	-	-	0%
	Subtotal	**$ 69,945**	**6.56%**	**20,292**	**66%**	**1.55**	**$ 46,196**	**66%**
	Total (all portfolios)	**$ 159,055**	**0.53%**	**22,737**	**61%**	**1.70**	**$ 83,346**	**52%**

GSI

$ in millions								As of December 2021
	PD Scale	**EAD post CRM**	**Average PD**	**Number of Obligors**	**Average LGD**	**Average Maturity**	**RWAs**	**RWA density**
Sovereign								
	0.00 to <0.15	$ 15,337	0.03%	65	50%	0.84	$ 1,058	7%
	0.15 to <0.25	2,904	0.18%	10	50%	1.51	1,114	38%
	0.25 to <0.50	97	0.26%	14	50%	1.07	41	43%
	0.50 to <0.75	118	0.61%	9	50%	0.97	80	68%
	0.75 to <2.50	79	2.37%	2	50%	4.72	138	175%
	2.50 to <10.00	81	9.65%	4	50%	0.83	163	201%
	10.00 to <100.00	4	23.78%	3	50%	4.66	13	313%
	100.00 (Default)	-		-				
	Subtotal	**$ 18,620**	**0.12%**	**107**	**50%**	**0.96**	**$ 2,607**	**14%**
Institutions								
	0.00 to <0.15	53,274	0.06%	255	55%	2.15	17,655	33%
	0.15 to <0.25	8,034	0.17%	139	65%	1.71	5,231	65%
	0.25 to <0.50	1,744	0.26%	72	66%	0.53	1,089	62%
	0.50 to <0.75	6,665	0.66%	107	67%	1.47	5,322	80%
	0.75 to <2.50	325	2.00%	71	66%	1.00	569	175%
	2.50 to <10.00	1,520	6.93%	60	64%	2.91	3,999	263%
	10.00 to <100.00	105	23.78%	64	67%	2.47	435	414%
	100.00 (Default)	1	99.90%	2	0%	3.23	-	0%
	Subtotal	**$ 71,668**	**0.32%**	**770**	**58%**	**2.01**	**$ 34,300**	**48%**
Corporates								
	0.00 to <0.15	39,500	0.04%	4,761	68%	1.41	9,167	23%
	0.15 to <0.25	11,356	0.18%	1,221	62%	1.88	6,499	57%
	0.25 to <0.50	5,132	0.26%	966	65%	1.25	3,617	70%
	0.50 to <0.75	5,006	0.64%	1,215	71%	1.91	7,252	145%
	0.75 to <2.50	6,237	1.62%	2,983	69%	1.43	11,406	183%
	2.50 to <10.00	852	8.03%	421	71%	1.50	2,580	303%
	10.00 to <100.00	1,363	23.78%	434	64%	1.11	4,954	364%
	100.00 (Default)							
	Subtotal	**$ 69,446**	**0.83%**	**12,001**	**67%**	**1.51**	**$ 45,475**	**65%**
	Total (all portfolios)	**$ 159,734**	**0.52%**	**12,878**	**61%**	**1.67**	**$ 82,382**	**52%**

GSIB

$ in millions								As of December 2021
	PD Scale	**EAD post CRM**	**Average PD**	**Number of Obligors**	**Average LGD**	**Average Maturity**	**RWAs**	**RWA density**
Sovereign								
	0.00 to <0.15	-	0.00%	-	0%	-	-	0%
	0.15 to <0.25	-	0.00%	-	0%	-	-	0%
	0.25 to <0.50	-	0.00%	-	0%	-	-	0%
	0.50 to <0.75	-	0.00%	-	0%	-	-	0%
	0.75 to <2.50	-	0.00%	-	0%	-	-	0%
	2.50 to <10.00	-	0.00%	-	0%	-	-	0%
	10.00 to <100.00	0	23.78%	1	50%	1.29	0	275%
	100.00 (Default)	-	0.00%	-	0%	-	-	0%
	Subtotal	**$ 0**	**23.78%**	**1**	**50%**	**1.29**	**$ 0**	**275%**
Institutions								
	0.00 to <0.15	3,762	0.06%	28	65%	1.64	181	5%
	0.15 to <0.25	66	0.17%	2	65%	0.84	35	54%
	0.25 to <0.50	6	0.26%	2	66%	1.00	4	67%
	0.50 to <0.75	1	0.60%	3	66%	1.00	2	116%
	0.75 to <2.50	-	0.00%	-	0%	-	-	0%
	2.50 to <10.00	2	5.80%	3	66%	2.17	4	256%
	10.00 to <100.00	5	23.78%	12	59%	1.26	17	363%
	100.00 (Default)	-	0.00%	-	0%	-	-	0%
	Subtotal	**$ 3,842**	**0.09%**	**50**	**65%**	**1.63**	**$ 243**	**6%**
Corporates								
	0.00 to <0.15	215	0.06%	38	55%	14.63	66	30%
	0.15 to <0.25	131	0.18%	326	86%	1.12	84	64%
	0.25 to <0.50	6	0.26%	12	63%	2.56	4	76%
	0.50 to <0.75	45	0.67%	11	66%	1.33	54	122%
	0.75 to <2.50	57	1.65%	56	70%	2.34	113	200%
	2.50 to <10.00	7	5.83%	5	56%	1.11	15	216%
	10.00 to <100.00	110	23.78%	245	64%	6.04	418	380%
	100.00 (Default)	-	0.00%	-	0%	-	-	0%
	Subtotal	**$ 571**	**4.94%**	**693**	**66%**	**7.31**	**$ 754**	**132%**
	Total (all portfolios)	**$ 4,413**	**0.72%**	**744**	**65%**	**2.36**	**$ 997**	**23%**

Table 73: Impact of Netting and Collateral Held on Exposure Values[1]

GSGUK

$ in millions						As of December 2021
		Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure[2]
1	Derivatives	$ 637,180	$ 561,299	$ 75,881	$ 138,660	$ 46,562
2	SFTs	495,842	161,282	334,560	385,297	25,857
4	**Total**	**$ 1,133,022**	**$ 722,581**	**$ 410,441**	**523,957**	**$ 71,430**

GSI

$ in millions						As of December 2021
		Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure[2]
1	Derivatives	635,646	561,608	74,038	135,580	46,543
2	SFTs	432,712	161,024	271,688	645,611	21,348
4	**Total**	**$ 1,068,358**	**$ 722,632**	**$ 345,726**	**$ 781,191**	**$ 67,891**

GSIB

$ in millions						As of December 2021
		Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure[2]
1	Derivatives	$ 2,639	$ 534	$ 2,105	$ 3,079	$ 430
2	SFTs	63,130	257	62,873	58,395	5,178
4	**Total**	**$ 65,769**	**$ 791**	**$ 64,978**	**$ 61,474**	**$ 5,608**

[1] GSGUK and its subsidiaries do not have cross-product netting where both derivatives and SFTs are netted at a counterparty level.

[2] Net credit exposure for derivatives and SFTs represents the current exposure component of the modelled EAD, and takes into account legally enforceable collateral received.

Table 74: Composition of Collateral for Exposures to CCR

GSGUK

$ in millions						As of December 2021
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
	Segregated	Unsegregated	Segregated	Unsegregated		
Sovereign	$ 20,776	$ 14,875	$ 11,340	$ 11,762	$ 303,068	$ 235,621
Equities	$ 15,096	-	$ 1,716	-	$ 67,120	$ 94,129
Corporate Bonds	$ 610	$ 1,941	$ 557	$ 291	$ 11,176	$ 9,867
Cash	$ 14,536	$ 69,981	$ 4,552	$ 65,417	$ 302	$ 582
Other	$ 845	-	$ 1	$ 3	$ 3,631	$ 3,630
Total	**$ 51,863**	**$ 86,797**	**$ 18,166**	**$ 77,473**	**$ 385,297**	**$ 343,829**

GSI

$ in millions						As of December 2021
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
	Segregated	Unsegregated	Segregated	Unsegregated		
Sovereign	$ 20,772	$ 14,875	$ 11,340	$ 11,762	$ 457,891	$ 392,067
Equities	$ 12,035	-	$ 1,716	-	$ 161,128	$ 165,448
Corporate Bonds	$ 610	$ 1,941	$ 557	$ 291	$ 21,601	$ 20,394
Cash	$ 14,536	$ 69,966	$ 4,552	$ 65,326	$ 300	$ 601
Other	$ 845	-	$ 1	$ 3	$ 4,691	$ 6,232
Total	**$ 48,798**	**$ 86,782**	**$ 18,166**	**$ 77,382**	**$ 645,611**	**$ 584,742**

GSIB

$ in millions						As of December 2021
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
	Segregated	Unsegregated	Segregated	Unsegregated		
Sovereign	$ 4	-	-	-	$ 11,841	$ 296
Equities	$ 3,061	-	-	-	$ 24,027	-
Corporate Bonds	-	-	-	-	$ 20,930	-
Cash	-	$ 14	-	$ 91	$ 22	$ 1
Other	-	-	-	-	$ 1,575	-
Total	**$ 3,065**	**$ 14**	**-**	**$ 91**	**$ 58,395**	**$ 297**

Appendix IV: Past Due Exposures, Impaired Exposures and Impairment Provisions Tables

Table 75: Changes in the Stock of General and Specific Credit Risk Adjustments[1]

	$ in millions				As of December 2021
		Accumulated specific credit risk adjustment		Accumulated general credit risk adjustment	
		GSGUK	GSIB	GSGUK	GSIB
1	**Opening balance as of 30th June 2021**	**$ 77**	**$ 77**	-	-
2	Increases due to amounts set aside for estimated loan losses during the period	-	-	-	-
3	Decreases due to amounts reversed for estimated loan losses during the period	-	-	-	-
6	Impact of exchange rate differences	-	-	-	-
8a	Position and valuation changes	(16)	(16)	-	-
9	**Closing balance as of 31st December 2021**	**$ 61**	**$ 61**	-	-

[1]Changes in specific credit risk adjustment are due to position and valuation changes rather than changes in amounts set aside for estimated loan losses, transfers between credit risk adjustments, exchange rate differences or business combinations (such as acquisitions and disposals of subsidiaries).

Table 76: Changes in the Stock of Defaulted and Impaired Loans and Debt Securities[1]

	$ in millions			As of December 2021
		Gross carrying value defaulted exposures		
		GSGUK	GSI	GSIB
1	**Opening balance as of 30th June 2021**	**$ 108**	**$ 97**	**$ 11**
2	Loans and debt securities that have defaulted or impaired since the last reporting period	4	4	-
5	Other changes	$ 213	(13)	(3)
6	**Closing balance as of 31st December 2021**	**$ 325**	**$ 88**	**$ 8**

[1]There were no defaulted or impaired loans and debt securities written off or returned to non-defaulted status during the period.

Appendix V: Index of Tables

1. Template 3 (The disclosure on differences in the scopes of consolidation) has been disclosed within the Basis of Consolidation section of the document.

2. The specialised lending section of Template 5 (IRB (specialised lending and equities)) has not been disclosed as GSGUK and its subsidiaries does not have specialised lending exposure.

3. Template 6 (Non-deducted participation in insurance undertakings) has not been disclosed as GSGUK and its subsidiaries do not have material holdings of own funds instruments of an insurance undertaking, re-insurance undertaking or an insurance holding company.

4. Template 28 (Standardised approach – CCR exposures by regulatory portfolio and risk) has not been disclosed as the material entities within GSGSUK have regulatory permission from the PRA to compute risk weights in accordance with the AIRB approach. As a result, CCR exposures outside of these entities that are subject to the Standardised approach are deemed to be immaterial. The CCR exposure class, institutions, represents less than 5% of the total CCR exposure