Supplement No. 1

pursuant to Section 16 para. 1 of the German Securities Prospectus Act
(*Wertpapierprospektgesetz*)

dated 11 April 2019

to the

Registration Document

dated 23 January 2019

of

Goldman Sachs International
London, England

Subject of this supplement (the "**Supplement**") is (i) the publication of the Annual Report of for the fiscal year ended 30 November 2018 of Goldman Sachs International (the "**Annual Report**"), containing, in Part II, the Directors' Report and Audited Financial Statements of Goldman Sachs International for the period ended 30 November 2018, on 20 March 2019 and (ii) the publication of the report on the Regulatory Ratios of Goldman Sachs International for the fiscal quarter ended 28 February 2019 (the "**Report**") on 25 March 2019. A copy of the Report has been filed with the *Commission de Surveillance du Secteur Financier* (the "**CSSF**"). The Report is available free of charge at Goldman Sachs International, Zweigniederlassung Frankfurt, MesseTurm, Friedrich-Ebert-Anlage 49, 60308 Frankfurt am Main.

The information contained in the Registration Document shall be supplemented as follows:

*1. In the Registration Document the "**Annual Report for the fiscal year ended 31 December 2016 of Goldman Sachs International**" and the "**Unaudited Quarterly Financial Report of Goldman Sachs International for the period ended 30 September 2018**" of the "**Table of Contents**" on page 4 shall be replaced by the following new "**Annual Report for the fiscal year ended 30 November 2018 of Goldman Sachs International**":*

*2. In the Registration Document the information in the section "**A. Risk Factors relating to GSI**" on pages 5 et seqq. shall be replaced by the following information:*

"GSI faces a variety of risks that are substantial and inherent in its businesses including market, liquidity, credit, operational, model, legal, regulatory and reputational risks. The following are some of the more important factors that could affect GSI's business and, as a consequence, may affect GSI's ability to fulfil its obligations under the Securities. If GSI is not able to fulfil its obligations under the Securities investors in the Securities may lose some or all of the capital invested.

Risks relating to economic and market conditions

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

GSI's financial performance is highly dependent on the environment in which its businesses operate. A favourable business environment is generally characterised by, among other factors, high global GDP (Gross Domestic Product) growth, regulatory and market conditions which result in transparent, liquid and efficient capital markets, low inflation, high business and investor confidence, stable geopolitical conditions, clear regulations and strong business earnings.

Unfavourable or uncertain economic and market conditions can be caused by: concerns about sovereign defaults; uncertainty concerning fiscal or monetary policy; the extent of and uncertainty about tax and other regulatory changes; declines in economic growth, business activity or investor or business confidence; limitations on the availability or increases in the cost of credit and capital; illiquid markets; increases in inflation, interest rates, exchange rate or basic commodity price volatility, or default rates; the imposition of tariffs or other limitations on international trade and travel; outbreaks of domestic or international tensions or hostilities, terrorism, nuclear proliferation, cybersecurity threats or attacks and other forms of disruption to or curtailment of global communication, energy transmission or transportation networks or other geopolitical instability or uncertainty, such as corporate, political or other scandals that reduce investor confidence in capital markets; extreme weather events or other natural disasters or pandemics; or a combination of these or other factors.

The financial services industry and the securities markets have been materially and adversely affected in the past by significant declines in the values of nearly all asset classes and by a serious lack of liquidity. In addition, concerns about European sovereign debt risk and its impact on the European banking system, the impact of Brexit, and changes in interest rates and other market conditions or actual changes in interest rates and other market conditions, have resulted, at times, in significant volatility while negatively impacting the levels of client activity.

General uncertainty about economic, political and market activities, and the scope, timing and impact of regulatory reform, as well as weak consumer, investor and chief executive officer confidence resulting in large part from such uncertainty, can negatively impact client activity, which adversely affects many of GSI's businesses. Periods of low volatility and periods of high volatility, combined with a lack of liquidity, have at times had an unfavourable impact on GSI's market-making businesses. Financial institution returns in many countries may be negatively impacted by increased funding costs due in part to the lack of perceived government support of such institutions in the event of future financial crises relative to financial institutions in countries in which governmental support is maintained. In addition, liquidity in the financial markets has also been negatively impacted as market participants and market practices and structures continue to adjust to new regulations.

GSI's revenues and profitability and those of its competitors have been and will continue to be impacted by requirements relating to capital, additional loss-absorbing capacity, leverage, minimum liquidity and long-term funding levels, requirements related to resolution and recovery planning, derivatives clearing and margin rules and levels of regulatory oversight, as well as limitations on which and, if permitted, how certain business activities may be carried out by financial institutions.

The degree to which these and other changes since the financial crisis continue to have an impact on the profitability of financial institutions will depend on the effect of regulations adopted after 2008 and new regulations, the manner in which markets, market participants and financial institutions have continued to adapt to these regulations, and the prevailing economic and financial market conditions. However, there is a significant risk that such changes will negatively impact the absolute level of revenues, profitability and return on equity of GSI and other financial institutions.

Risks relating to regulation

As a participant in the financial services industry and a subsidiary of a systemically important financial institution, GSI is subject to extensive regulation, principally in the United Kingdom ("**UK**"), and the European Union ("**EU**") more generally, but also in the United States ("**US**") as a subsidiary of the Goldman Sachs Group and in certain other jurisdictions. GSI faces the risk of significant intervention by law enforcement, regulatory and tax authorities, as well as private litigation, in all jurisdictions in which it conducts its businesses. In many cases, GSI's activities may be subject to overlapping and divergent regulation in different jurisdictions. Among other things, as a result of law enforcement authorities, regulators or private parties challenging GSI's compliance with laws and regulations, GSI or its employees could be fined or criminally sanctioned, prohibited from engaging in certain business activities, subject to limitations or conditions on its business activities including higher capital requirements, or subjected to new or substantially higher taxes or other governmental charges in connection with the conduct of its businesses or with respect to its employees. Such limitations or conditions may limit business activities and negatively impact GSI's profitability.

In addition to the impact on the scope and profitability of GSI's business activities, day-to-day compliance with laws and regulations, in particular those adopted since 2008, has involved and will continue to involve significant amounts of time, including that of GSI's senior leaders and that of a large number of dedicated compliance and other reporting and operational personnel, all of which may negatively impact GSI's profitability.

If there are new laws or regulations or changes in the enforcement of existing laws or regulations applicable to GSI's businesses or those of GSI's clients, including capital, liquidity, leverage, long-term debt, total loss-absorbing capacity ("**TLAC**") and margin requirements, restrictions on other business practices, reporting requirements, requirements relating to the implementation of the EU Bank Recovery and Resolution Directive, tax burdens and compensation restrictions, that are imposed on a limited subset of financial institutions (either based on size, method of funding, activities, geography or other criteria) which may include GSI or The Goldman Sachs Group, Inc. ("**GSG**"), compliance with these new laws and regulations, or changes in the enforcement of existing laws or regulations, could adversely affect GSI's ability to compete effectively with other institutions that are not affected in the same way. In addition, regulation imposed on financial institutions or market participants generally, such as taxes on financial transactions, could adversely impact levels of market activity more broadly, and thus impact GSI's businesses.

These developments could impact GSI's profitability in the affected jurisdictions, or even make it uneconomic to continue to conduct all or certain businesses in such jurisdictions, or could result in GSI incurring significant costs associated with changing business practices, restructuring businesses, moving all or certain businesses and employees to other locations or complying with applicable capital requirements, including liquidating assets or raising capital in a manner that adversely increases GSI's funding costs or otherwise adversely affects its shareholder and creditors.

The EU and national financial legislators and regulators have proposed or adopted numerous market reforms that have impacted and may continue to impact GSI's businesses. These include stricter capital and liquidity requirements (including proposed amendments to Capital Requirements Directive (CRD IV) and Capital Requirements Regulation (CRR)), authorisations for regulators to impose position limits, restrictions on short selling and credit default swaps and market abuse regulations.

The implementation of higher capital requirements, the liquidity coverage ratio, the net stable funding ratio, requirements relating to long-term debt and TLAC and the prohibition on proprietary trading and the sponsorship of, or investment in, covered funds by the Volcker Rule may continue to adversely affect GSI's profitability and competitive position, particularly if these requirements do not apply, or do not apply equally, to GSI's competitors or are not implemented uniformly across jurisdictions.

GSI is also subject to laws and regulations, such as the EU's General Data Protection Regulation, relating to the privacy of the information of clients, employees or others, and any failure to comply with these laws and regulations could expose GSI to liability and/or reputational damage. As new privacy-related laws and regulations are implemented, the time and resources needed for GSI to comply with such laws and regulations, as well as GSI's potential liability for non-compliance and reporting obligations in the case of data breaches, may significantly increase.

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

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

Risks related to Brexit

In March 2017, the UK notified the European Council of its decision to leave the EU There is considerable uncertainty as to the regulatory framework that will govern transactions and business undertaken by GSI in the EU, both in the near term and the long term. As a result, GSI faces numerous risks that could adversely affect the conduct of its businesses, its profitability and liquidity. In addition, as a result of the company establishing third country branches in anticipation of Brexit, it will be subject to additional regulation and supervision in those jurisdictions.

GSI is incorporated and headquartered in the UK, and currently benefits from non-discriminatory access to EU clients and infrastructure based on EU treaties and EU legislation, including arrangements for cross-border "passporting" and the establishment of EU branches. Because the Withdrawal Agreement has not been ratified by the UK and EU Parliaments, it is uncertain whether GSI will continue to benefit from the existing access arrangements for financial services following March 29, 2019, the date on which the UK is scheduled to leave the EU Further, even if the Withdrawal Agreement is ratified, there is uncertainty regarding the terms of the long-term trading relationship between the EU and the UK, including the terms of access to each other's financial markets.

In the event of a hard Brexit scenario, certain client relationships and activities currently undertaken by GSI may be transitioned to other EU subsidiaries of GSG, which may result in a decline in the company's net revenues and profitability, and could adversely affect its businesses and liquidity.

In addition, Brexit has created an uncertain political and economic environment in the UK, and may create such environments in other EU member states. Political and economic uncertainty has in the past led to, and the outcome of Brexit could lead to, declines in market liquidity and activity levels, volatile market conditions, a contraction of available credit, changes in interest rates or exchange rates, weaker economic growth and reduced business confidence all of which could adversely impact GSI's business.

Risks related to market volatility

GSI's businesses have been and may be adversely affected by declining asset values. This is particularly true for those businesses in which GSI has net "long" positions, receives fees based on the value of assets managed, or receives or posts collateral. Many of GSI's businesses have net "long" positions in debt securities, loans, derivatives, mortgages, equities (including private equity) and most other asset classes. These include positions taken when GSI acts as a principal to facilitate clients' activities, including exchange-based market-making activities, or commits large amounts of capital to maintain positions in interest rate and credit products, as well as through currencies, commodities, equities and mortgage-related activities. In addition, GSI invests in similar asset classes. Substantially all of GSI's investing and market-making positions are marked-to-market on a daily basis and declines in asset values directly and immediately impact earnings, unless exposures have been effectively hedged.

In certain circumstances (particularly in the case of credit products and private equities or other securities that are not freely tradable or lack established and liquid trading markets), it may not be possible or economic to hedge such exposures and to the extent that this is done the hedge may be ineffective or may greatly reduce GSI's ability to profit from increases in the values of the assets. Sudden declines and significant volatility in the prices of assets may substantially curtail or eliminate the trading markets for certain assets, which may make it difficult to sell, hedge or value such assets. The inability to sell or effectively hedge assets reduces the ability to limit losses in such positions and the difficulty in valuing assets may negatively affect GSI's capital, liquidity or leverage ratios, increase its funding costs and generally require maintaining additional capital.

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

Collateral is posted to support obligations of GSI and received to support the obligations of clients and counterparties in connection with client execution businesses. When the value of the assets posted as collateral declines or the credit ratings of the party posting collateral decline, the party posting the collateral may need to provide additional collateral or, if possible, reduce its trading position. An example of such a situation is a margin call in connection with a brokerage account. Therefore, declines in the value of asset classes used as collateral mean that either the cost of funding positions is increased or the size of positions is decreased. If GSI is the party providing collateral, this can increase costs and reduce profitability and if GSI is the party receiving collateral, this can also reduce profitability by reducing the level of business done with clients and counterparties. In addition, volatile or less liquid markets increase the difficulty of valuing assets which can lead to costly and time-consuming disputes over asset values and the level of required collateral, as well as increased credit risk to the recipient of the collateral due to delays in receiving adequate collateral. In cases where GSI forecloses on collateral, sudden declines in the value or liquidity of such collateral may, despite credit monitoring, over-collateralisation, the ability to call for additional collateral or the ability to force repayment of the underlying obligation, result in significant losses to GSI, especially where there is a single type of collateral supporting the obligation. In addition, GSI may be subject to claims that the foreclosure was not permitted under the legal documents, was conducted in an improper manner or caused a client or counterparty to go out of business.

Risks related to liquidity

Liquidity is essential to GSI's businesses. It is of critical importance to GSI, as most of the failures of financial institutions have occurred in large part due to insufficient liquidity. GSI's liquidity could be impaired by an inability to access secured and/or unsecured debt markets, an inability to access funds from GSG or other affiliates, an inability to sell assets or redeem investments or unforeseen outflows of cash or collateral. This situation may arise due to circumstances that GSI may be unable to control, such as a general market disruption or an operational problem that affects third parties or GSI or its affiliates or even by the perception amongst market participants that GSI, or other market participants, are experiencing greater liquidity risk.

GSI employs structured products to benefit its clients and hedge its own risks. The financial instruments that GSI holds and the contracts to which it is a party are often complex, and these complex structured products often do not have readily available markets to access in times of liquidity stress. GSI's investing activities may lead to situations where the holdings from these activities represent a significant portion of specific markets, which could restrict liquidity for GSI's positions.

Further, GSI's ability to sell assets may be impaired if there is not generally a liquid market for such assets, as well as in circumstances where other market participants are seeking to sell similar assets at the same time, as is likely to occur in a liquidity or other market crisis or in response to changes to rules or regulations. In addition, financial institutions with which GSI interacts may exercise set-off rights or the right to require additional collateral, including in difficult market conditions, which could further impair GSI's liquidity.

GSI is an indirect, wholly-owned operating subsidiary of GSG and depends on GSG for capital and funding. The credit ratings of GSI and those of GSG are important to GSI's liquidity. A reduction in GSI's and / or GSG's credit ratings could adversely affect GSI's liquidity and competitive position, increase borrowing costs, limit access to the capital markets or funding from GSG or trigger obligations under certain provisions in some trading and collateralised financing contracts. Under these provisions, counterparties could be permitted to terminate contracts with GSI or GSG or require additional collateral. Termination of trading and collateralised financing contracts could cause losses and impair liquidity by requiring GSG or GSI to find other sources of financing or to make significant cash payments or securities movements.

GSI's and GSG's cost of obtaining long-term unsecured funding is directly related to both the credit spreads of GSI and GSG. Increases in the credit spreads of GSI and/or GSG can significantly increase the cost of this funding. Changes in credit spreads are continuous, market-driven, and subject at times to unpredictable and highly volatile movements. The credit spreads of GSI and/or GSG are also influenced by market perceptions of GSI's and/or GSG's creditworthiness. In addition, the credit spreads of GSI and/or GSG may be influenced by movements in the costs to purchasers of credit default swaps referenced to GSG's long-term debt. The market for credit default swaps has proven to be extremely volatile and at times has lacked a high degree of transparency or liquidity.

Regulatory changes relating to liquidity may also negatively impact GSI’s results of operations and competitive position. Recently, numerous regulations have been adopted or proposed to introduce more stringent liquidity requirements for large financial institutions. These regulations address, among other matters, liquidity stress testing, minimum liquidity requirements, wholesale funding, restrictions on short-term debt and structured notes issued by top-tier holding companies and prohibitions on parent guarantees that are subject to certain cross-defaults. New and prospective liquidity-related regulations may overlap with, and be impacted by, other regulatory changes, including rules relating to minimum long-term debt requirements and TLAC, capital, leverage and resolution and recovery frameworks applicable to large financial institutions. Given the overlapping and complex interactions among these new and prospective regulations, they may have unintended cumulative effects, and their full impact will remain uncertain, while regulatory reforms are being adopted and market practices develop in response to such reforms.

Risks relating to resolution and recovery planning

The circumstances in which a resolution authority would exercise its "bail-in" powers to recapitalise a failing entity by writing down its unsecured debt or converting it into equity are uncertain. If these powers were to be exercised (or if there was a suggestion that they could be exercised) in respect of GSI, such exercise would likely have a material adverse effect on the value of debt investments in GSI, including a potential loss of some or all of such investments.

Risks related to credit markets

Widening credit spreads for GSI or GSG, as well as significant declines in the availability of credit, have in the past adversely affected GSI's ability to borrow on a secured and unsecured basis and may do so in the future. GSI obtains the majority of its unsecured funding from GSG, which funds itself on an unsecured basis by issuing long-term debt, by accepting deposits at its bank subsidiaries, by issuing hybrid financial instruments, or by obtaining bank loans or lines of credit. GSI seeks to finance many of its assets on a secured basis. Any disruptions in the credit markets may make it harder and more expensive to obtain funding for businesses. If GSI's available funding is limited or GSI is forced to fund operations at a higher cost, these conditions may require curtailment of business activities and increase the cost of funding, both of which could reduce profitability, particularly in businesses that involve investing and market making.

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

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

Risks in connection with the concentration of risk

Concentration of risk increases the potential for significant losses in market-making, underwriting and investing activities. The number and size of such transactions may affect GSI's results of operations in a given period. Moreover, because of concentration of risk, GSI may suffer losses even when economic and market conditions are generally favourable for competitors. Disruptions in the credit markets can make it difficult to hedge these credit exposures effectively or economically.

In the ordinary course of business, GSI may be subject to a concentration of credit risk to a particular counterparty, borrower, issuer, including sovereign issuers, or geographic area or group of related countries, such as the EU. A failure or downgrade of, or default by, such entities could negatively impact GSI's businesses, perhaps materially, and the systems by which GSI sets limits and monitors the level of its credit exposure to individual entities, industries and countries may not function as anticipated. Regulatory reforms, including the European Market Infrastructure Regulation and the Dodd-Frank Wall Street Reform and Consumer Protection Act have led to increased centralisation of trading activity through particular clearing houses, central agents or exchanges, which has significantly increased GSI's concentration of risk with respect to these entities. While GSI's activities expose it to many different industries, counterparties and countries, GSI routinely executes a high volume of transactions with counterparties engaged in financial services activities, including brokers and dealers, commercial banks, clearing houses and exchanges. This has resulted in significant credit concentration with respect to these counterparties.

Risks related to credit quality

GSI is exposed to the risk that third parties who owe money, securities or other assets will not perform their obligations. These parties may default on their obligations to GSI due to bankruptcy, lack of liquidity, operational failure or other reasons. A failure of a significant market participant, or even concerns about a default by such an institution, could lead to significant liquidity problems, losses or defaults by other institutions, which in turn could adversely affect GSI.

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

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

Risks related to the composition of GSI's client base

GSI's client base is not the same as that of its major competitors. GSI's businesses may have a higher or lower percentage of clients in certain industries or markets than some or all of its competitors. Therefore, unfavourable industry developments or market conditions affecting certain industries or markets may result in GSI's businesses underperforming relative to similar businesses of a competitor if its businesses have a higher concentration of clients in such industries or markets. For example, GSI's market-making businesses have a higher percentage of clients with actively managed assets than its competitors and such clients could be disproportionately affected during periods of low volatility.

Correspondingly, favourable or simply less adverse developments or market conditions involving industries or markets in a business where GSI has a lower concentration of clients in such industry or market may also result in GSI underperforming relative to a similar business of a competitor that has a higher concentration of clients in such industry or market. For example, GSI has a smaller corporate client base in its market-making businesses than many of its peers and therefore GSI's competitors may benefit more from increased activity by corporate clients.

Risks related to derivative transactions

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

As a signatory to the International Swaps and Derivatives Association Universal Resolution Stay Protocol ("**ISDA Universal Protocol**") and the International Swaps and Derivatives Association 2018 US Resolution Stay Protocol (collectively, "**ISDA Protocols**"), GSI may not be able to exercise termination rights and other remedies against counterparties and, as this new regime has not yet been tested, GSI may suffer risks or losses that it would not have expected to suffer if it could immediately close out transactions upon a termination event. Various non-US regulators have also proposed regulations contemplated by the ISDA Universal Protocol, which might result in additional limitations on GSI's ability to exercise remedies against counterparties. The impact of the ISDA Protocols and these rules and regulations will depend on the development of market practices and structures, and their extension to repurchase agreements and other instruments that are not derivative contracts.

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

In addition, as new complex derivative products are created, covering a wider array of underlying credit and other instruments, disputes about the terms of the underlying contracts could arise, which could impair GSI's ability to effectively manage its risk exposures from these products and subject it to increased costs. The provisions of legislation requiring central clearing of credit derivatives and other over-the-counter ("**OTC**") derivatives, or a market shift toward standardised derivatives, could reduce the risk associated with such transactions, but under certain circumstances could also limit GSI's ability to develop derivatives that best suit the needs of clients and to hedge its own risks, and could adversely affect GSI's profitability and increase credit exposure to central clearing platforms.

Risks in connection with operational infrastructure

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

Many rules and regulations worldwide govern GSI's obligations to execute transactions and report such transactions and other information to regulators, exchanges and investors. Compliance with these legal and reporting requirements can be challenging, and GSI has been, and may in the future be, subject to regulatory fines and penalties for failing to follow these rules to report timely, accurate and complete information in accordance with such rules. As such requirements expand, compliance with these rules and regulations has become more challenging.

The use of computing devices and phones is critical to the work done by GSI's employees and the operation of GSI's systems and businesses and those of its clients and third-party service providers and vendors. Fundamental security flaws in computer chips found in many types of these computing devices and phones have been reported in the past and may be discovered in the future. Addressing this and similar issues could be costly and affect the performance of these businesses and systems, and operational risks may be incurred in applying fixes and there may still be residual security risks.

Additionally, although the prevalence and scope of applications of distributed ledger technology and similar technologies is growing, the technology is also nascent and may be vulnerable to cyber attacks or have other inherent weaknesses. GSI may be, or may become, exposed to risks related to distributed ledger technology through GSI's facilitation of clients’ activities involving financial products linked to distributed ledger technology, such as blockchain or cryptocurrencies, GSI's investments in firms that seek to develop platforms based on distributed ledger technology, and the use of distributed ledger technology by third-party vendors, clients, counterparties, clearing houses and other financial intermediaries.

In addition, GSI faces the risk of operational failure or significant operational delay, termination or capacity constraints of any of the clearing agents, exchanges, clearing houses or other financial intermediaries that it uses to facilitate securities and derivatives transactions, and as interconnectivity with clients grows, GSI will increasingly face the risk of operational failure or significant operational delay with respect to clients' systems.

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

In addition, although GSI seeks to diversify its third-party vendors to increase its resiliency, GSI is also exposed to the risk that a disruption or other information technology event at a common service provider to GSI's vendors could impede their ability to provide products or services to GSI. GSI may not be able to effectively monitor or mitigate operational risks relating to its vendors' use of common service providers.

Risks related to cyber security

GSI is regularly the target of attempted cyber attacks, including denial-of-service attacks, and must continuously monitor and develop its systems to protect its technology infrastructure and data from misappropriation or corruption. The increasing migration of GSI's communication and other platforms from company provided devices to employee-owned devices presents additional risks of cyber attacks. In addition, due to the interconnectivity with third-party vendors (and their respective service providers), central agents, exchanges, clearing houses and other financial institutions, GSI could be adversely impacted if any of them is subject to a successful cyber attack or other information security event. These effects could include the loss of access to information or services from the third party subject to the cyber attack or other information security event, which could, in turn, interrupt certain of GSI's businesses.

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

Although GSI takes protective measures and endeavours to modify them as circumstances warrant, its computer systems, software and networks may be vulnerable to unauthorised access, misuse, computer viruses or other malicious code, cyber attacks on GSI's vendors and other events that could have a security impact. Due to the complexity and interconnectedness of GSI's systems, the process of enhancing protective measures can itself create a risk of systems disruptions and security issues. If one or more of such events occur, this potentially could jeopardise GSI or its clients' or counterparties' confidential and other information processed and stored in, and transmitted through, GSI's computer systems and networks, or otherwise cause interruptions or malfunctions in GSI's, its clients', its counterparties' or third parties' operations, which could impact their ability to transact with GSI or otherwise result in legal or regulatory action, significant losses or reputational damage.

In addition, such an event could persist for an extended period of time before being detected, and, following detection, it could take considerable time for the company to obtain full and reliable information about the extent, amount and type of information compromised. During the course of an investigation, the company may not know the full impact of the event and how to remediate it, and actions, decisions and mistakes that are taken or made may further increase the negative effects of the event on the company's business, results of operations and reputation.

The increased use of mobile and cloud technologies can heighten these and other operational risks. GSI expects to expend significant additional resources on an ongoing basis to modify protective measures and to investigate and remediate vulnerabilities or other exposures, but these measures may be ineffective and GSI may be subject to legal or regulatory action, and financial losses that are either not insured against or not fully covered through any insurance it maintains. Certain aspects of the security of such technologies are unpredictable or beyond GSI's control, and the failure by mobile technology and cloud service providers to adequately safeguard their systems and prevent cyber attacks could disrupt GSI's operations and result in misappropriation, corruption or loss of confidential and other information. In addition, there is a risk that encryption and other protective measures, despite their sophistication, may be defeated, particularly to the extent that new computing technologies vastly increase the speed and computing power available.

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

Risks in connection with risk management

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

The models that GSI uses to assess and control its risk exposures reflect assumptions about the degrees of correlation or lack thereof among prices of various asset classes or other market indicators. In times of market stress or other unforeseen circumstances, such as those that occurred during 2008 and early 2009, and to some extent since 2011, previously uncorrelated indicators may become correlated, or conversely previously correlated indicators may move in different directions. These types of market movements have at times limited the effectiveness of GSI's hedging strategies and have caused it to incur significant losses, and they may do so in the future. These changes in correlation can be exacerbated where other market participants are using risk or trading models with assumptions or algorithms that are similar to GSI's. In these and other cases, it may be difficult to reduce GSI's risk positions due to the activity of other market participants or widespread market dislocations, including circumstances where asset values are declining significantly or no market exists for certain assets. In addition, the use of models in connection with risk management and numerous other critical activities presents risks that such models may be ineffective, either because of poor design or ineffective testing, improper or flawed inputs, as well as unpermitted access to such models resulting in unapproved or malicious changes to the model or its inputs.

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

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

Risks related to new business initiatives

GSI faces enhanced risks as new business initiatives lead it to transact with a broader array of clients and counterparties and expose it to new asset classes and new markets. A number of GSI's recent and planned business initiatives and expansions of existing businesses may bring it into contact, directly or indirectly, with individuals and entities that are not within GSI's traditional client and counterparty base and expose it to new asset classes and new markets. For example, GSI continues to transact business and invest in new regions, including a wide range of emerging and growth markets.

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

Risks in connection with operating in multiple jurisdictions

In conducting GSI's businesses and maintaining and supporting its global operations, GSI is subject to risks of possible nationalisation, expropriation, price controls, capital controls, exchange controls and other restrictive governmental actions, as well as the outbreak of hostilities or acts of terrorism. For example, sanctions have been imposed by the US and EU on certain individuals and companies in Russia. In many countries, the laws and regulations applicable to the securities and financial services industries and many of the transactions in which GSI is involved are uncertain and evolving, and it may be difficult to determine the exact requirements of local laws in every market. Any determination by local regulators that GSI has not acted in compliance with the application of local laws in a particular market or a failure to develop effective working relationships with local regulators could have a significant and negative effect not only on GSI's businesses in that market but also on its reputation generally. Further, in some jurisdictions a failure to comply with laws and regulations may subject GSI and its personnel not only to civil actions but also criminal actions. GSI is also subject to the enhanced risk that transactions it structures might not be legally enforceable in all cases.

While business and other practices throughout the world differ, GSI is subject in its operations worldwide to rules and regulations relating to corrupt and illegal payments, hiring practices and money laundering, as well as laws relating to doing business with certain individuals, groups and countries, such as the US Foreign Corrupt Practices Act, the USA PATRIOT Act of 2001 and the UK Bribery Act.

While GSI has invested and continues to invest significant resources in training and in compliance monitoring, the geographical diversity of its operations, employees, clients and customers, as well as the vendors and other third parties that GSI deals with, greatly increases the risk that GSI may be found in violation of such rules or regulations and any such violation could subject it to significant penalties or adversely affect its reputation.

In addition, there have been a number of highly publicised cases around the world, involving actual or alleged fraud or other misconduct by employees in the financial services industry in recent years, and GSI runs the risk that employee misconduct could occur. This misconduct may include intentional efforts to ignore or circumvent applicable policies, rules or procedures. This misconduct has included and may include in the future the theft of proprietary information, including proprietary software. It is not always possible to deter or prevent employee misconduct and the precautions taken to prevent and detect this activity have not been and may not be effective in all cases.

Risks related to conflicts of interest

A failure to appropriately identify and address potential conflicts of interest could adversely affect GSI's businesses. Due to the broad scope of the Goldman Sachs Group’s businesses and client base, GSI regularly addresses potential conflicts of interest, including situations where services to a particular client or the Goldman Sachs Group’s own investments or other interests conflict, or are perceived to conflict, with the interests of another client, as well as situations where one or more of its businesses have access to material non-public information that may not be shared with other businesses within the Goldman Sachs Group and situations where it may be a creditor of an entity with which the Goldman Sachs Group also has an advisory or other relationship.

Extensive procedures and controls are in place that are designed to identify and address conflicts of interest, including those designed to prevent the improper sharing of information among businesses. However, appropriately identifying and dealing with conflicts of interest is complex and difficult, and GSI's reputation, which is one of its most important assets, could be damaged and the willingness of clients to enter into transactions with GSI may be affected if it fails, or appears to fail, to identify, disclose and deal appropriately with conflicts of interest. In addition, potential or perceived conflicts could give rise to litigation or regulatory enforcement actions.

Risks related to competition

To the extent GSI expands into new business areas and new geographic regions, it will face competitors with more experience and more established relationships with clients, regulators and industry participants in the relevant market, which could adversely affect its ability to expand. Governments and regulators have recently adopted regulations, imposed taxes, adopted compensation restrictions or otherwise put forward various proposals that have or may impact GSI's ability to conduct certain of its businesses in a cost-effective manner or at all in certain or all jurisdictions, including proposals relating to restrictions on the type of activities in which financial institutions are permitted to engage. These or other similar rules, many of which do not apply to all GSI's competitors, could impact its ability to compete effectively.

Pricing and other competitive pressures in GSI's businesses have continued to increase, particularly in situations where some competitors may seek to increase market share by reducing prices. For example, in connection with investment banking and other assignments, in response to competitive pressure GSI has experienced, GSI has extended and priced credit at levels that may not always fully compensate it for the risks taken.

The financial services industry is highly interrelated in that a significant volume of transactions occur among a limited number of members of that industry. Many transactions are syndicated to other financial institutions and financial institutions are often counterparties in transactions. This has led to claims by other market participants and regulators that such institutions have colluded in order to manipulate markets or market prices, including allegations that antitrust laws have been violated. While GSI has extensive procedures and controls that are designed to identify and prevent such activities, allegations of such activities, particularly by regulators, can have a negative reputational impact and can subject GSI to large fines and settlements, and potentially significant penalties, including treble damages.

Risks related to changes in underliers

Certain of GSI's businesses and its funding may be adversely affected by changes in the reference rates, currencies, indices, baskets, exchange-traded funds ("**ETF**") or other financial metrics (the underlier) to which the products offered by GSI or funding raised by GSI are linked, in particular by changes in or the discontinuance of IBORs. All of GSI’s floating rate funding pays interest by reference to rates, such as LIBOR or the US Federal Reserve's Federal Funds Rate. In addition, many of the products that GSI owns or that it offers, such as structured notes, warrants, swaps or security-based swaps, pay interest or determine the principal amount to be paid at maturity or in the event of default by reference to rates or by reference to another underlier. In the event that the composition of the underlier is significantly changed, by reference to rules governing such underlier or otherwise, the underlier ceases to exist (for example, in the event that LIBOR is discontinued, a country withdraws from the Euro or links its currency to or delinks its currency from another currency or benchmark, or an index or ETF sponsor materially alters the composition of an index or ETF).or the underlier ceases to be recognised as an acceptable market benchmark, the company may experience pricing volatility, loss of market share in certain products, adverse tax or accounting impacts, compliance, legal and operational costs and risks associated with client disclosures, as well as systems disruption, model disruption and other business continuity issues. In addition, uncertainty relating to IBORs could result in increased capital requirements for the company given potential low transaction volumes, a lack of liquidity or limited observability for exposures linked to IBORs or any emerging successor rates and operational incidents associated with changes in and the discontinuance of IBORs.

There is considerable uncertainty as to how the financial services industry will address the discontinuance of designated rates in contracts and financial instruments or such designated rates ceasing to be acceptable reference rates. This uncertainty could ultimately result in client disputes and litigation surrounding the proper interpretation of GSI's IBOR-based contracts and financial instruments.

Further, the discontinuation of an IBOr, changes in an IBOr or changes in market acceptance of any IBOR as a reference rate may also adversely affect the yield on loans or securities held by the company, amounts paid on securities the company has issued, amounts received and paid on derivative instruments the company has entered into, the value of such loans, securities or derivative instruments, the trading market for securities, the terms of new loans being made using different or modified reference rates, the company's ability to effectively use derivative instruments to manage risk, or the availability or cost of the company's floating-rate funding and its exposure to fluctuations in interest rates.

Risks related to personnel

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

Competition from within the financial services industry and from businesses outside the financial services industry, including the technology industry, for qualified employees has often been intense. Recently, GSI has experienced increased competition in hiring and retaining employees to address the demands of new regulatory requirements and GSI's technology initiatives. This is also the case in emerging and growth markets, where GSI is often competing for qualified employees with entities that have a significantly greater presence or more extensive experience in the region.

Changes in law or regulation in jurisdictions in which GSI's operations are located that affect taxes on GSI's employees' income, or the amount or composition of compensation, may also adversely affect GSI's ability to hire and retain qualified employees in those jurisdictions.

GSI's compensation practices are subject to review by, and the standards of, the Prudential Regulation Authority (the "**PRA**") and the Financial Conduct Authority (the "**FCA**"). As a large financial institution, GSI is subject to limitations on compensation practices (which may or may not affect competitors) by the PRA and the FCA and other regulators worldwide. These limitations, including any imposed by or as a result of future legislation or regulation, may require GSI to alter compensation practices in ways that could adversely affect its ability to attract and retain talented employees.

Risks related to legal liability

Substantial civil or criminal liability or significant regulatory action against GSI could have material adverse financial effects or cause significant reputational harm, which in turn could seriously harm business prospects. GSI faces significant legal risks in its businesses, and the volume of claims and amount of damages and penalties claimed in litigation and regulatory proceedings against financial institutions remain high. GSI is, from time to time, subject to a number of other investigations and reviews by, and in some cases has received requests for documents and information from, various governmental and regulatory bodies and self-regulatory organisations relating to various aspects of GSI's businesses and operations. From experience, legal claims by customers and clients increase in a market downturn and employment-related claims increase following periods of headcount reduction. Additionally, governmental entities have been and are plaintiffs in certain of the legal proceedings in which GSI is involved, and it may face future civil or criminal actions or claims by the same or other governmental entities, as well as follow-on civil litigation that is often commenced after regulatory settlements.

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

GSI is subject to laws and regulations worldwide, including the US Foreign Corrupt Practices Act and the UK Bribery Act, relating to corrupt and illegal payments to, and hiring practices with regard to, government officials and others. Violations of these or similar laws and regulations could result in significant monetary penalties, severe restrictions on GSI's activities and damage to its reputation.

Resolution of a criminal matter involving the company or its employees could lead to increased exposure to civil litigation, could adversely affect the company's reputation, could result in penalties or limitations on the company's ability to conduct its activities generally or in certain circumstances and could have other negative effects.

Risks in connection with unforeseen or catastrophic events

The occurrence of unforeseen or catastrophic events, including the emergence of a pandemic, or other widespread health emergency (or concerns over the possibility of such an emergency), terrorist attacks, extreme terrestrial or solar weather events or other natural disasters, could create economic and financial disruptions, and could lead to operational difficulties (including travel limitations) that could impair GSI's ability to manage its businesses and result in losses."

*3. In the Registration Document the information in subsection "**I. Statutory Auditors and Selected Financial Information**" of section "**D. Goldman Sachs International**" on page 26 shall be replaced by the following information:*

"**1. Statutory Auditors**

The statutory financial statements of GSI for the periods ended 30 November 2018 and 31 December 2017 have been audited without qualification by PricewaterhouseCoopers LLP, Chartered Accountants and Statutory Auditors, of 7 More London Riverside, London, SE1 2RT in accordance with the laws of England. PricewaterhouseCoopers LLP is a registered member of the Institute of Chartered Accountants in England and Wales.

2. Selected Financial Information

The selected financial information set out below has been extracted from (i) GSI's 2018 Financial Statements and (ii) GSI's 2017 Financial Statements, which have been audited by PricewaterhouseCoopers LLP and on which PricewaterhouseCoopers LLP issued an unqualified audit report.

GSI's 2018 Financial Statements have been prepared in accordance with Financial Reporting Standards ("**FRS**") 101. GSI's 2017 Financial Statements have been prepared in accordance with FRS 101. The financial information presented below should be read in conjunction with the financial statements included in such documents, the notes thereto and report thereon.

The following table shows selected key historical financial information in relation to GSI:

	As at and for the year (audited)	
(*in USD millions*)	**1 January - 30 November 2018**	**1 January - 31 December 2017**
Profit before taxation	3,030	2,091
Profit for the financial period	2,198	1,557

	As of (audited)	
(*in USD millions*)	**30 November 2018**	**31 December 2017**
Fixed Assets	315	210
Current Assets	886,652	939,863
Total Shareholder's funds	33,917	31,701

"

*4. In the Registration Document the information in the third paragraph in subsection "**II. History and Development**" of section "**D. Goldman Sachs International**" on page 27 shall be replaced by the following information:*

"There have been no principal investments made by GSI since the date of its last published financial statements. A description of GSI's principal future investments on which its management body has already made firm commitments may be found in Note 26 of the "Notes to Financial Statements" at page G-76 of GSI's 2018 Financial Statements."

*5. In the Registration Document the information in subsection "**IV. Trend Information**" of section "**D. Goldman Sachs International**" on page 28 shall be replaced by the following information:*

"There has been no material adverse change in the prospects of GSI since 30 November 2018 (date of its last audited financial statements)."

*6. In the Registration Document the table in subsection "**V. Management and Legal Representation – 1. Management of GSI**" of section "**D. Goldman Sachs International**" on pages 29 shall be replaced by the following table:*

"

Name	**Occupation**	**Business Address**
Jose M. D. Barroso	Investment Banker	Peterborough Court 133 Fleet Street London EC4A 2BB

Sally A. Boyle	Managing Director	Peterborough Court 133 Fleet Street London EC4A 2BB
Richard J. Gnodde	Investment Banker	Peterborough Court 133 Fleet Street London EC4A 2BB
Lord Anthony S. Grabiner	Investment Banker	Peterborough Court 133 Fleet Street London EC4A 2BB
Nigel Harman	Investment Banker	Peterborough Court 133 Fleet Street London EC4A 2BB
Dermot W. McDonogh	Investment Banker	Peterborough Court 133 Fleet Street London EC4A 2BB
T. L. Miller	Investment Banker	Peterborough Court 133 Fleet Street London EC4A 2BB
E. E. Stecher	Investment Banker	Peterborough Court 133 Fleet Street London EC4A 2BB
Marius O. Winkelman	Investment Banker	Peterborough Court 133 Fleet Street London EC4A 2BB

"

*7. In the Registration Document the information in subsection "**VI. Financial information concerning GSI's assets and liabilities, financial position and profit and losses**" of section "**D. Goldman Sachs International**" on pages 31 et seq. shall be replaced by the following information:*

"**1. Historical financial information for the financial year 2017**

The Annual Report for the fiscal year ended 31 December 2017 of GSI ("**GSI's 2017 Annual Report**"), containing, in Part II, the Directors' Report and Audited Financial Statements of GSI for the period ended 31 December 2017 ("**GSI's 2017 Financial Statements**") can be found on pages F-1 to F-85 of the Registration Document.

2. Historical financial information for the financial year 2018

The Annual Report for the fiscal year ended 30 November 2018 of GSI ("**GSI's 2018 Annual Report**"), containing, in Part II, the Directors' Report and Audited Financial Statements of GSI for the period ended 30 November 2018 ("**GSI's 2018 Financial Statements**") can be found on pages G-1 to G-94 of the Registration Document.

3. Auditing of historical financial information

PricewaterhouseCoopers LLP audited (i) GSI's 2017 Financial Statements and (ii) GSI's 2018 Financial Statements and issued in each case an unqualified audit report.

4. Legal and arbitration proceedings

Save as disclosed in (i) "Legal Proceedings" of Note 26 to the Financial Statements (page F-69) of GSI's 2017 Annual Report and (ii) "Legal Proceedings" of Note 26 to the Financial Statements (page G-77) of GSI's 2018 Financial Report there have been no governmental, legal or arbitration proceedings (including any such proceedings which are pending or threatened of which GSI is aware) during the last 12 months before the date of this Registration Document which may have, or have had in the recent past, significant effects on GSI´s financial position or profitability.

5. Significant change in GSI's financial or trading position

There has been no significant change in the financial or trading position of GSI since 30 November 2018.

6. Statements in relation to prospects and financial or trading position

In this Registration Document, where GSI make statements that "there has been no material adverse change in the prospects" and "no significant change in the financial or trading position" of GSI, references in these statements to the "prospects" and "financial or trading position" of GSI is specifically to their respective ability to meet their full payment obligations under the Guarantee in a timely manner. Material information about GSI's respective financial condition and prospects is included in GSI's annual and interim reports, which are annexed to this Registration Document."

*8. In the Registration Document the information in subsection "**VIII. Additional Information about GSI**" of section "**D. Goldman Sachs International**" on page 34 the second and third paragraph shall be replaced by the following information:*

"Additional information relating to GSI's regulatory ratios can be found in the following documents to which reference is made pursuant to section 11 para. 1 sentence 2 German Securities Prospectus Act.

- the report on the Regulatory Ratios of Goldman Sachs International for the fiscal quarter ended 30 September 2018 ("**GSI's Regulatory Ratios, 30 September 2018**"), published on 17 October 2018;
- the report on the Regulatory Ratios of Goldman Sachs International for the fiscal quarter ended 31 December 2018 ("**GSI's Regulatory Ratios, 31 December 2018**"), published on 18 January 2019;
- the disclosure notice of Goldman Sachs International in relation to key recent events ("**GSI's Notice of Recent Events**") dated 18 January 2019, and
- the report on the Regulatory Ratios of Goldman Sachs International for the fiscal quarter ended 28 Ferbuary 2019 ("**GSI's Regulatory Ratios, 28 February 2019**"), published on 25 March 2019.

A copy of GSI's Regulatory Ratios, 30 September 2018, GSI's Regulatory Ratios, 31 December 2018, GSI's Notice of Recent Events and GSI's Regulatory Ratios, 28 February 2019 have been filed with the CSSF in Luxembourg and are available on the website of the Luxembourg Stock Exchange at www.bourse.lu."

*9. In the Registration Document in subsection "**IX. Documents on Display**" of section "**D. Goldman Sachs International**" on page 35 shall be replaced as follows:*

"The documents referred to in the Registration Document relating to Goldman Sachs International and intended for publication may be obtained or inspected, respectively during normal business hours at Goldman Sachs International, Zweigniederlassung Frankfurt, MesseTurm, Friedrich-Ebert-Anlage 49, 60308 Frankfurt am Main and/or Goldman Sachs Bank Europe SE, MesseTurm, Friedrich-Ebert-Anlage 49, 60308 Frankfurt am Main.

During the validity of the Registration Document, in particular copies of the following documents may be inspected:

- the Articles of Association of Goldman Sachs International dated 20 February 2017;
- GSG's Form 8-K, 16 October 2018;
- GSI's Regulatory Ratios, 30 September 2018;
- GSI's Regulatory Ratios, 31 December 2018;
- GSI's Notice of Recent Events;
- GSI's Regulatory Ratios, 28 February 2019
- GSI's 2017 Annual Report; and
- GSI's 2018 Annual Report.

The Registration Document is published in electronic form on the website www.gs.de (see www.gs.de/service/wertpapierprospekte)."

*10. In the Registration Document the "**Annual Report for the fiscal year ended 31 December 2016 of Goldman Sachs International**" and the "**Unaudited Quarterly Financial Report of Goldman Sachs International for the period ended 30 September 2018**" shall be deleted and after the "**Annual Report for the fiscal year ended 31 December 2017 of Goldman Sachs International**" the Annual Report for the fiscal year ended 30 November 2018 of Goldman Sachs International as laid out below is newly inserted as "**Annual Report for the fiscal year ended 30 November 2018 of Goldman Sachs International**".*

Annual Report for the fiscal year ended 30 November 2018 of Goldman Sachs International

Introduction

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

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

The company's ultimate parent undertaking and controlling entity is The Goldman Sachs Group, Inc. (Group Inc.). Group Inc. is a bank holding company and a financial holding company regulated by the Board of Governors of the Federal Reserve System (FRB). In relation to the company, "group undertaking" means Group Inc. or any of its subsidiaries. Group Inc., together with its consolidated subsidiaries, form "GS Group". GS Group is a leading global investment banking, securities and investment management firm that provides a wide range of financial services to a substantial and diversified client base that includes corporations, financial institutions, governments and individuals. GS Group has a presence in EMEA through a number of subsidiaries, including GSI.

The company seeks to be the advisor of choice for its clients and a leading participant in global financial markets. As part of GS Group, the company also enters into transactions with affiliates in the normal course of business as part of its market-making activities and general operations. The company, consistent with GS Group, reports its activities in four business segments: Investment Banking; Institutional Client Services; Investing & Lending; and Investment Management.

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

References to "the financial statements" are to the directors' report and audited financial statements as presented in Part II of this annual report.

During the period, the company changed its accounting reference date from December 31 to November 30 to conform to the period used by the company for U.S. tax reporting purposes. As such, these financial statements have been prepared for the eleven months ended November 30, 2018, with comparative information being presented for the twelve months ended December 31, 2017. As a result, amounts presented in this annual report are not directly comparable. All references to November 2018 refer to the eleven months period ended, or the date, as the context requires, November 30, 2018. All references to December 2017 refer to the twelve months period ended, or the date, as the context requires, December 31, 2017.

Unless otherwise stated, all amounts in this annual report are prepared in accordance with United Kingdom Generally Accepted Accounting Practices (U.K. GAAP). The company also prepares results under United States Generally Accepted Accounting Principles (U.S. GAAP), which are included in the consolidated financial statements of GS Group.

Certain disclosures required by U.K. GAAP in relation to the company's financial risk management and capital management have been presented alongside other risk management and regulatory information in the strategic report. Such disclosures are identified as audited. All other information in the strategic report is unaudited.

Executive Overview

Profit and Loss Account

The profit and loss account is set out on page 49 of this annual report. The company's profit for the period ended November 2018 was $2.20 billion, an increase of 41% compared with the period ended December 2017.

The company adopted IFRS 15 'Revenue from Contracts with Customers' (IFRS 15) from January 1, 2018. As a result of adopting this standard, the company has prospectively changed the presentation of certain costs from a net presentation within net revenues to a gross basis, resulting in an increase in both net revenues and administrative expenses by $609 million for the period ended November 2018, in comparison to the company's past presentation. See Note 2 to the financial statements for further information.

Net revenues were $7.87 billion for the period ended November 2018, 21% higher than the period ended December 2017. Net revenues (excluding the impact of adopting IFRS 15) were $7.26 billion, 12% higher than the period ended December 2017, reflecting higher net revenues in Institutional Client Services, significantly higher net revenues in Investing & Lending and higher net revenues in Investment Banking and Investment Management.

Administrative expenses were $4.61 billion for the period ended November 2018, 12% higher than the period ended December 2017. Administrative expenses (excluding the impact of adopting IFRS 15) were $4.00 billion, 3% lower than the period ended December 2017, primarily due to lower direct costs of employment, partially offset by significantly higher management charges from group undertakings and significantly higher other expenses.

See “Results of Operations” below for information about the company’s net revenues, segment reporting and administrative expenses.

Capital Ratios

As of November 2018, the company’s Common Equity Tier 1 ratio was 11.6% (under CRD IV as defined in “Equity Capital Management and Regulatory Capital — Regulatory Capital”).

Balance Sheet

The balance sheet is set out on page 50 of this annual report. In the subsequent paragraphs, total assets are the sum of “Fixed assets”, “Current assets” and “Pension surplus”. Total liabilities are the sum of “Creditors: amounts falling due within one year”, “Creditors: amounts falling due after more than one year” and “Provisions for liabilities”.

As of November 2018, total assets were $887.37 billion, a decrease of $53.02 billion from December 2017, reflecting decreases in financial instruments owned of $46.14 billion, debtors of $9.26 billion and collateralised agreements of $1.49 billion, partially offset by an increase in cash at bank and in hand of $3.67 billion. Financial instruments owned decreased primarily due to a decrease in derivative instruments, principally as a result of a decrease in interest rates derivatives, partially offset by an increase in cash instruments. Debtors decreased primarily due to a decrease in amounts due from broker/dealers and customers. Collateralised agreements decreased primarily due to changes in firm and client activity. Cash at bank and in hand increased primarily due to an increase in cash deposits held as Global Core Liquid Assets (GCLA).

As of November 2018, total liabilities were $853.46 billion, a decrease of $55.23 billion from December 2017, reflecting decreases in financial instruments sold, but not yet purchased of $43.94 billion and collateralised financings of $23.30 billion, partially offset by an increase in other creditors of $11.93 billion. Financial instruments sold, but not yet purchased decreased primarily due to a decrease in derivative instruments, principally as a result of a decrease in interest rates derivatives, partially offset by an increase in cash instruments. Collateralised financings decreased primarily due to changes in firm and client activity. Other creditors increased primarily due to an increase in unsecured borrowings.

As of November 2018, total shareholder’s funds were $33.92 billion, an increase of $2.22 billion from December 2017, primarily reflecting the company’s profit for the period ended November 2018 of $2.20 billion. In addition, during the period ended November 2018, the company issued $2.50 billion of Additional Tier 1 notes (AT1 notes) and paid a dividend of $2.50 billion.

Total level 3 financial assets were $5.31 billion as of November 2018 and $4.04 billion as of December 2017. See Note 28 to the financial statements for further information about level 3 financial assets, including changes in level 3 financial assets and related fair value measurement.

Under U.S. GAAP, as of November 2018, total assets were $409.57 billion and total liabilities were $383.83 billion. The company’s total assets and total liabilities under U.S. GAAP differ from those reported under U.K. GAAP primarily due to the company presenting derivative balances gross under U.K. GAAP if they are not net settled in the normal course of business, even where it has a legally enforceable right to offset those balances.

Future Outlook

The directors consider that the period end financial position of the company was satisfactory. While no significant change in the principal business activities is currently expected, some of the company’s E.U. client base is expected to be serviced by other E.U. subsidiaries of Group Inc. in the event of the U.K. leaving the E.U. on March 29, 2019 without any transitional agreements in place and the company losing its existing access arrangements to the E.U. markets. See “Regulatory Matters and Other Developments — Other Developments” below for further information.

Business Environment

Global

During the period ended November 2018, real gross domestic product (GDP) growth appeared to increase in the U.S. but generally appeared to decrease in other major economies. In advanced economies, growth in the Euro area, U.K., and Japan each appeared to be lower and in emerging markets, growth in China decreased slightly. Economic activity in several major emerging market economies was impacted by concerns about the vulnerability of these economies to a stronger U.S. dollar and higher U.S. Treasury rates. Global asset markets experienced significant periods of volatility in the beginning and towards the end of the period ended November 2018 driven by concerns about the prospect of slowing global growth and tighter monetary policy. The U.S. presidential administration implemented and proposed new tariffs on imports from China, which prompted retaliatory measures, and rising global trade tensions remained a meaningful source of uncertainty affecting asset prices throughout the period ended November 2018. Political uncertainty in Europe increased as a new coalition government formed in Italy in May 2018 and the future of the relationship between the U.K. and E.U. remained uncertain. During the period ended November 2018, the U.S. Federal Reserve increased the target federal funds rate three times and the Bank of England increased its official target interest rate in August 2018, while the Bank of Japan introduced forward guidance and expanded the permissible range of fluctuations for the 10-year interest rate.

In investment banking, industry-wide announced and completed mergers and acquisitions volumes increased compared with the period ended December 2017, while industry-wide underwriting transactions decreased.

Europe

In the Euro area, real GDP appeared to increase for the period ended November 2018 compared with the period ended December 2017, while measures of inflation remained low. The European Central Bank maintained its main refinancing operations rate at 0% and its deposit rate at (0.40)%, but reduced its monthly asset purchases to a pace of €15 billion per month after September 2018 and through November 2018, after which net asset purchases ended. Measures of unemployment decreased, and the Euro depreciated by 6% against the U.S. dollar for the period ended November 2018 compared with the end of December 2017. Following the formation of a new coalition government in May 2018, political uncertainty in Italy remained high and the yield on 10-year government bonds in Italy increased significantly. Elsewhere in the Euro area, yields on 10-year government bonds mostly decreased. In equity markets, the DAX Index decreased by 13%, Euro Stoxx 50 Index decreased by 9% and the CAC 40 Index decreased by 6% for the period ended November 2018 compared with the end of December 2017. In March 2018, it was announced that terms were agreed upon for the transitional period of the U.K.'s withdrawal from the E.U. and, in November 2018, the U.K. and the E.U. agreed on a draft withdrawal agreement. However, as of the end of the period, there was significant uncertainty about the future relationship between the U.K. and the E.U.

In the U.K., real GDP appeared to increase for the period ended November 2018 compared with the period ended December 2017. The Bank of England increased its official bank rate by 25 basis points to 0.75% in August 2018, and the British pound depreciated by 6% against the U.S. dollar for the period ended November 2018 compared with the end of December 2017. The yield on 10-year government bonds increased by 18 basis points and, in equity markets, the FTSE 100 Index decreased by 9% for the period ended November 2018 compared with the end of December 2017.

In investment banking, EMEA industry-wide announced and completed mergers and acquisitions volumes and underwriting transactions decreased compared with the period ended December 2017.

Results of Operations

Net Revenues

Net revenues include the net profit arising from transactions, with both third parties and affiliates, in securities, foreign exchange and other financial instruments, and fees and commissions. This is inclusive of associated interest and dividends. See "Segment Reporting" below for further information.

Segment Reporting

The table below presents the net revenues of the company's segments.

	Period Ended	
$ in millions	**November 2018**	December 2017
Investment Banking		
Financial Advisory	**$ 693**	$ 514
Underwriting	**871**	662
Total Investment Banking	**$1,564**	$1,176
Institutional Client Services		
Fixed Income, Currency and Commodities Client Execution	**$2,203**	$2,117
Equities	**2,812**	2,365
Total Institutional Client Services	**$5,015**	$4,482
Investing & Lending	**$ 494**	$ 318
Investment Management	**$ 793**	$ 532
Total net revenues	**$7,866**	$6,508

Investment Banking

Investment Banking consists of:

Financial Advisory. Includes strategic advisory engagements with respect to mergers and acquisitions, divestitures, corporate defence activities, restructurings, spin-offs, risk management and derivative transactions directly related to these client advisory engagements.

Underwriting. Includes equity and debt underwriting of public offerings and private placements, including local and cross-border transactions and acquisition financing, of a wide range of securities and other financial instruments, including loans, and derivative transactions directly related to these client underwriting activities.

November 2018 versus December 2017. Net revenues in Investment Banking were $1.56 billion for the period ended November 2018. Net revenues in Investment Banking (excluding the impact of adopting IFRS 15) were $1.29 billion for the period ended November 2018, 10% higher than the period ended December 2017.

Net revenues in Financial Advisory were $693 million for the period ended November 2018. Net revenues in Financial Advisory (excluding the impact of adopting IFRS 15) were $608 million for the period ended November 2018, 18% higher than the period ended December 2017, primarily reflecting an increase in completed mergers and acquisitions transactions.

Net revenues in Underwriting were $871 million for the period ended November 2018. Net revenues in Underwriting (excluding the impact of adopting IFRS 15) were $684 million for the period ended November 2018, 3% higher than the period ended December 2017, due to higher net revenues in equity underwriting, partially offset by slightly lower net revenues in debt underwriting.

As of November 2018, the company's investment banking transaction backlog increased significantly compared with December 2017 primarily due to significantly higher estimated net revenues from potential advisory transactions. Estimated net revenues from potential debt underwriting transactions were higher, partially offset by lower estimated net revenues from potential equity underwriting transactions.

The company's investment banking transaction backlog represents an estimate of future net revenues from investment banking transactions where the company believes that future revenue realisation is more likely than not. The company believes changes in its investment banking transaction backlog may be a useful indicator of client activity levels which, over the long term, impact net revenues.

Institutional Client Services

Institutional Client Services generates revenues in the following ways:

- In large, highly liquid markets, the company executes a high volume of transactions for clients;
- In less liquid markets, the company executes transactions for clients for spreads and fees that are generally somewhat larger than those charged in more liquid markets;
- The company also structures and executes transactions involving customised or tailor-made products that address clients' risk exposures, investment objectives or other complex needs;
- The company provides financing to its clients for their securities trading activities, as well as securities lending and other prime brokerage services; and

- In connection with the company's market-making activities, the company maintains inventory, typically for a short period of time, in response to, or in anticipation of, client demand. The company also holds inventory to actively manage its risk exposures that arise from these market-making activities. The company carries its inventory at fair value with changes in valuation reflected in net revenues.

Institutional Client Services consists of:

Fixed Income, Currency and Commodities Client Execution. Includes client execution activities related to making markets in both cash and derivative instruments for interest rate products, credit products, mortgages, currencies and commodities.

- **Interest Rate Products.** Government bonds (including inflation-linked securities) across maturities, other government-backed securities, securities sold under agreements to repurchase (repurchase agreements), and interest rate swaps, options and other derivatives.
- **Credit Products.** Investment-grade corporate securities, high-yield securities, credit derivatives, exchange-traded funds, bank and bridge loans, municipal securities, emerging market and distressed debt, and trade claims.
- **Mortgages.** Commercial mortgage-related securities, loans and derivatives, residential mortgage-related securities, loans and derivatives, and other asset-backed securities, loans and derivatives.
- **Currencies.** Currency options, spot/forwards and other derivatives on G-10 currencies and emerging-market products.
- **Commodities.** Commodity derivatives and, to a lesser extent, physical commodities, involving crude oil and petroleum products, natural gas, base, precious and other metals, electricity, coal, agricultural and other commodity products.

Equities. Includes client execution activities related to making markets in equity products and commissions and fees from executing and clearing institutional client transactions on major stock, options and futures exchanges worldwide, as well as over-the-counter (OTC) transactions. Equities also includes the securities services business, which provides financing, securities lending and other prime brokerage services to institutional clients, including hedge funds, mutual funds, pension funds and foundations, and generates revenues primarily in the form of interest rate spreads or fees.

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

November 2018 versus December 2017. Net revenues in Institutional Client Services were \$5.02 billion for the period ended November 2018. Net revenues in Institutional Client Services (excluding the impact of adopting IFRS 15) were \$4.86 billion for the period ended November 2018, 8% higher than the period ended December 2017.

Net revenues in Fixed Income, Currency and Commodities Client Execution (FICC Client Execution) were \$2.20 billion for the period ended November 2018. Net revenues in FICC Client Execution (excluding the impact of adopting IFRS 15) were \$2.11 billion for the period ended November 2018, essentially unchanged compared with the period ended December 2017, due to significantly lower net revenues in interest rate products and mortgages, partially offset by significantly higher net revenues in commodities and credit products as well as higher net revenues in currencies.

Net revenues in Equities were \$2.81 billion for the period ended November 2018. Net revenues in Equities (excluding the impact of adopting IFRS 15) were \$2.75 billion for the period ended November 2018, 16% higher than the period ended December 2017, due to significantly higher net revenues in equities client execution and higher net revenues in commission and fees.

Investing & Lending

Investing & Lending includes direct investments made by the company, which are typically longer-term in nature, and net revenues associated with providing investing services to other GS Group entities.

November 2018 versus December 2017. Net revenues in Investing & Lending were \$494 million for the period ended November 2018. Net revenues in Investing & Lending (excluding the impact of adopting IFRS 15) were \$490 million for the period ended November 2018, 54% higher than the period ended December 2017, primarily due to a loss of approximately \$130 million on an intercompany derivative instrument in the period ended December 2017.

Investment Management

Investment Management provides investment management and wealth advisory services, including portfolio management and financial counselling, and brokerage and other transaction services to high-net-worth individuals and families. Investment Management also includes net revenues associated with providing investing services to funds managed by GS Group.

November 2018 versus December 2017. Net revenues in Investment Management were $793 million for the period ended November 2018. Net revenues in Investment Management (excluding the impact of adopting IFRS 15) were $620 million for the period ended November 2018, 17% higher than the period ended December 2017, primarily due to an increase in net revenues from providing investing services to funds managed by GS Group.

Geographic Data

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

Administrative Expenses

Administrative expenses are primarily influenced by compensation (including the impact of the Group Inc. share price on share-based compensation), headcount and levels of business activity. Direct costs of employment include salaries, allowances, estimated discretionary compensation, amortisation and mark-to-market of share-based compensation and other items such as benefits. Discretionary compensation is significantly impacted by, among other factors, the level of net revenues, overall financial performance, prevailing labour markets, business mix, the structure of share-based compensation programmes and the external environment.

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

	Period Ended	
$ in millions	**November 2018**	December 2017
Direct costs of employment	**$1,945**	$2,395
Management charges from/to group undertakings relating to staff costs	**205**	56
Brokerage, clearing, exchange and distribution fees	**767**	702
Market development	**81**	80
Communications and technology	**112**	97
Depreciation and amortisation	**58**	39
Occupancy	**157**	156
Professional fees	**203**	193
Management charges from/to group undertakings relating to other services	**210**	189
Other expenses	**869**	212
Total administrative expenses	**$4,607**	$4,119
Headcount at period end	**4,210**	4,031

In the table above:

- Direct costs of employment included a credit of $184 million for the period ended November 2018 and a charge of $144 million for the period ended December 2017 relating to the mark-to-market of share-based compensation.
- The company has reclassified $85 million of transaction and other fees that are paid to exchanges for the period ended December 2017 from other expenses to brokerage, clearing, exchange and distribution fees to conform to the current presentation.
- Headcount consists of the company's employees, and excludes consultants and temporary staff previously reported as total staff. As a result, the company has reclassified $57 million of consultant and temporary staff expenses for the period ended December 2017 from direct costs of employment to professional fees to conform to the current presentation.

November 2018 versus December 2017. Administrative expenses were $4.61 billion for the period ended November 2018. Administrative expenses (excluding the impact of adopting IFRS 15) were $4.00 billion for the period ended November 2018, 3% lower than the period ended December 2017.

Direct costs of employment were $1.95 billion for the period ended November 2018, 19% lower than the period ended December 2017. Direct costs of employment include the mark-to-market impact of share-based compensation. Excluding the mark-to-market impact of share-based compensation for both periods, direct costs of employment were $2.13 billion for the period ended November 2018, 5% lower than the period ended December 2017, reflecting the shorter accounting period.

Management charges from/to group undertakings relating to staff costs were $205 million for the period ended November 2018, compared with $56 million for the period ended December 2017, due to higher charges from affiliates and the transfer of employees in the second quarter of 2017 to an affiliated group undertaking in the U.K.

Brokerage, clearing, exchange and distribution fees were $767 million for the period ended November 2018, 9% higher than the period ended December 2017, reflecting an increase in activity levels.

Other expenses were $869 million for the period ended November 2018. Other expenses (excluding the impact of adopting IFRS 15) were $260 million for the period ended November 2018, 23% higher than the period ended December 2017, reflecting significantly higher provisions for liabilities.

As of November 2018, headcount increased 4% compared with December 2017.

Interest Payable and Similar Expenses

Interest payable and similar expenses consists of interest on long-term subordinated loans from parent and group undertakings.

November 2018 versus December 2017. Interest payable and similar expenses was $237 million for the period ended November 2018, 21% lower than the period ended December 2017, primarily due to a decrease in the average long-term subordinated loans balance as the company repaid $3.58 billion of long-term subordinated loans in June 2017.

Tax on Profit

The effective tax rate was 27.5% for the period ended November 2018, which compares to the U.K. corporate tax rate applicable to the company of 27.0%. The effective tax rate represents the company's tax on profit divided by its profit before taxation.

Balance Sheet and Funding Sources

Balance Sheet Management

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

In order to ensure appropriate risk management, the company seeks to maintain a sufficiently liquid balance sheet and leverages GS Group's processes to dynamically manage its assets and liabilities, which include (i) balance sheet planning, (ii) balance sheet limits, (iii) monitoring of key metrics and (iv) scenario analyses.

Balance Sheet Planning. GS Group prepares a balance sheet plan that combines projected total assets and composition of assets with expected funding sources over a three-year time horizon. This plan is reviewed quarterly and may be adjusted in response to changing business needs or market conditions.

Balance Sheet Limits. The limits are set at levels, which are close to actual operating levels, rather than at levels, which reflect GS Group's maximum risk appetite, in order to ensure prompt escalation and discussion among GS Group's revenue-producing units, Treasury and GS Group's independent risk oversight and control functions on a routine basis. GS Group's Firmwide Asset Liability Committee and GS Group's Risk Governance Committee review and approve balance sheet limits.

In addition, GS Group's Risk Governance Committee sets aged inventory limits for certain financial instruments as a disincentive to hold inventory over longer periods of time. Compliance with limits is monitored by the revenue-producing units and Treasury, as well as the independent risk oversight and control functions.

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

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

Funding Sources

The company's primary sources of funding are collateralised financings, intercompany unsecured borrowings, external unsecured borrowings and shareholder's funds.

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

	As of			
$ in millions	**November 2018**		December 2017	
Collateralised financings:				
Repurchase agreements	**$ 85,230**	**31%**	$110,118	40%
Securities loaned	**56,349**	**21%**	58,101	21%
Debt securities issued	**2,933**	**1%**	1,658	1%
Other borrowings	**7,633**	**3%**	5,570	2%
Total collateralised financings	**152,145**	**56%**	175,447	64%
Intercompany unsecured borrowings	**61,493**	**23%**	43,152	16%
External unsecured borrowings	**25,197**	**9%**	23,316	8%
Total shareholder's funds	**33,917**	**12%**	31,701	12%
Total funding sources	**$272,752**	**100%**	$273,616	100%

In the table above:

- Debt securities issued includes notes, certificates, and warrants; and
- Other borrowings includes funded derivatives and transfers of assets accounted for as financings rather than sales.

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

Secured Funding. The company funds a significant amount of inventory on a secured basis, with external counterparties, as well as with affiliates. Secured funding includes collateralised financings in the balance sheet.

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

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

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

The weighted average maturity of the company's external secured funding included in collateralised financings in the balance sheet, excluding funding that can only be collateralised by liquid government obligations, exceeded 120 days as of November 2018.

Intercompany Unsecured Borrowings. The company sources funding through intercompany unsecured borrowings from Goldman Sachs Funding LLC (Funding IHC), Group Inc. and other affiliates.

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

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

Shareholder's Funds. Shareholder's funds is a stable and perpetual source of funding. See Notes 21 and 22 to the financial statements for further information.

Equity Capital Management and Regulatory Capital

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

Equity Capital Management (Audited)

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

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

In addition, as part of the company's comprehensive capital management policy, a contingency capital plan is maintained that provides a framework for analysing and responding to a perceived or actual capital deficiency, including, but not limited to, identification of drivers of a capital deficiency, as well as mitigants and potential actions. It outlines the appropriate communication procedures to follow during a crisis period, including internal dissemination of information, as well as timely communication with external stakeholders.

Regulatory Capital (Audited)

The company is subject to the capital framework for E.U.-regulated financial institutions prescribed in the E.U. Fourth Capital Requirements Directive (CRD IV) and the E.U. Capital Requirements Regulation (CRR). These capital regulations are largely based on the Basel Committee on Banking Supervision's (Basel Committee) final capital framework for strengthening international capital standards (Basel III). The Basel Committee is the primary global standard setter for prudential bank regulation, and its member jurisdictions implement regulations based on its standards and guidelines.

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

Under CRD IV, 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% of RWAs, consisting entirely of capital that qualifies as CET1, phased in ratably in annual increments of 0.625% from January 1, 2016 and became fully effective on January 1, 2019.
- A countercyclical capital buffer of up to 2.5% (and also 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 currently adds 0.28% to the CET1 minimum ratio. The countercyclical capital buffer applicable to the company could change in the future and, as a result, the company's minimum ratios could increase.
- Individual capital guidance under Pillar 2A (an additional amount to cover risks not adequately captured in Pillar 1). The PRA performs a periodic supervisory review of the company's ICAAP, which leads to a final determination by the PRA of individual capital guidance under Pillar 2A. This is a point in time assessment of the minimum amount of capital the PRA considers that a firm should hold.

Regulatory Risk-Based Capital Ratios

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

	As of	
$ in millions	**November 2018**	December 2017
Risk-based capital and RWAs		
CET1	**$ 23,899**	$ 24,871
Additional Tier 1 notes	**$ 8,300**	$ 5,800
Tier 1 capital	**$ 32,199**	$ 30,671
Tier 2 capital	**$ 5,377**	$ 5,377
Total capital	**$ 37,576**	$ 36,048
RWAs	**$206,007**	$225,942
Risk-based capital ratios		
CET1 ratio	**11.6%**	11.0%
Tier 1 capital ratio	**15.6%**	13.6%
Total capital ratio	**18.2%**	16.0%
Risk-based minimum ratios		
CET1 ratio	**8.1%**	7.2%
Tier 1 capital ratio	**10.1%**	9.1%
Total capital ratio	**12.7%**	11.8%

In the table above, the risk-based minimum capital ratios incorporate the Pillar 2A capital guidance received from the PRA and could change in the future.

In addition to the Pillar 2A capital guidance, the PRA also defines forward looking capital guidance which represents the PRA's view of the capital that the company would require to absorb losses in stressed market conditions. This is known as Pillar 2B or the "PRA buffer" and is not reflected in the minimum ratios shown above. As the capital conservation buffer phases in, as described above, it will fully or partially replace the PRA buffer.

During the periods ended November 2018 and December 2017, the company was in compliance with the capital requirements set by the PRA.

Certain CRD IV rules are subject to final technical standards and clarifications, which will be issued by the European Banking Authority (EBA) and adopted by the European Commission and PRA. All capital, RWAs and estimated ratios are based on current interpretation, expectations and understanding of CRD IV and may evolve as its interpretation and application is discussed with the company's regulators.

Capital Resources (Audited)

The table below presents capital components under CRD IV.

	As of	
$ in millions	**November 2018**	December 2017
Called up share capital	**$ 582**	$ 582
Share premium account including capital reserves	**4,864**	4,881
Retained earnings	**20,070**	20,727
Accumulated other comprehensive income	**101**	(289)
Deductions	**(1,718)**	(1,030)
CET 1	**23,899**	24,871
Additional Tier 1 notes	**8,300**	5,800
Tier 1 capital	**$32,199**	$30,671
Tier 2 and Total capital		
Long-term subordinated loans	**$ 5,377**	$ 5,377
Tier 2 capital	**5,377**	5,377
Total capital	**$37,576**	$36,048

In the table above:

- CET1 as of November 2018 decreased by $972 million compared with December 2017, primarily due to the company paying a dividend of $2.50 billion in November 2018, partially offset by the company's profit of $2.20 billion for the period ended November 2018.
- Tier 1 capital as of November 2018 increased by $1.53 billion compared with December 2017, due to the issuance of $2.50 billion of AT1 notes in November 2018, partially offset by the reduction in CET1.

See Notes 22 and 23 to the financial statements for further information.

Risk-Weighted Assets

The table below presents the components of RWAs within the regulatory capital ratios under CRD IV.

	As of	
$ in millions	**November 2018**	December 2017
RWAs		
Credit RWAs	**$107,554**	$126,335
Market RWAs	**84,349**	85,272
Operational RWAs	**14,104**	14,335
Total	**$206,007**	$225,942

In the table above, credit RWAs as of November 2018 decreased by $18.78 billion compared with December 2017, primarily due to the company updating its methodology for calculating loss given default. As of November 2018, the estimated impact of this change was an increase in the company's CET1 ratio by 0.8 percentage points.

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

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

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

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

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

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

Concentration Risk. Under CRD IV, institutions are required to monitor and control their large exposures. The large exposure framework is designed to limit the risk of over-reliance on an individual counterparty or a group of connected counterparties. There is a general limit applied to all of the institution's exposures to a single counterparty or groups of connected counterparties, which is set at 25% of eligible capital. The framework includes reporting requirements, hard limits and additional concentration capital charges for trading book large exposures. As of November 2018 and December 2017, the company had no concentration risk capital requirements.

Leverage Ratio

The company is required to monitor and disclose its leverage ratio using the CRR's definition of exposure as amended by the European Commission Leverage Ratio Delegated Act. The European Commission's November 2016 proposal to amend the CRR would implement the Basel III leverage ratio framework by establishing a 3% minimum leverage ratio requirement for certain E.U. financial institutions, including the company, but it has not been enacted. This leverage ratio compares the CRR's definition of 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. Any required minimum leverage ratio is expected to become effective for the company no earlier than January 1, 2021.

The Basel Committee has also issued consultation papers on, among other matters, changes to leverage ratio treatment of client cleared derivatives and the public disclosure of daily average balances for certain components of leverage ratio calculations.

The table below presents the leverage ratio under CRR.

	As of	
$ in millions	**November 2018**	December 2017
Tier 1 capital	**$ 32,199**	$ 30,671
Leverage exposure	**$771,438**	$748,140
Leverage ratio	**4.2%**	4.1 %

The leverage ratio as of November 2018 increased compared with December 2017, primarily due to an increase in the company's Tier 1 capital (see "Capital Resources" above for further information), partially offset by an increase in leverage exposure.

This leverage ratio is based on the company's current interpretation and understanding of this rule and may evolve as the interpretation and application of this rule is discussed with the company's regulators.

Regulatory Matters and Other Developments

Regulatory Matters

The company's businesses are subject to significant and evolving regulation. Reforms have been adopted or are being considered by regulators and policy-makers worldwide. 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 the final E.U. and/or U.K. regulations.

The company is currently subject to E.U. legal and regulatory requirements, based on directly binding regulations of the E.U. and the implementation of E.U. directives by the U.K. The company currently benefits from non-discriminatory access to E.U. clients and infrastructure based on E.U. treaties and E.U. legislation, including cross-border "passporting" arrangements and specific arrangements for the establishment of E.U. branches. As a result of the U.K.'s notification to the European Council of its decision to leave the E.U. (Brexit), there is considerable uncertainty as to the regulatory regime infrastructure that will be applicable in the U.K. and the regulatory framework that will govern transactions and business undertaken by the company in the remaining E.U. countries. E.U. regulations that are in effect in the U.K. as of March 29, 2019 may continue to apply to the company following Brexit. In addition, proposals by the Basel Committee or the E.U. may be implemented in the U.K. and apply to the company.

Risk-Based Capital Ratios. In January 2019, the Basel Committee finalised revisions to the framework for calculating capital requirements for market risk (known as the "Fundamental Review of the Trading Book" or "FRTB"), which is expected to increase market risk capital requirements for most banking organisations, although to a lesser degree than the version of the framework issued in January 2016. The revised framework, among other things, revises the standardised approach and internal models to calculate market risk requirements and clarifies the scope of positions subject to market risk capital requirements. The Basel Committee has proposed that national regulators implement the revised framework beginning January 1, 2022. The European Commission has not yet proposed rules implementing the 2019 version of the revised framework for E.U. financial institutions.

In December 2017, the Basel Committee published standards that it described as the finalisation of the Basel III post-crisis regulatory reforms. These standards set a floor on internally developed capital requirements at a percentage of the capital requirements under the standardised approach. They also revised the Basel Committee's standardised and model-based approaches for credit risk, provide a new standardised approach for operational risk capital and revise the frameworks for credit valuation adjustment risk. The Basel Committee has proposed that national regulators implement these standards beginning January 1, 2022, and that the new floor be phased in through January 1, 2027.

The Basel Committee's standards are not effective in any jurisdiction until rules implementing such standards have been implemented by the relevant regulators in such jurisdiction.

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

Minimum Requirements for Own Funds and Eligible Liabilities. In June 2018, the Bank of England published a statement of policy on internal minimum requirement for own funds and eligible liabilities (MREL), which requires a material U.K. subsidiary of an overseas banking group, such as the company, to meet a minimum internal MREL requirement to facilitate the transfer of losses to its resolution entity, which for the company is Group Inc. The transitional minimum internal MREL requirement began to phase in from January 1, 2019, and will become fully effective on January 1, 2022. The company's regulatory capital and a portion of its intercompany borrowings, which have been amended to meet subordination and maturity requirements, serve to meet its internal MREL requirement. In addition, in order to comply with the MREL statement of policy, bail-in triggers have been provided to the Bank of England over certain intercompany regulatory capital and senior debt instruments issued by the company. These triggers enable the Bank of England to write down such instruments or convert such instruments to equity. The triggers can be exercised by the Bank of England if it determines that the company has reached the point of non-viability and the FRB and the Federal Deposit Insurance Corporation have not objected to the bail-in or if Group Inc. enters bankruptcy or similar proceedings.

Other Developments

Brexit. In March 2017, the U.K. commenced the formal proceedings to end the U.K.'s membership in the E.U. There is a two year window during which the terms of the U.K.'s exit from the E.U. may be negotiated. This period expires on March 29, 2019.

The E.U. and the U.K. had negotiated a withdrawal agreement which both the U.K. and the E.U. Parliaments must ratify (the Withdrawal Agreement). The U.K. Parliament has not yet approved the Withdrawal Agreement. As a result, there is a possibility that the U.K. will leave the E.U. on March 29, 2019 without any transitional arrangements in place and firms based in the U.K., including the company, will lose their existing access arrangements to the E.U. markets; such a scenario is referred to as a "hard" Brexit.

Pursuant to the Withdrawal Agreement, the existing access arrangements for financial services would continue unchanged until the end of 2020, with potential for one further extension of up to two years, subsequent to which a new trade relationship may be established between the E.U. and the U.K. While the parties have issued a political declaration on the outline of such co-operation, the exact terms of that future relationship, including the exact terms of access to each other's financial markets, remain subject to future negotiation. If the Withdrawal Agreement is not ratified, beginning March 29, 2019, the date on which the U.K. is scheduled to leave the E.U., firms established in the U.K., including the company, would lose their pan-E.U. "passports" and generally be treated like entities in countries outside the E.U. They may however, benefit from emergency measures, including those that several E.U. member states have introduced so that existing contractual arrangements are not disrupted, in order to minimise any impact on existing transactions. The E.U. has also provided interim recognition to U.K. clearing houses so that E.U. clients can continue to access them.

GS Group has been preparing for anticipated outcomes, including a hard Brexit, with the goal of ensuring that GS Group maintains access to E.U. markets and is able to continue to provide products and services to its E.U. clients. In order for GS Group to continue to serve its E.U. clients, clients that face the company may need to face an entity within one of the remaining E.U. member states, unless national laws in the applicable member state permit cross-border services from non-E.U. entities (for example, based on specific licences or exemptions).

GS Group's plan to manage a hard Brexit scenario involves transition of certain activities currently conducted by the company to new and/or different legal entities; working with clients and counterparties to redocument transactions so they face one of GS Group's E.U. legal entities; changes to GS Group infrastructure; obtaining and developing new real estate; and, in some cases, moving staff to offices in the E.U.

In addition, in order to continue servicing certain of its clients, the company is establishing third country branches and obtaining cross-border licences in certain E.U. member states.

A large portion of the company's Institutional Client Services and Investment Banking clients are classified as professionals or eligible counterparties in specific jurisdictions and may choose to continue being serviced by, and to continue to transact with, the U.K. service providers and entities under domestic arrangements provided by individual member states (licences or exemptions). The company expects to continue providing products and services in this manner to the extent that clients prefer such coverage and it is available. This would mean those clients who choose to do so in certain jurisdictions could continue to face the company.

Replacement of Interbank Offered Rates (IBORs), including London Interbank Offered Rate (LIBOR). Central banks and regulators in a number of major jurisdictions (for example, U.S., U.K., E.U., Switzerland and Japan) have convened working groups to find, and implement the transition to, suitable replacements for IBORs. The FCA which regulates LIBOR has announced that it will not compel panel banks to contribute to LIBOR after 2021. The E.U. Benchmarks Regulation imposed conditions under which only compliant benchmarks may be used in new contracts after 2021.

Market-led working groups in major jurisdictions, noted above, have already selected their preferred alternative risk-free reference rates and have published and will continue to publish consultations on issues, including methodologies for fallback provisions in contracts and financial instruments linked to IBORs and the development of term structures for alternative risk-free reference rates, which will be critical for financial markets to transition to the use of alternative risk-free reference rates in place of IBORs.

The company has exposure to IBORs, including in financial instruments and contracts that mature after 2021. The company's exposures arise from securities it holds in connection with market-making activities, as well as derivatives it enters into to make markets for its clients and hedge its risks. The company also has exposures to IBORs in the floating-rate securities and other funding products it issues.

The markets for alternative risk-free reference rates are developing and as they develop the company expects to transition to these alternative risk-free reference rates.

GS Group and the company is seeking to facilitate an orderly transition from IBORs to alternative risk-free reference rates for itself and its clients. Accordingly, GS Group has created a programme, which includes the company, which focuses on:

- Evaluating and monitoring the impacts across its businesses, including transactions and products;
- Identifying and evaluating the scope of existing financial instruments and contracts that may be affected, and the extent to which those financial instruments and contracts already contain appropriate fall-back language or would require amendment, either through bilateral negotiation or using industry-wide tools, such as protocols;
- Enhancements to infrastructure (for example, models, systems) to prepare for a smooth transition to alternative risk-free reference rates;
- Active participation in central bank and sector working groups, including responding to industry consultations; and
- Client education and communication.

As part of this programme, GS Group has sought to systematically identify the risks inherent in this transition, including financial risks (for example, earnings volatility under stress due to widening swap spreads and the loss of funding sources as a result of counterparties' reluctance to participate in transitioning their positions) and non-financial risks (for example, the inability to negotiate fallbacks with clients and/or counterparties and operational impediments for the transition). GS Group is engaged with a range of industry and regulatory working groups (for example, International Swap Dealers Association, the Bank of England's Working Group on Sterling Risk Free Reference Rates and the Federal Reserve's Alternative Reference Rates Committee) and the company will continue to engage with its clients and counterparties to facilitate an orderly transition to alternative risk-free reference rates.

Principal Risks and Uncertainties

The company faces a variety of risks that are substantial and inherent in its businesses, including market, liquidity, credit, operational, model, legal, regulatory and reputational risks. The following are some of the more important factors that could affect the company's businesses.

Economic and Market Conditions

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

The company's financial performance is highly dependent on the environment in which its businesses operate. A favourable business environment is generally characterised by, among other factors, high global GDP growth, regulatory and market conditions which result in transparent, liquid and efficient capital markets, low inflation, high business and investor confidence, stable geopolitical conditions, clear regulations and strong business earnings.

Unfavourable or uncertain economic and market conditions can be caused by: concerns about sovereign defaults; uncertainty concerning fiscal or monetary policy; the extent of and uncertainty about tax and other regulatory changes; declines in economic growth, business activity or investor or business confidence; limitations on the availability or increases in the cost of credit and capital; illiquid markets; increases in inflation, interest rates, exchange rate or basic commodity price volatility or default rates; the imposition of tariffs or other limitations on international trade and travel; outbreaks of domestic or international tensions or hostilities, terrorism, nuclear proliferation, cybersecurity threats or attacks and other forms of disruption to or curtailment of global communication, energy transmission or transportation networks or other geopolitical instability or uncertainty, such as corporate, political or other scandals that reduce investor confidence in capital markets; extreme weather events or other natural disasters or pandemics; or a combination of these or other factors.

The financial services industry and the securities markets have been materially and adversely affected in the past by significant declines in the values of nearly all asset classes and by a serious lack of liquidity. In addition, concerns about European sovereign debt risk and its impact on the European banking system, the impact of Brexit, and changes in interest rates and other market conditions or actual changes in interest rates and other market conditions, have resulted, at times, in significant volatility while negatively impacting the levels of client activity.

General uncertainty about economic, political and market activities, and the scope, timing and impact of regulatory reform, as well as weak consumer, investor and chief executive officer confidence resulting in large part from such uncertainty, can negatively impact client activity, which adversely affects many of the company's businesses. Periods of low volatility and periods of high volatility combined with a lack of liquidity, have at times had an unfavourable impact on the company's market-making businesses.

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

The company's revenues and profitability and those of its competitors have been and will continue to be impacted by requirements relating to capital, additional loss-absorbing capacity, leverage, minimum liquidity and long-term funding levels, requirements related to resolution and recovery planning, derivatives clearing and margin rules and levels of regulatory oversight, as well as limitations on which and, if permitted, how certain business activities may be carried out by financial institutions.

The degree to which these and other changes since the financial crisis continue to have an impact on the profitability of financial institutions will depend on the effect of regulations adopted after 2008 and new regulations, the manner in which markets, market participants and financial institutions have continued to adapt to these regulations, and the prevailing economic and financial market conditions. However, there is a significant risk that such changes will negatively impact the absolute level of revenues, profitability and return on equity of the company and other financial institutions.

Regulation

As a participant in the financial services industry and a subsidiary of a systemically important financial institution, the company is subject to extensive regulation, principally in the U.K., and the E.U. more generally, but also in the U.S. as a subsidiary of Group Inc. and in certain other jurisdictions. The company faces the risk of significant intervention by law enforcement, regulatory and tax authorities, as well as private litigation, in all jurisdictions in which it conducts its businesses. In many cases, the company's activities may be subject to overlapping and divergent regulation in different jurisdictions. Among other things, as a result of law enforcement authorities, regulators or private parties challenging the company's compliance with laws and regulations, the company or its employees could be fined or criminally sanctioned, prohibited from engaging in certain business activities, subject to limitations or conditions on its business activities including higher capital requirements, or subjected to new or substantially higher taxes or other governmental charges in connection with the conduct of its businesses or with respect to its employees. Such limitations or conditions may limit business activities and negatively impact the company's profitability.

In addition to the impact on the scope and profitability of the company's business activities, day-to-day compliance with laws and regulations, in particular those adopted since 2008, has involved and will continue to involve significant amounts of time, including that of the company's senior leaders and that of a large number of dedicated compliance and other reporting and operational personnel, all of which may negatively impact the company's profitability.

If there are new laws or regulations or changes in the enforcement of existing laws or regulations applicable to the company's businesses or those of the company's clients, including capital, liquidity, leverage, long-term debt, total loss-absorbing capacity (TLAC) and margin requirements, restrictions on other business practices, reporting requirements, requirements relating to the implementation of the E.U. Bank Recovery and Resolution Directive, tax burdens and compensation restrictions, that are imposed on a limited subset of financial institutions (either based on size, method of funding, activities, geography or other criteria) which may include the company or Group Inc., compliance with these new laws and regulations, or changes in the enforcement of existing laws or regulations, could adversely affect the company's ability to compete effectively with other institutions that are not affected in the same way. In addition, regulation imposed on financial institutions or market participants generally, such as taxes on financial transactions, could adversely impact levels of market activity more broadly, and thus impact the company's businesses.

These developments could impact the company's profitability in the affected jurisdictions, or even make it uneconomic to continue to conduct all or certain businesses in such jurisdictions, or could result in the company incurring significant costs associated with changing business practices, restructuring businesses, moving all or certain businesses and employees to other locations or complying with applicable capital requirements, including liquidating assets or raising capital in a manner that adversely increases the company's funding costs or otherwise adversely affects its shareholder and creditors.

The E.U. and national financial legislators and regulators have proposed or adopted numerous market reforms that have impacted and may continue to impact the company's businesses. These include stricter capital and liquidity requirements (including proposed amendments to CRD IV and the CRR), authorisations for regulators to impose position limits, restrictions on short selling and credit default swaps and market abuse regulations.

The implementation of higher capital requirements, the liquidity coverage ratio, the net stable funding ratio, requirements relating to long-term debt and TLAC and the prohibition on proprietary trading and the sponsorship of, or investment in, covered funds by the Volcker Rule may continue to adversely affect the company's profitability and competitive position, particularly if these requirements do not apply, or do not apply equally, to the company's competitors or are not implemented uniformly across jurisdictions.

The company is also subject to laws and regulations, such as the E.U.'s General Data Protection Regulation, relating to the privacy of the information of clients, employees or others, and any failure to comply with these laws and regulations could expose the company to liability and/or reputational damage. As new privacy-related laws and regulations are implemented, the time and resources needed for the company to comply with such laws and regulations, as well as the company's potential liability for non-compliance and reporting obligations in the case of data breaches, may significantly increase.

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

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

For information about regulatory developments, which are relevant to the company's businesses, see "Regulatory Matters and Other Developments — Regulatory Matters".

Brexit

In March 2017, the U.K. notified the European Council of its decision to leave the E.U. As discussed in "Regulatory Matters and Other Developments — Regulatory Matters" there is considerable uncertainty as to the regulatory framework that will govern transactions and business undertaken by the company in the E.U., both in the near term and the long term. As a result, the company faces numerous risks that could adversely affect the conduct of its businesses, its profitability and liquidity. In addition, as a result of the company establishing third country branches in anticipation of Brexit, it will be subject to additional regulation and supervision in those jurisdictions.

The company is incorporated and headquartered in the U.K., and currently benefits from non-discriminatory access to E.U. clients and infrastructure based on E.U. treaties and E.U. legislation, including arrangements for cross-border "passporting" and the establishment of E.U. branches. Because the Withdrawal Agreement has not been ratified by the U.K. and E.U. Parliaments, it is uncertain whether the company will continue to benefit from the existing access arrangements for financial services following March 29, 2019, the date on which the U.K. is scheduled to leave the E.U. Further, even if the Withdrawal Agreement is ratified, there is uncertainty regarding the terms of the long-term trading relationship between the E.U. and the U.K., including the terms of access to each other's financial markets.

In the event of a hard Brexit scenario, certain client relationships and activities currently undertaken by the company may be transitioned to other E.U. subsidiaries of Group Inc., which may result in a decline in the company's net revenues and profitability, and could adversely affect its businesses and liquidity.

In addition, Brexit has created an uncertain political and economic environment in the U.K., and may create such environments in other E.U. member states. Political and economic uncertainty has in the past led to, and the outcome of Brexit could lead to, declines in market liquidity and activity levels, volatile market conditions, a contraction of available credit, changes in interest rates or exchange rates, weaker economic growth and reduced business confidence all of which could adversely impact the company's business.

Market Volatility

The company's businesses have been and may be adversely affected by declining asset values. This is particularly true for those businesses in which the company has net "long" positions, receives fees based on the value of assets managed, or receives or posts collateral. Many of the company's businesses have net "long" positions in debt securities, loans, derivatives, mortgages, equities (including private equity) and most other asset classes. These include positions taken when the company acts as a principal to facilitate clients' activities, including exchange-based market-making activities, or commits large amounts of capital to maintain positions in interest rate and credit products, as well as through currencies, commodities, equities and mortgage-related activities. In addition, the company invests in similar asset classes. Substantially all of the company's investing and market-making positions are marked-to-market on a daily basis and declines in asset values directly and immediately impact earnings, unless exposures have been effectively hedged.

In certain circumstances (particularly in the case of credit products and private equities or other securities that are not freely tradable or lack established and liquid trading markets), it may not be possible or economic to hedge such exposures and to the extent that this is done the hedge may be ineffective or may greatly reduce the company's ability to profit from increases in the values of the assets. Sudden declines and significant volatility in the prices of assets may substantially curtail or eliminate the trading markets for certain assets, which may make it difficult to sell, hedge or value such assets. The inability to sell or effectively hedge assets reduces the ability to limit losses in such positions and the difficulty in valuing assets may negatively affect the company's capital, liquidity or leverage ratios, increase its funding costs and generally require maintaining additional capital.

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

Collateral is posted to support obligations of the company and received to support the obligations of clients and counterparties in connection with client execution businesses. When the value of the assets posted as collateral or the credit ratings of the party posting collateral decline, the party posting the collateral may need to provide additional collateral or, if possible, reduce its trading position. An example of such a situation is a "margin call" in connection with a brokerage account. Therefore, declines in the value of asset classes used as collateral mean that either the cost of funding positions is increased or the size of positions is decreased. If the company is the party providing collateral, this can increase costs and reduce profitability and if the company is the party receiving collateral, this can also reduce profitability by reducing the level of business done with clients and counterparties. In addition, volatile or less liquid markets increase the difficulty of valuing assets which can lead to costly and time-consuming disputes over asset values and the level of required collateral, as well as increased credit risk to the recipient of the collateral due to delays in receiving adequate collateral. In cases where the company forecloses on collateral, sudden declines in the value or liquidity of such collateral may, despite credit monitoring, over-collateralisation, the ability to call for additional collateral or the ability to force repayment of the underlying obligation, result in significant losses to the company, especially where there is a single type of collateral supporting the obligation. In addition, the company may be subject to claims that the foreclosure was not permitted under the legal documents, was conducted in an improper manner or caused a client or counterparty to go out of business.

Liquidity

Liquidity is essential to the company's businesses. It is of critical importance to the company, as most of the failures of financial institutions have occurred in large part due to insufficient liquidity. The company's liquidity could be impaired by an inability to access secured and/or unsecured debt markets, an inability to access funds from Group Inc. or other affiliates, an inability to sell assets or redeem investments or unforeseen outflows of cash or collateral. This situation may arise due to circumstances that the company may be unable to control, such as a general market disruption or an operational problem that affects third parties or the company or its affiliates or even by the perception amongst market participants that the company, or other market participants, are experiencing greater liquidity risk.

The company employs structured products to benefit its clients and hedge its own risks. The financial instruments that the company holds and the contracts to which it is a party are often complex, and these complex structured products often do not have readily available markets to access in times of liquidity stress. The company's investing activities may lead to situations where the holdings from these activities represent a significant portion of specific markets, which could restrict liquidity for the company's positions.

Further, the company's ability to sell assets may be impaired if there is not generally a liquid market for such assets, as well as in circumstances where other market participants are seeking to sell similar assets at the same time, as is likely to occur in a liquidity or other market crisis or in response to changes to rules or regulations. In addition, financial institutions with which the company interacts may exercise set-off rights or the right to require additional collateral, including in difficult market conditions, which could further impair the company's liquidity.

The company is an indirect, wholly-owned operating subsidiary of Group Inc. and depends on Group Inc. for capital and funding. The credit ratings of the company and those of Group Inc. are important to the company's liquidity. A reduction in the company's and/or Group Inc.'s credit ratings could adversely affect the company's liquidity and competitive position, increase borrowing costs, limit access to the capital markets or funding from Group Inc. or trigger obligations under certain provisions in some trading and collateralised financing contracts. Under these provisions, counterparties could be permitted to terminate contracts with the company or Group Inc. or require additional collateral. Termination of trading and collateralised financing contracts could cause losses and impair liquidity by requiring Group Inc. or the company to find other sources of financing or to make significant cash payments or securities movements.

The company's and Group Inc.'s cost of obtaining long-term unsecured funding is directly related to both the credit spreads of the company and Group Inc. Increases in the credit spreads of the company and/or Group Inc. can significantly increase the cost of this funding. Changes in credit spreads are continuous, market-driven, and subject at times to unpredictable and highly volatile movements. The credit spreads of the company and/or Group Inc. are also influenced by market perceptions of its and/or Group Inc.'s creditworthiness. In addition, the credit spreads of the company and/or Group Inc. may be influenced by movements in the costs to purchasers of credit default swaps referenced to Group Inc.'s long-term debt. The market for credit default swaps has proven to be extremely volatile and at times has lacked a high degree of transparency or liquidity.

Regulatory changes relating to liquidity may also negatively impact the company's results of operations and competitive position. Recently, numerous regulations have been adopted or proposed to introduce more stringent liquidity requirements for large financial institutions. These regulations address, among other matters, liquidity stress testing, minimum liquidity requirements, wholesale funding, restrictions on short-term debt and structured notes issued by top-tier holding companies and prohibitions on parent guarantees that are subject to certain cross-defaults. New and prospective liquidity-related regulations may overlap with, and be impacted by, other regulatory changes, including rules relating to minimum long-term debt requirements and TLAC, capital, leverage and resolution and recovery frameworks applicable to large financial institutions. Given the overlapping and complex interactions among these new and prospective regulations, they may have unintended cumulative effects, and their full impact will remain uncertain, while regulatory reforms are being adopted and market practices develop in response to such reforms.

Resolution and Recovery Planning

The circumstances in which a resolution authority would exercise its "bail-in" powers to recapitalise a failing entity by writing down its unsecured debt or converting it into equity are uncertain. If these powers were to be exercised (or if there was a suggestion that they could be exercised) in respect of the company, such exercise would likely have a material adverse effect on the value of debt investments in the company, including a potential loss of some or all of such investments.

Credit Markets

Widening credit spreads for the company or Group Inc., as well as significant declines in the availability of credit, have in the past adversely affected the company's ability to borrow on a secured and unsecured basis and may do so in the future. The company obtains the majority of its unsecured funding from Group Inc., which funds itself on an unsecured basis by issuing long-term debt, by accepting deposits at its bank subsidiaries, by issuing hybrid financial instruments, or by obtaining bank loans or lines of credit. The company seeks to finance many of its assets on a secured basis. Any disruptions in the credit markets may make it harder and more expensive to obtain funding for businesses. If the company's available funding is limited or the company is forced to fund operations at a higher cost, these conditions may require curtailment of business activities and increase the cost of funding, both of which could reduce profitability, particularly in businesses that involve investing and market making.

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

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

Concentration of Risk

Concentration of risk increases the potential for significant losses in market-making, underwriting, and investing activities. The number and size of such transactions may affect the company's results of operations in a given period. Moreover, because of concentration of risk, the company may suffer losses even when economic and market conditions are generally favourable for competitors. Disruptions in the credit markets can make it difficult to hedge these credit exposures effectively or economically.

In the ordinary course of business, the company may be subject to a concentration of credit risk to a particular counterparty, borrower, issuer, including sovereign issuers, or geographic area or group of related countries, such as the E.U. A failure or downgrade of, or default by, such entities could negatively impact the company's businesses, perhaps materially, and the systems by which the company sets limits and monitors the level of its credit exposure to individual entities, industries and countries may not function as anticipated. Regulatory reforms, including the European Market Infrastructure Regulation and the Dodd-Frank Wall Street Reform and Consumer Protection Act have led to increased centralisation of trading activity through particular clearing houses, central agents or exchanges, which has significantly increased the company's concentration of risk with respect to these entities. While the company's activities expose it to many different industries, counterparties and countries, the company routinely executes a high volume of transactions with counterparties engaged in financial services activities, including brokers and dealers, commercial banks, clearing houses and exchanges. This has resulted in significant credit concentration with respect to these counterparties.

Credit Quality

The company is exposed to the risk that third parties who owe money, securities or other assets will not perform their obligations. These parties may default on their obligations to the company due to bankruptcy, lack of liquidity, operational failure or other reasons. A failure of a significant market participant, or even concerns about a default by such an institution, could lead to significant liquidity problems, losses or defaults by other institutions, which in turn could adversely affect the company.

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

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

Composition of Client Base

The company's client base is not the same as that of its major competitors. The company's businesses may have a higher or lower percentage of clients in certain industries or markets than some or all of its competitors. Therefore, unfavourable industry developments or market conditions affecting certain industries or markets may result in the company's businesses underperforming relative to similar businesses of a competitor if its businesses have a higher concentration of clients in such industries or markets. For example, the company's market-making businesses have a higher percentage of clients with actively managed assets than its competitors and such clients could be disproportionately affected during periods of low volatility.

Correspondingly, favourable or simply less adverse developments or market conditions involving industries or markets in a business where the company has a lower concentration of clients in such industry or market may also result in the company underperforming relative to a similar business of a competitor that has a higher concentration of clients in such industry or market. For example, the company has a smaller corporate client base in its market-making businesses than many of its peers and therefore the company's competitors may benefit more from increased activity by corporate clients.

Derivative Transactions

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

As a signatory to the International Swaps and Derivatives Association Universal Resolution Stay Protocol (ISDA Universal Protocol) and the International Swaps and Derivatives Association 2018 U.S. Resolution Stay Protocol (collectively, ISDA Protocols), the company may not be able to exercise termination rights and other remedies against counterparties and, as this new regime has not yet been tested, the company may suffer risks or losses that it would not have expected to suffer if it could immediately close out transactions upon a termination event. Various non-U.S. regulators have also proposed regulations contemplated by the ISDA Universal Protocol, which might result in additional limitations on the company's ability to exercise remedies against counterparties. The impact of the ISDA Protocols and these rules and regulations will depend on the development of market practices and structures, and their extension to repurchase agreements and other instruments that are not derivative contracts.

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

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

Operational Infrastructure

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

Many rules and regulations worldwide govern the company's obligations to execute transactions and report such transactions and other information to regulators, exchanges and investors. Compliance with these legal and reporting requirements can be challenging, and the company has been, and may in the future be, subject to regulatory fines and penalties for failing to follow these rules or to report timely, accurate and complete information in accordance with such rules. As such requirements expand, compliance with these rules and regulations has become more challenging.

The use of computing devices and phones is critical to the work done by the company's employees and the operation of the company's systems and businesses and those of its clients and third-party service providers and vendors. Fundamental security flaws in computer chips found in many types of these computing devices and phones have been reported in the past and may be discovered in the future. Addressing this and similar issues could be costly and affect the performance of these businesses and systems, and operational risks may be incurred in applying fixes and there may still be residual security risks.

Additionally, although the prevalence and scope of applications of distributed ledger technology and similar technologies is growing, the technology is also nascent and may be vulnerable to cyber attacks or have other inherent weaknesses. The company may be, or may become, exposed to risks related to distributed ledger technology through the company's facilitation of clients' activities involving financial products linked to distributed ledger technology, such as blockchain or cryptocurrencies, the company's investments in firms that seek to develop platforms based on distributed ledger technology, and the use of distributed ledger technology by third-party vendors, clients, counterparties, clearing houses and other financial intermediaries.

In addition, the company faces the risk of operational failure or significant operational delay, termination or capacity constraints of any of the clearing agents, exchanges, clearing houses or other financial intermediaries that it uses to facilitate securities and derivatives transactions, and as interconnectivity with clients grows, the company will increasingly face the risk of operational failure or significant operational delay with respect to clients' systems.

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

In addition, although the company seeks to diversify its third-party vendors to increase its resiliency, the company is also exposed to the risk that a disruption or other information technology event at a common service provider to the company's vendors could impede their ability to provide products or services to the company. The company may not be able to effectively monitor or mitigate operational risks relating to its vendors' use of common service providers.

Cyber Security

The company is regularly the target of attempted cyber attacks, including denial-of-service attacks, and must continuously monitor and develop its systems to protect its technology infrastructure and data from misappropriation or corruption. The increasing migration of the company's communication and other platforms from company provided devices to employee-owned devices presents additional risks of cyber attacks. In addition, due to the interconnectivity with third-party vendors (and their respective service providers), central agents, exchanges, clearing houses and other financial institutions, the company could be adversely impacted if any of them is subject to a successful cyber attack or other information security event. These effects could include the loss of access to information or services from the third party subject to the cyber attack or other information security event, which could, in turn, interrupt certain of the company's businesses.

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

Although the company takes protective measures and endeavours to modify them as circumstances warrant, its computer systems, software and networks may be vulnerable to unauthorised access, misuse, computer viruses or other malicious code, cyber attacks on the company's vendors and other events that could have a security impact. Due to the complexity and interconnectedness of the company's systems, the process of enhancing protective measures can itself create a risk of systems disruptions and security issues.

If one or more of such events occur, this potentially could jeopardise the company or its clients' or counterparties' confidential and other information processed and stored in, and transmitted through, the company's computer systems and networks, or otherwise cause interruptions or malfunctions in the company's, its clients', its counterparties' or third parties' operations, which could impact their ability to transact with the company or otherwise result in legal or regulatory action, significant losses or reputational damage.

In addition, such an event could persist for an extended period of time before being detected, and, following detection, it could take considerable time for the company to obtain full and reliable information about the extent, amount and type of information compromised. During the course of an investigation, the company may not know the full impact of the event and how to remediate it, and actions, decisions and mistakes that are taken or made may further increase the negative effects of the event on the company's business, results of operations and reputation.

The increased use of mobile and cloud technologies can heighten these and other operational risks. The company expects to expend significant additional resources on an ongoing basis to modify protective measures and to investigate and remediate vulnerabilities or other exposures, but these measures may be ineffective and the company may be subject to legal or regulatory action, and financial losses that are either not insured against or not fully covered through any insurance it maintains. Certain aspects of the security of such technologies are unpredictable or beyond the company's control, and the failure by mobile technology and cloud service providers to adequately safeguard their systems and prevent cyber attacks could disrupt the company's operations and result in misappropriation, corruption or loss of confidential and other information. In addition, there is a risk that encryption and other protective measures, despite their sophistication, may be defeated, particularly to the extent that new computing technologies vastly increase the speed and computing power available.

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

Risk Management

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

The models that the company uses to assess and control its risk exposures reflect assumptions about the degrees of correlation or lack thereof among prices of various asset classes or other market indicators. In times of market stress or other unforeseen circumstances, such as those that occurred during 2008 and early 2009, and to some extent since 2011, previously uncorrelated indicators may become correlated, or conversely previously correlated indicators may move in different directions. These types of market movements have at times limited the effectiveness of the company's hedging strategies and have caused it to incur significant losses, and they may do so in the future. These changes in correlation can be exacerbated where other market participants are using risk or trading models with assumptions or algorithms that are similar to the company's. In these and other cases, it may be difficult to reduce the company's risk positions due to the activity of other market participants or widespread market dislocations, including circumstances where asset values are declining significantly or no market exists for certain assets.

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

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

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

New Business Initiatives

The company faces enhanced risks as new business initiatives lead it to transact with a broader array of clients and counterparties and expose it to new asset classes and new markets. A number of the company's recent and planned business initiatives and expansions of existing businesses may bring it into contact, directly or indirectly, with individuals and entities that are not within the company's traditional client and counterparty base and expose it to new asset classes and new markets. For example, the company continues to transact business and invest in new regions, including a wide range of emerging and growth markets.

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

Operating in Multiple Jurisdictions

In conducting the company's businesses and maintaining and supporting its global operations, the company is subject to risks of possible nationalisation, expropriation, price controls, capital controls, exchange controls and other restrictive governmental actions, as well as the outbreak of hostilities or acts of terrorism. For example, sanctions have been imposed by the U.S. and E.U. on certain individuals and companies in Russia. In many countries, the laws and regulations applicable to the securities and financial services industries and many of the transactions in which the company is involved are uncertain and evolving, and it may be difficult to determine the exact requirements of local laws in every market. Any determination by local regulators that the company has not acted in compliance with the application of local laws in a particular market or a failure to develop effective working relationships with local regulators could have a significant and negative effect not only on the company's businesses in that market but also on its reputation generally. Further, in some jurisdictions a failure to comply with laws and regulations may subject the company and its personnel not only to civil actions but also criminal actions. The company is also subject to the enhanced risk that transactions it structures might not be legally enforceable in all cases.

While business and other practices throughout the world differ, the company is subject in its operations worldwide to rules and regulations relating to corrupt and illegal payments, hiring practices and money laundering, as well as laws relating to doing business with certain individuals, groups and countries, such as the U.S. Foreign Corrupt Practices Act, the USA PATRIOT Act of 2001 and the U.K. Bribery Act. While the company has invested and continues to invest significant resources in training and in compliance monitoring, the geographical diversity of its operations, employees, clients and customers, as well as the vendors and other third parties that the company deals with, greatly increases the risk that the company may be found in violation of such rules or regulations and any such violation could subject it to significant penalties or adversely affect its reputation.

In addition, there have been a number of highly publicised cases around the world, involving actual or alleged fraud or other misconduct by employees in the financial services industry in recent years, and the company runs the risk that employee misconduct could occur. This misconduct may include intentional efforts to ignore or circumvent applicable policies, rules or procedures. This misconduct has included and may include in the future the theft of proprietary information, including proprietary software. It is not always possible to deter or prevent employee misconduct and the precautions taken to prevent and detect this activity have not been and may not be effective in all cases. See for example, "1Malaysia Development Berhad (1MDB)-Related Matters" in Note 26 to the financial statements.

Conflicts of Interest

A failure to appropriately identify and address potential conflicts of interest could adversely affect the company's businesses. Due to the broad scope of GS Group's businesses and client base, the company regularly addresses potential conflicts of interest, including situations where services to a particular client or GS Group's own investments or other interests conflict, or are perceived to conflict, with the interests of another client, as well as situations where one or more of its businesses have access to material non-public information that may not be shared with other businesses within GS Group and situations where it may be a creditor of an entity with which GS Group also has an advisory or other relationship.

Extensive procedures and controls are in place that are designed to identify and address conflicts of interest, including those designed to prevent the improper sharing of information among businesses. However, appropriately identifying and dealing with conflicts of interest is complex and difficult, and the company's reputation, which is one of its most important assets, could be damaged and the willingness of clients to enter into transactions with the company may be affected if it fails, or appears to fail, to identify, disclose and deal appropriately with conflicts of interest. In addition, potential or perceived conflicts could give rise to litigation or regulatory enforcement actions.

Competition

To the extent the company expands into new business areas and new geographic regions, it will face competitors with more experience and more established relationships with clients, regulators and industry participants in the relevant market, which could adversely affect its ability to expand. Governments and regulators have recently adopted regulations, imposed taxes, adopted compensation restrictions or otherwise put forward various proposals that have or may impact the company's ability to conduct certain of its businesses in a cost-effective manner or at all in certain or all jurisdictions, including proposals relating to restrictions on the type of activities in which financial institutions are permitted to engage. These or other similar rules, many of which do not apply to all the company's competitors, could impact its ability to compete effectively.

Pricing and other competitive pressures in the company's businesses have continued to increase, particularly in situations where some competitors may seek to increase market share by reducing prices. For example, in connection with investment banking and other assignments, in response to competitive pressure the company has experienced, the company has extended and priced credit at levels that may not always fully compensate it for the risks taken.

The financial services industry is highly interrelated in that a significant volume of transactions occur among a limited number of members of that industry. Many transactions are syndicated to other financial institutions and financial institutions are often counterparties in transactions. This has led to claims by other market participants and regulators that such institutions have colluded in order to manipulate markets or market prices, including allegations that antitrust laws have been violated. While the company has extensive procedures and controls that are designed to identify and prevent such activities, allegations of such activities, particularly by regulators, can have a negative reputational impact and can subject the company to large fines and settlements, and potentially significant penalties, including treble damages.

Changes in Underliers

Certain of the company's businesses and its funding may be adversely affected by changes in the reference rates, currencies, indices, baskets, exchange-traded funds (ETFs) or other financial metrics (the underlier) to which the products offered by the company or funding raised by the company are linked, in particular by changes in or the discontinuance of IBORs.

All of the company's floating rate funding pays interest by reference to rates, such as LIBOR or the U.S. Federal Reserve's Federal Funds Rate. In addition, many of the products that the company owns or that it offers, such as structured notes, warrants, swaps or security-based swaps, pay interest or determine the principal amount to be paid at maturity or in the event of default by reference to rates or by reference to another underlier. In the event that the composition of the underlier is significantly changed, by reference to rules governing such underlier or otherwise, the underlier ceases to exist (for example, in the event that LIBOR is discontinued, a country withdraws from the Euro or links its currency to or delinks its currency from another currency or benchmark, or an index or ETF sponsor materially alters the composition of an index or ETF) or the underlier ceases to be recognised as an acceptable market benchmark, the company may experience pricing volatility, loss of market share in certain products, adverse tax or accounting impacts, compliance, legal and operational costs and risks associated with client disclosures, as well as systems disruption, model disruption and other business continuity issues. In addition, uncertainty relating to IBORs could result in increased capital requirements for the company given potential low transaction volumes, a lack of liquidity or limited observability for exposures linked to IBORs or any emerging successor rates and operational incidents associated with changes in and the discontinuance of IBORs.

There is considerable uncertainty as to how the financial services industry will address the discontinuance of designated rates in contracts and financial instruments or such designated rates ceasing to be acceptable reference rates. This uncertainty could ultimately result in client disputes and litigation surrounding the proper interpretation of the company's IBOR-based contracts and financial instruments.

Further, the discontinuation of an IBOR, changes in an IBOR or changes in market acceptance of any IBOR as a reference rate may also adversely affect the yield on loans or securities held by the company, amounts paid on securities the company has issued, amounts received and paid on derivative instruments the company has entered into, the value of such loans, securities or derivative instruments, the trading market for securities, the terms of new loans being made using different or modified reference rates, the company's ability to effectively use derivative instruments to manage risk, or the availability or cost of the company's floating-rate funding and its exposure to fluctuations in interest rates.

Personnel

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

Competition from within the financial services industry and from businesses outside the financial services industry, including the technology industry, for qualified employees has often been intense. Recently, the company has experienced increased competition in hiring and retaining employees to address the demands of new regulatory requirements and the company's technology initiatives. This is also the case in emerging and growth markets, where the company is often competing for qualified employees with entities that have a significantly greater presence or more extensive experience in the region.

Changes in law or regulation in jurisdictions in which the company's operations are located that affect taxes on the company's employees' income, or the amount or composition of compensation, may also adversely affect the company's ability to hire and retain qualified employees in those jurisdictions.

The company's compensation practices are subject to review by, and the standards of, the PRA and the FCA. As a large financial institution, the company is subject to limitations on compensation practices (which may or may not affect competitors) by the PRA and the FCA and other regulators worldwide. These limitations, including any imposed by or as a result of future legislation or regulation, may require the company to alter compensation practices in ways that could adversely affect its ability to attract and retain talented employees.

Legal Liability

Substantial civil or criminal liability or significant regulatory action against the company could have material adverse financial effects or cause significant reputational harm, which in turn could seriously harm business prospects. The company faces significant legal risks in its businesses, and the volume of claims and amount of damages and penalties claimed in litigation and regulatory proceedings against financial institutions remain high. The company is, from time to time, subject to a number of other investigations and reviews by, and in some cases has received requests for documents and information from, various governmental and regulatory bodies and self-regulatory organisations relating to various aspects of the company's businesses and operations. From experience, legal claims by customers and clients increase in a market downturn and employment-related claims increase following periods of headcount reduction. Additionally, governmental entities have been and are plaintiffs in certain of the legal proceedings in which the company is involved, and it may face future civil or criminal actions or claims by the same or other governmental entities, as well as follow-on civil litigation that is often commenced after regulatory settlements.

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

The company is subject to laws and regulations worldwide, including the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act, relating to corrupt and illegal payments to, and hiring practices with regard to, government officials and others. Violations of these or similar laws and regulations could result in significant monetary penalties, severe restrictions on the company's activities and damage to its reputation.

Resolution of a criminal matter involving the company or its employees could lead to increased exposure to civil litigation, could adversely affect the company's reputation, could result in penalties or limitations on the company's ability to conduct its activities generally or in certain circumstances and could have other negative effects.

Unforeseen or Catastrophic Events

The occurrence of unforeseen or catastrophic events, including the emergence of a pandemic, or other widespread health emergency (or concerns over the possibility of such an emergency), terrorist attacks, extreme terrestrial or solar weather events or other natural disasters, could create economic and financial disruptions, and could lead to operational difficulties (including travel limitations) that could impair the company's ability to manage its businesses and result in losses.

Risk Management

Risks are inherent in the company's businesses and include liquidity, market, credit, operational, model, legal, compliance, conduct, regulatory and reputational risks. For further information about the company's risk management processes, see "Overview and Structure of Risk Management". The company's risks include the risks across its risk categories, regions or global businesses, as well as those which have uncertain outcomes and have the potential to materially impact the company's financial results, its liquidity and its reputation. For further information about the company's areas of risk, see "Liquidity Risk Management", "Market Risk Management", "Credit Risk Management", "Operational Risk Management", "Model Risk Management" and "Principal Risks and Uncertainties".

Overview and Structure of Risk Management

Overview

The company believes that effective risk management is critical to its success. Accordingly, the company 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.

The Enterprise Risk Management department, which reports to the company's chief risk officer, oversees the implementation of the company's risk governance structure and core risk management processes and is responsible for ensuring that the company's enterprise risk management framework provides the company's board of directors, the company's risk committees and senior management with a consistent and integrated approach to managing the various risks in a manner consistent with the company's risk appetite.

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

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

The company's revenue-producing units, as well as Treasury, Operations and Technology, are the first line of defence and are accountable for the outcomes of the company's risk-generating activities, as well as for assessing and managing those risks within the company's risk appetite.

The company's independent risk oversight and control functions are considered as the second line of defence and provide independent assessment, oversight and challenge of the risks taken by the first line of defence, as well as lead and participate in risk-oriented committees. Independent risk oversight and control functions include Compliance, Conflicts Resolution, Controllers, Credit Risk Management, Enterprise Risk Management, Human Capital Management, Legal, Liquidity Risk Management, Market Risk Management, Model Risk Management, Operational Risk Management and Tax.

Internal Audit is considered as the third line of defence and reports to the Audit Committee of the company's board of directors. 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 company's board of directors, senior management and regulators.

The three lines of defence structure promotes the accountability of first line risk takers, provides a framework for effective challenge by the second line and empowers independent review from the third line.

Processes. The company maintains various processes that are critical components of its risk management framework, including identifying, assessing, monitoring and limiting its risks. To effectively assess and monitor the company's risks, the company maintains a daily discipline of marking substantially all of its inventory to current market levels.

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

Structure

Oversight of risk in the company is ultimately the responsibility of the company's board of directors, who oversee risk both directly and through delegation to various committees. A series of committees within the company with specific risk management mandates covering important aspects of the company's businesses also have oversight or decision-making responsibilities. The key committees with oversight of the company's activities are described below.

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

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

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

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

GSI Asset Liability Committee. The GSI Asset and Liability Committee reviews and approves the strategic direction for the company's financial resources including capital, liquidity, funding and balance sheet. This committee has oversight responsibility for asset liability management, including interest rate and currency risk, funds transfer pricing, capital allocation and incentives, and credit ratings. This committee makes recommendations as to any adjustments to asset liability management and financial resource allocation in light of current events, risks, exposures, and regulatory requirements and approves related policies. Its membership includes senior managers from the revenue-producing divisions and independent control and support functions. The GSI Asset and Liability Committee reports to the Firmwide Asset Liability Committee and the EMC.

EMEA Culture and Conduct Risk Committee. The EMEA Culture and Conduct Risk Committee has oversight responsibility for culture and conduct risk, as well as for business standards and practices. Its membership includes senior managers from the revenue-producing divisions and independent control and support functions. The EMEA Culture and Conduct Risk Committee reports to the EMC, to GS Group's Firmwide Client and Business Standards Committee and to the company's board of directors or its committees as appropriate.

GS Group Risk Governance

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

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

Firmwide Enterprise Risk Committee. The Firmwide Enterprise Risk Committee is responsible for the ongoing review, approval and monitoring of the enterprise risk management framework and for providing oversight of GS Group's aggregate financial and non-financial risks. As a part of such oversight, the committee is responsible for the ongoing approval and monitoring of GS Group's risk limits framework at the firmwide, business and product levels. This committee is co-chaired by GS Group's chief financial officer and chief risk officer, who are appointed as chairs by GS Group's chief executive officer, and reports to GS Group's Management Committee. Its membership includes representation from the company's senior management.

Firmwide Client and Business Standards Committee. The Firmwide Client and Business Standards Committee assesses and makes determinations regarding relationships with clients, client service and experience, and related business standards and reputational risk. This committee is chaired by GS Group's president and chief operating officer, who is appointed as chair by GS Group's chief executive officer, and reports to the Management Committee. Its membership includes representation from the company's senior management.

Firmwide Asset Liability Committee. The Firmwide Asset Liability Committee reviews and approves the strategic direction for GS Group's financial resources, including capital, liquidity, funding and balance sheet. This committee has oversight responsibility for asset liability management, including interest rate and currency risk, funds transfer pricing, capital allocation and incentives, and credit ratings. This committee makes recommendations as to any adjustments to asset liability management and financial resource allocation in light of current events, risks, exposures, and regulatory requirements and approves related policies. This committee is co-chaired by GS Group's chief financial officer and global treasurer, who are appointed as chairs by GS Group's chief executive officer, and reports to the Management Committee. Its membership includes representation from the company's senior management.

Liquidity Risk Management

Overview (Audited)

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

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

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

Liquidity Risk Management Principles (Audited)

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

GCLA. GCLA is liquidity that the company maintains to meet a broad range of potential cash outflows and collateral needs in a stressed environment. A primary liquidity principle is to pre-fund its estimated potential cash and collateral needs during a liquidity crisis and hold this liquidity in the form of unencumbered, highly liquid securities and cash. The company believes that the securities held in its GCLA would be readily convertible to cash in a matter of days, through liquidation, by entering into repurchase agreements or from maturities of securities purchased under agreements to resell (resale agreements), and that this cash would allow it to meet immediate obligations without needing to sell other assets or depend on additional funding from credit-sensitive markets.

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

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

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

Contingency Funding Plan. GS Group maintains a contingency funding plan, which has a GSI-specific addendum, to provide a framework for analysing and responding to a liquidity crisis situation or periods of market stress. The contingency funding plan outlines a list of potential risk factors, key reports and metrics that are reviewed on an ongoing basis to assist in assessing the severity of, and managing through, a liquidity crisis and/or market dislocation. The contingency funding plan also describes the company's potential responses if assessments indicate that the company has entered a liquidity crisis, which includes pre-funding for what the company estimates will be its potential cash and collateral needs as well as utilising secondary sources of liquidity. Mitigants and action items to address specific risks which may arise are also described and assigned to individuals responsible for execution.

Stress Tests

In order to determine the appropriate size of the company's GCLA, an internal liquidity model is used, referred to as the Modeled Liquidity Outflow, which captures and quantifies the company's liquidity risks. Other factors are considered including, but not limited to, an assessment of potential intraday liquidity needs through an additional internal liquidity model, referred to as the Intraday Liquidity Model, the results of the company's long-term stress testing models, resolution liquidity models and other applicable regulatory requirements and a qualitative assessment of the condition of the company, as well as the financial markets. The results of the Modeled Liquidity Outflow, the Intraday Liquidity Model and the long-term stress testing models are reported to senior management on a regular basis. The company also performs stress tests that are designed to ensure a comprehensive analysis of its 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 into a single combined scenario.

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

- Severely challenged market environments, including low consumer and corporate confidence, financial and political instability, adverse changes in market values, including potential declines in equity markets and widening of credit spreads; and
- A GS Group-specific crisis potentially triggered by material losses, reputational damage, litigation, executive departure, and/or a ratings downgrade.

The following are key modelling elements of the Modeled Liquidity Outflow:

- Liquidity needs over a 30-day scenario;
- A two-notch downgrade of the long-term senior unsecured credit ratings of Group Inc. and its rated subsidiaries, including GSI;
- A combination of contractual outflows, such as upcoming maturities of unsecured debt, and contingent outflows (e.g., actions, which though not contractually required, may be deemed necessary in a crisis). The company assumes most contingent outflows will occur within the initial days and weeks of a crisis;
- No issuance of equity or unsecured debt; and
- No asset liquidation, other than the GCLA.

Intraday Liquidity Model. The company's Intraday Liquidity Model measures the company's intraday liquidity needs using a scenario analysis characterised by the same qualitative elements as the Modeled Liquidity Outflow. The model assesses the risk of increased intraday liquidity requirements during a scenario where access to sources of intraday liquidity may become constrained.

The following are key modelling elements of the Intraday Liquidity Model:

- Liquidity needs over a one-day settlement period;
- Delays in receipt of counterparty cash payments;
- A reduction in the availability of intraday credit lines at the company's third-party clearing agents; and
- Higher settlement volumes due to an increase in activity.

Long-Term Stress Testing. The company utilises longer-term stress tests to take a forward view on its liquidity position through prolonged stress periods in which the company experiences a severe liquidity stress and recovers in an environment that continues to be challenging.

The company also performs stress tests on a regular basis as part of its routine risk management processes and conducts tailored stress tests on an ad hoc or product-specific basis in response to market developments.

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

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

Model Review and Validation

The company regularly refines its Modeled Liquidity Outflow, Intraday Liquidity Model and stress testing models to reflect changes in market or economic conditions and the company's business mix. Any changes, including model assumptions, are approved by GS Group's Liquidity Risk Management function. Significant changes to these models are also approved by GS Group's Risk Governance Committee.

These models are independently reviewed, validated and approved by GS Group's Model Risk Management. See "Model Risk Management" for further information.

Limits

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

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

The company's liquidity risk limits are monitored by Treasury and GS Group's Liquidity Risk Management. Liquidity Risk Management is responsible for identifying and escalating to senior management and/or the appropriate risk committee, on a timely basis, instances where limits have been exceeded.

GCLA and Unencumbered Metrics

GCLA. Based on the results of the company's internal liquidity risk models, described above, as well as consideration of other factors, including, but not limited to, an assessment of the company's potential intraday liquidity needs and a qualitative assessment of the condition of the financial markets and the company, the company believes its liquidity position as of both November 2018 and December 2017 was appropriate. The company strictly limits its GCLA to a narrowly defined list of securities and cash because they are highly liquid, even in a difficult funding environment. The company does not include other potential sources of excess liquidity, such as less liquid unencumbered securities or committed credit facilities, in the GCLA.

The table below presents information about the company's average GCLA by asset class.

	Average for the Period Ended	
$ in millions	**November 2018**	December 2017
Overnight cash deposits	**$22,037**	$16,699
U.S. government obligations	**18,710**	20,070
U.K. government obligations	**9,938**	8,729
French government obligations	**6,760**	5,150
German government obligations	**6,678**	6,008
Japanese government obligations	**2,410**	2,259
Total	**$66,533**	$58,915

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

Other Unencumbered Assets. In addition to its GCLA, the company has a significant amount of other unencumbered cash and financial instruments, including other government obligations, high-grade money market securities, corporate obligations, marginable equities, loans and cash deposits not included in its GCLA. The fair value of the company's other unencumbered assets averaged $26.11 billion for the period ended November 2018 and $28.45 billion for the period ended December 2017.

Liquidity Regulatory Framework

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

The company is subject to a minimum LCR of 100% under the LCR rule approved by the U.K. regulatory authorities and the European Commission. The company's average monthly LCR for the trailing twelve-month period ended November 2018 exceeded the minimum requirement.

The NSFR is designed to promote medium- and long-term stable funding of the assets and off-balance-sheet activities of banking organisations over a one-year time horizon. In November 2016, the European Commission proposed amendments to the CRR to implement the NSFR for certain E.U. financial institutions. The NSFR would become effective two years after the amendments are incorporated into the CRR. The European Commission has not released a final rule.

The implementation of these rules and any amendments adopted by the regulatory authorities, could impact the company's liquidity and funding requirements and practices in the future.

Credit Ratings

The company relies on the debt capital markets to fund a portion of its day-to-day operations and the cost and availability of debt financing is influenced by its credit ratings and that of Group Inc. Credit ratings are also important when the company is competing in certain markets, such as OTC derivatives, and when it seeks to engage in longer-term transactions. See "Principal Risks and Uncertainties — Liquidity" for information about the risks associated with a reduction in the company's and/or Group Inc.'s credit ratings.

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

	As of November 2018		
	Fitch	**Moody's**	**S&P**
GSI			
Short-term debt	**F1**	**P-1**	**A-1**
Long-term debt	**A**	**A1**	**A+**
Ratings outlook	**Stable**	**Negative**	**Stable**
Group Inc.			
Short-term debt	**F1**	**P-2**	**A-2**
Long-term debt	**A**	**A3**	**BBB+**
Subordinated debt	**A-**	**Baa2**	**BBB-**
Trust preferred	**BBB-**	**Baa3**	**BB**
Preferred stock	**BB+**	**Ba1**	**BB**
Ratings outlook	**Stable**	**Stable**	**Stable**

In the table above, the ratings and outlook are by Fitch, Inc. (Fitch), Moody's Investors Service (Moody's) and Standard & Poor's Ratings Services (S&P).

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

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

	As of	
$ in millions	**November 2018**	December 2017
Additional collateral or termination payments:		
One-notch downgrade	**$ 96**	$ 134
Two-notch downgrade	**$252**	$1,370

Cash Flows

As a global financial institution, the company's cash flows are complex and bear little relation to the company's profitability and net assets. Consequently, the company believes that traditional cash flow analysis is less meaningful in evaluating its liquidity position than the liquidity and asset-liability management policies described above. Cash flow analysis may, however, be helpful in highlighting certain macro trends and strategic initiatives in the company's businesses.

The statements of cash flows are set out on page 52 of this annual report.

Period Ended November 2018. The company's cash and cash equivalents increased by $5.00 billion to $24.24 billion at the end of November 2018. The company generated $5.73 billion in net cash from operating activities. The company used $557 million in net cash for financing activities, due to payment of interest on AT1 notes and long-term subordinated loans. In addition, the company issued $2.50 billion of AT1 notes and paid a dividend of $2.50 billion during the period.

Period Ended December 2017. The company's cash and cash equivalents increased by $1.85 billion to $20.65 billion at the end of December 2017. The company generated $3.52 billion in net cash from operating activities. The company used $1.57 billion in net cash for financing activities, primarily due to the repayment of $3.58 billion of long-term subordinated loans and the payment of $3.00 billion of dividends, partially offset by the issuance of $5.80 billion of AT1 notes.

Maturity of Financial Liabilities

See Note 28 to the financial statements for a maturity analysis of the company's financial liabilities.

Market Risk Management

Overview (Audited)

Market risk is the risk of loss in the value of the company's inventory, as well as certain other financial assets and financial liabilities, due to changes in market conditions. The company employs a variety of risk measures, each described in the respective sections below, to monitor market risk. Categories of market risk include the following:

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

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

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

Market Risk Management Process (Audited)

The company's process for managing market risk includes:

- Collecting complete, accurate and timely information;
- A dynamic limit-setting framework;
- Monitoring compliance with established market risk limits and reporting the company's exposures;
- Diversifying exposures;
- Controlling position sizes;
- Evaluating mitigants, such as economic hedges in related securities or derivatives; and
- Proactive communication between the company's revenue-producing units and independent risk oversight and control functions.

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

Risk Measures (Audited)

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

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

Value-at-Risk. VaR is the potential loss in value due to adverse market movements over a defined time horizon with a specified confidence level. A one-day time horizon with a 95% confidence level is typically employed. The VaR model is a single model that captures risks including interest rates, equity prices, currency rates and commodity prices. As such, VaR facilitates comparison across portfolios of different risk characteristics. VaR also captures the diversification of aggregated risk across the company.

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

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

To comprehensively capture the company's exposures and relevant risks in the VaR calculations, historical simulations with full valuation of market factors at the position level by simultaneously shocking the relevant market factors for that position are used. These market factors include spot prices, credit spreads, funding spreads, yield curves, volatility and correlation, and are updated periodically based on changes in the composition of positions, as well as variations in market conditions. A sample from five years of historical data is taken to generate the scenarios for the VaR calculation. The historical data is weighted so that the relative importance of the data reduces over time. This gives greater importance to more recent observations and reflects current asset volatilities, which improves the accuracy of estimates of potential loss. As a result, even if positions included in VaR were unchanged, VaR would increase with increasing market volatility and vice versa.

Given its reliance on historical data, VaR is most effective in estimating risk exposures in markets in which there are no sudden fundamental changes or shifts in market conditions.

The VaR measure does not include:

- Positions that are best measured and monitored using sensitivity measures; and
- The impact of changes in counterparty and GS Group's and/or the company's credit spreads on derivatives, as well as changes in GS Group's and/or the company's credit spreads on unsecured borrowings, which are designated at fair value through profit or loss.

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

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

Stress testing is designed to ensure a comprehensive analysis of GS Group's and the company's vulnerabilities, and idiosyncratic risks combining financial and non-financial risks, including, but not limited to, market, credit, liquidity and funding, operational and compliance, strategic, systemic and emerging risks into a single combined scenario. Stress tests are primarily used to assess capital adequacy as part of the capital planning and stress testing process; however, stress testing is also integrated into the risk governance framework. This includes selecting appropriate scenarios to use for the capital planning and stress testing process.

Unlike VaR measures, which have an implied probability because they are calculated at a specified confidence level, there is generally no implied probability that GS Group's stress test scenarios will occur. Instead, stress tests are used to model both moderate and more extreme moves in underlying market factors. When estimating potential loss, it is generally assumed that positions cannot be reduced or hedged (although experience demonstrates that the company is generally able to do so).

Stress test scenarios are conducted on a regular basis as part of the routine risk management process and on an ad hoc basis in response to market events or concerns. Stress testing is an important part of the risk management process because it allows the company to quantify its exposure to tail risks, highlight potential loss concentrations, undertake risk/reward analysis, and assess and mitigate its risk positions.

Limits

Risk limits are used at various levels (including entity, business and product) to govern risk appetite by controlling the size of the company's exposures to market risk. Limits for the company are set based on VaR and on a range of stress tests relevant to the company's exposures. Limits are reviewed frequently and amended on a permanent or temporary basis to reflect changing market conditions, business conditions or tolerance for risk.

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

The purpose of the company-wide limits is to assist senior management in controlling the company's overall risk profile. Sub-limits are set below the approved level of risk limits. Sub-limits set the desired maximum amount of exposure that may be managed by any particular business on a day-to-day basis without additional levels of senior management approval, effectively leaving day-to-day decisions to individual desk managers and traders. Accordingly, sub-limits are a management tool designed to ensure appropriate escalation rather than to establish maximum risk tolerance. Sub-limits also distribute risk among various businesses in a manner that is consistent with their level of activity and client demand, taking into account the relative performance of each area.

Market risk limits are monitored by Market Risk Management, which is responsible for identifying and escalating to senior management and/or the appropriate risk committee, on a timely basis, instances where limits have been exceeded. When a risk limit has been exceeded (e.g., due to positional changes or changes in market conditions, such as increased volatilities or changes in correlations), it is escalated to senior management and the appropriate risk committee. Such instances are remediated by an inventory reduction and/or a temporary or permanent increase to the risk limit.

Model Review and Validation

The VaR and stress testing models are regularly reviewed by Market Risk Management 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 assumptions and/or models, Model Risk Management performs model validations. Significant changes to the VaR and stress testing models are reviewed with GS Group's chief risk officer and chief financial officer, and approved by firmwide Risk Governance Committee.

These models are independently reviewed, validated and approved by Model Risk Management. See "Model Risk Management" for further information.

Metrics (Audited)

The tables below present average daily VaR and period-end VaR, as well as the high and low VaR for the period. Diversification effect in the tables below represents the difference between total VaR and the sum of the VaRs for the four risk categories. This effect arises because the four market risk categories are not perfectly correlated.

The table below presents average daily VaR by risk category.

	Period Ended	
$ in millions	**November 2018**	December 2017
Interest rates	**$ 22**	$ 22
Equity prices	**20**	17
Currency rates	**10**	9
Commodity prices	**1**	2
Diversification effect	**(21)**	(22)
Total	**$ 32**	$ 28

The company's average daily VaR increased to $32 million for the period ended November 2018 from $28 million for the period ended December 2017, primarily due to an increase in the equity prices category due to increased exposures and higher levels of volatility.

The table below presents period-end VaR by risk category.

	As of	
$ in millions	**November 2018**	December 2017
Interest rates	**$ 25**	$ 20
Equity prices	**19**	16
Currency rates	**10**	8
Commodity prices	**1**	1
Diversification effect	**(24)**	(17)
Total	**$ 31**	$ 28

The company's period-end VaR increased to $31 million as of November 2018 from $28 million as of December 2017, primarily due to increases in the interest rates, equity prices and currency rates categories, partially offset by an increase in the diversification effect. The overall increase was primarily due to increased exposures and higher levels of volatility.

The table below presents high and low VaR by risk category.

	Period Ended November 2018		Period Ended December 2017	
$ in millions	**High**	**Low**	High	Low
Interest rates	**$37**	**$18**	$30	$17
Equity prices	**$33**	**$16**	$26	$13
Currency rates	**$20**	**$ 6**	$18	$ 4
Commodity prices	**$ 5**	**$ –**	$ 7	$ –

The high total VaR was $41 million for the period ended November 2018 and low total VaR was $25 million for the period ended November 2018. The high total VaR was $37 million for the period ended December 2017 and low total VaR was $23 million for the period ended December 2017.

Sensitivity Measures (Audited)

Certain portfolios and individual positions are not included in VaR because VaR is not the most appropriate risk measure for these positions.

10% Sensitivity Measures. The market risk for positions, accounted for at fair value, that are not included in VaR is determined by estimating the potential reduction in net revenues of a 10% decline in the value of these positions. The market risk of these positions was $33.2 million as of November 2018 and $21.9 million as of December 2017.

Credit Risk Management

Overview (Audited)

Credit risk represents the potential for loss due to the default or deterioration in credit quality of a counterparty (e.g., an OTC derivatives counterparty or a borrower) or an issuer of securities or other instruments the company holds. The company's exposure to credit risk comes mostly from client transactions in OTC derivatives. Credit risk also comes from cash placed with banks, securities financing transactions (i.e., resale and repurchase agreements and securities borrowing and lending activities) and debtors. In addition, the company holds other positions that give rise to credit risk (e.g., bonds held in inventory) — these credit risks are captured as a component of market risk measures, which are monitored and managed by Market Risk Management, consistent with other inventory positions.

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

Credit Risk Management Process (Audited)

The process for managing credit risk includes:

- Collecting complete, accurate and timely information;
- Approving transactions and setting and communicating credit exposure limits;
- Monitoring compliance with established credit risk limits and reporting the company's exposure;
- Assessing the likelihood that a counterparty will default on its payment obligations;
- Measuring the company's current and potential credit exposure and losses resulting from counterparty default;
- Using credit risk mitigants, including collateral and hedging;
- Maximising recovery through active workout and restructuring of claims; and
- Proactive communication between the company's revenue-producing units and independent risk oversight and control functions.

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

The global credit risk management systems capture credit exposure to individual counterparties and on an aggregate basis to counterparties and their subsidiaries (economic groups). These systems also provide management with comprehensive information about aggregate credit risk by product, internal credit rating, industry, country and region.

Risk Measures and Limits

Credit risk is measured based on the potential loss in the event of non-payment by a counterparty using current and potential exposure. For derivatives and securities financing transactions, current exposure represents the amount presently owed to the company after taking into account applicable netting and collateral arrangements, while potential exposure represents the company's estimate of the future exposure that could arise over the life of a transaction based on market movements within a specified confidence level. Potential exposure also takes into account netting and collateral arrangements.

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

Credit limits are used at various levels (e.g., counterparty, economic group, industry and country) to control the size and nature of the company's credit exposures and are reviewed regularly and revised to reflect changing risk appetites for a given counterparty or group of counterparties.

The company's credit risk limits are monitored by Credit Risk Management, which is responsible for identifying and escalating, on a timely basis, instances where limits have been exceeded. When a risk limit has been exceeded, it is escalated to senior management and/or the appropriate risk committee.

Stress Tests

Regular stress tests are used to calculate the credit exposures, including potential concentrations that would result from applying shocks to counterparty credit ratings or credit risk factors (e.g., currency rates, interest rates, equity prices). These shocks include a wide range of moderate and more extreme market movements. Some of the stress tests include shocks to multiple risk factors, consistent with the occurrence of a severe market or economic event. Unlike potential exposure, which is calculated within a specified confidence level, with a stress test there is generally no assumed probability of these events occurring.

Stress tests are performed on a regular basis as part of the company's routine risk management processes and the company conducts tailored stress tests on an ad hoc basis in response to market developments. The company also performs stress tests that are designed to ensure a comprehensive analysis of its 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 into a single combined scenario.

Model Review and Validation

The company's potential credit exposure and stress testing models, and any changes to such models or assumptions, are independently reviewed, validated and approved by Model Risk Management. See "Model Risk Management" for further information.

Risk Mitigants

To reduce credit exposures on derivatives and securities financing transactions, the company may enter into netting agreements with counterparties that permit it to offset receivables and payables with such counterparties. The company may also reduce credit risk with counterparties by entering into agreements that enable it to obtain collateral from them on an upfront or contingent basis and/or to terminate transactions if the counterparty's credit rating falls below a specified level. The company monitors the fair value of the collateral to ensure that credit exposures are appropriately collateralised. The company seeks to minimise exposures where there is a significant positive correlation between the creditworthiness of counterparties and the market value of collateral received.

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

Credit Exposures (Audited)

The company's credit exposures are described further below.

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

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

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

Cash at Bank and in Hand. Cash at bank and in hand include both interest-bearing and non-interest-bearing deposits. To mitigate the risk of credit loss, the company places substantially all of its deposits with highly-rated banks and central banks.

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

The table below presents a summary of the gross credit exposure and net credit exposure by financial asset class.

$ in millions	Financial instruments owned	Collateralised agreements	Debtors	Cash at bank and in hand	Total
As of November 2018					
Gross credit exposure	**$ 594,129**	**$ 203,334**	**$ 64,487**	**$24,396**	**$ 886,346**
Assets captured by market risk	**(76,093)**	**–**	**–**	**–**	**(76,093)**
Counterparty netting	**(449,860)**	**(83,336)**	**(5,450)**	**–**	**(538,646)**
Cash collateral	**(35,148)**	**–**	**(32,439)**	**–**	**(67,587)**
Security collateral received	**(14,459)**	**(116,837)**	**(7,415)**	**–**	**(138,711)**
Net credit exposure	**$ 18,569**	**$ 3,161**	**$ 19,183**	**$24,396**	**$ 65,309**
As of December 2017					
Gross credit exposure	$ 640,264	$ 204,820	$ 73,378	$20,727	$ 939,189
Assets captured by market risk	(70,293)	–	–	–	(70,293)
Counterparty netting	(497,178)	(83,213)	(5,803)	–	(586,194)
Cash collateral	(37,649)	–	(36,896)	–	(74,545)
Security collateral received	(14,723)	(117,782)	(7,673)	–	(140,178)
Net credit exposure	$ 20,421	$ 3,825	$ 23,006	$20,727	$ 67,979

The tables below present the gross credit exposure and net credit exposure by the company's internally determined public rating agency equivalents.

	Investment-Grade				
$ in millions	AAA	AA	A	BBB	Total
As of November 2018					
Gross credit exposure	**$28,353**	**$ 78,956**	**$ 561,437**	**$ 93,348**	**$ 762,094**
Counterparty netting	**(2,630)**	**(33,438)**	**(439,612)**	**(46,514)**	**(522,194)**
Cash collateral	**(6,305)**	**(10,846)**	**(25,695)**	**(16,733)**	**(59,579)**
Security collateral received	**(746)**	**(22,588)**	**(78,793)**	**(20,294)**	**(122,421)**
Net credit exposure	**$18,672**	**$ 12,084**	**$ 17,337**	**$ 9,807**	**$ 57,900**
As of December 2017					
Gross credit exposure	$19,282	$111,588	$ 601,039	$ 90,579	$ 822,488
Counterparty netting	(1,864)	(44,356)	(479,051)	(47,942)	(573,213)
Cash collateral	(2,535)	(16,676)	(30,177)	(17,230)	(66,618)
Security collateral received	(1,025)	(32,436)	(74,149)	(15,764)	(123,374)
Net credit exposure	$13,858	$ 18,120	$ 17,662	$ 9,643	$ 59,283

	Non-Investment-Grade / Unrated		
$ in millions	BB or lower	Unrated	Total
As of November 2018			
Gross credit exposure	**$ 46,412**	**$ 77,840**	**$124,252**
Assets captured by market risk	**–**	**(76,093)**	**(76,093)**
Counterparty netting	**(16,423)**	**(29)**	**(16,452)**
Cash collateral	**(7,993)**	**(15)**	**(8,008)**
Security collateral received	**(16,158)**	**(132)**	**(16,290)**
Net credit exposure	**$ 5,838**	**$ 1,571**	**$ 7,409**
As of December 2017			
Gross credit exposure	$ 43,729	$ 72,972	$116,701
Assets captured by market risk	–	(70,293)	(70,293)
Counterparty netting	(12,920)	(61)	(12,981)
Cash collateral	(7,895)	(32)	(7,927)
Security collateral received	(16,532)	(272)	(16,804)
Net credit exposure	$ 6,382	$ 2,314	$ 8,696

In the table above, the unrated net credit exposure of $1.57 billion as of November 2018 and $2.31 billion as of December 2017 relates to financial assets for which the company has not assigned an internally determined public rating agency equivalent.

In addition to credit risk on financial assets, the company also has credit exposure in respect of contingent and forward starting collateralised agreements. The company's gross credit exposure related to these activities is $60.53 billion as of November 2018 and $58.76 billion as of December 2017. However, this will be mitigated by collateral of approximately $60.06 billion as of November 2018 and $58.39 billion as of December 2017 if these commitments are fulfilled. As a result, the company's net credit exposure to these commitments was $473 million as of November 2018 and $368 million as of December 2017.

Impairment (Audited)

From January 1, 2018, the company has adopted IFRS 9 'Financial Instruments' and assesses on a forward-looking basis the expected credit losses (ECL) associated with financial assets measured at amortised cost. The company's impairment model is based on changes in credit quality since initial recognition of the relevant assets and incorporates three stages. See "Note 2. Summary of Significant Accounting Policies — Accounting Policies — Financial Assets and Financial Liabilities — Impairment" for further information about the company's impairment methodology.

As of November 2018, the company's financial assets measured at amortised cost were $144.66 billion, which are all classified within stage 1 of the company's impairment model, namely, they were not credit impaired on initial recognition and there has been no significant increase in credit risk since initial recognition. The expected credit losses on these financial instruments were not material as of November 2018. There have been no significant changes in estimation techniques or significant assumptions made during the reporting period.

As of December 2017, the company applied the impairment requirements of IAS 39 'Financial Instruments: Recognition and Measurement'. As of December 2017, financial assets past due or impaired were not material.

Credit Concentrations (Audited)

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

The company measures and monitors its credit exposure based on amounts owed to the company after taking into account risk mitigants that management considers when determining credit risk. Such risk mitigants include netting and collateral arrangements and economic hedges, such as credit derivatives, futures and forward contracts. Netting and collateral agreements permit the company to offset receivables and payables with such counterparties and/or enable the company to obtain collateral on an upfront or contingent basis.

The table below presents the net credit exposure by industry and region.

	As of	
$ in millions	**November 2018**	December 2017
Credit Exposure by Industry		
Funds	**$ 8,038**	$ 8,823
Financial Institutions	**25,703**	30,424
Sovereign	**26,033**	22,623
Natural Resources & Utilities	**1,883**	1,675
Diversified Industrials	**1,230**	986
Other (including Special Purpose Vehicles)	**2,422**	3,448
Total	**$65,309**	$67,979
Credit Exposure by Region		
EMEA	**$43,486**	$46,283
Americas	**14,407**	15,258
Asia	**7,416**	6,438
Total	**$65,309**	$67,979

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

Operational Risk Management

Overview (Audited)

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

The company's framework for managing operational risk is fully integrated in GS Group's comprehensive control framework designed to provide a well-controlled environment to minimise operational risks. In the company, the EMEA Operational Risk Committee provides oversight of the ongoing development and implementation of operational risk policies, framework and methodologies, with oversight from the directors of the company, and monitors the effectiveness of operational risk management.

Operational Risk Management, which is independent of revenue-producing units, and reports to GS Group's chief risk officer, has primary responsibility for developing and implementing a formalised framework for assessing, monitoring and managing operational risk with the goal of maintaining the company's exposure to operational risk at levels that are within its risk appetite.

Operational Risk Management Process (Audited)

The company's process for managing operational risk includes:

- Collecting complete, accurate and timely information;
- Training, supervision and development of people;
- Active participation of senior management in identifying and mitigating key operational risks;
- Independent risk oversight and control functions that monitor operational risk, and implementation of policies and procedures, and controls designed to prevent the occurrence of operational risk events; and
- Proactive communication between revenue-producing units and independent risk oversight and control functions.

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

The operational risk management framework is in part designed to comply with the operational risk measurement rules under Basel III and has evolved based on the changing needs of the company's businesses and regulatory guidance. The operational risk management framework consists of risk identification and assessment, risk measurement and risk monitoring and reporting.

Risk Identification and Assessment

The core of the operational risk management framework is risk identification and assessment. A comprehensive data collection process is in place, including policies and procedures, for operational risk events.

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

Operational risk management applications are used to capture and organise operational risk event data and key metrics. One of the company's key risk identification and assessment tools is an operational risk and control self-assessment process, which is performed by the company's managers. This process consists of the identification and rating of operational risks, on a forward-looking basis, and the related controls. The results from this process are analysed to evaluate operational risk exposures and identify businesses, activities or products with heightened levels of operational risk.

Risk Measurement

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

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

Stress Tests

The company performs stress tests on a regular basis as part of its routine risk management processes. The company also performs stress tests that are designed to ensure a comprehensive analysis of its vulnerabilities and idiosyncratic risks combining financial and nonfinancial risks, including, but not limited to, credit, market, liquidity and funding, operational and compliance, strategic, systemic and emerging risks into a single combined scenario.

Risk Monitoring and Reporting

Changes in the operational risk profile of the company, including changes in business mix or jurisdictions in which the company operates, are evaluated by monitoring the factors noted above at the company level. The company has both preventive and detective internal controls, which are designed to reduce the frequency and severity of operational risk losses and the probability of operational risk events. The company monitors the results of assessments and independent internal audits of these internal controls.

The company has established thresholds to monitor the impact of an operational risk event, including single loss events, as well as escalation protocols which are monitored by Operational Risk Management. Operational Risk Management is responsible for identifying and escalating to senior management and/or the appropriate risk committee, on a timely basis, instances where thresholds have been exceeded.

Model Review and Validation

The statistical models utilised by Operational Risk Management are independently reviewed, validated and approved by Model Risk Management. See “Model Risk Management” for further information.

Model Risk Management

Overview (Audited)

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

The company’s framework for managing model risk is consistent with and part of GS Group’s framework. GS Group’s model risk management framework is managed through a governance structure and risk management controls, which encompass standards designed to ensure it maintains a comprehensive model inventory, including risk assessment and classification, sound model development practices, independent review and model-specific usage controls. GS Group’s Firmwide Model Risk Control Committee oversees the model risk management framework. GS Group’s Model Risk Management, which is independent of the revenue-producing units, model developers, model owners and model users, and reports to GS Group’s chief risk officer, has primary responsibility for assessing, monitoring and managing GS Group’s model risk through oversight across GS Group’s global businesses, and provides periodic updates to senior management, risk committees and GS Group’s Risk Committee of the Board.

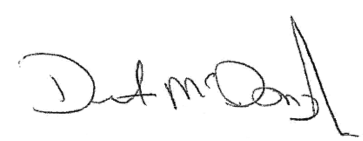
Model Review and Validation Process

GS Group’s Model Risk Management consists of quantitative professionals who perform an independent review, validation and approval of the models. This review includes an analysis of the model documentation, independent testing, an assessment of the appropriateness of the methodology used, and verification of compliance with model development and implementation standards. GS Group’s Model Risk Management reviews all existing models on an annual basis, and approves new models or significant changes to models prior to implementation. The model validation process incorporates a review of models and trade and risk parameters across a broad range of scenarios (including extreme conditions) in order to critically evaluate and verify the model’s conceptual soundness, suitability of calculation techniques, accuracy and sensitivity to input parameters and assumptions, as well as the scope of testing performed by the model developers.

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

Date of Authorisation of Issue

The strategic report was authorised for issue by the Board of Directors on March 15, 2019.



By order of the board
D. W. McDonogh
Director
March 20, 2019

Directors' Report

The directors present their report and the audited financial statements for the period ended November 2018.

Introduction

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

Dividends

The directors declared and paid an interim dividend of $2.50 billion on November 30, 2018.

The directors declared and paid an interim dividend of $500 million on June 27, 2017 and $2.50 billion on June 28, 2017.

Exchange Rate

The British pound/U.S. dollar exchange rate was £/$1.2743 as of November 2018 and £/$1.3524 as of December 2017. The average rate for the periods was £/$1.3347 for November 2018 and £/$1.3020 for December 2017.

Employment of Disabled Persons

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

Charitable Contributions

The company made donations to charity of $22 million for the period ended November 2018 and $25 million for the period ended December 2017. This included donations of $20 million for the period ended November 2018 and $22 million for the period ended December 2017 to Goldman Sachs Gives (UK), a registered charity, for general charitable purposes in England and Wales.

Employee Involvement

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

Post Balance Sheet Events

On January 21, 2019, the company allotted 7,643,885 ordinary shares of $1 each at $44.48 to Goldman Sachs Group UK Limited. The total consideration received was $340,000,000 in cash incorporating a share premium of $332,356,115.

Statement on Corporate Governance with Reference to Internal Control over Financial Reporting

Management of the company is responsible for establishing and maintaining adequate internal control over financial reporting. The company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the company's financial statements for external reporting purposes in accordance with U.K. GAAP.

The company's internal control over financial reporting includes policies and procedures that pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of assets; provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.K. GAAP, and that receipts and expenditures are being made only in accordance with authorisations of management and the directors of the company; and provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use or disposition of the company's assets that could have a material effect on the company's financial statements.

Disclosure of Information to Auditors

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

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

Independent Auditors

Prior to 1 October 2007, the company passed an elective resolution under section 386 of the Companies Act 1985 to dispense with the annual reappointment of auditors. PricewaterhouseCoopers LLP will, accordingly, continue in office as auditors of the company pursuant to section 487(2) of the Companies Act 2006 and paragraph 44 of Schedule 3 to the Companies Act 2006 (Commencement No. 3 Consequential Amendment, Transitional Provisions and Savings) Order 2007.

The GSI Board Audit Committee is currently in the process of appointing a new statutory auditor for financial periods commencing after June 17, 2020 to meet the requirements of the Statutory Audits and Third Country Auditors Regulations 2016.

Directors' Report

Statement of Directors' Responsibilities

The directors are responsible for preparing the strategic report, the directors' report and the financial statements in accordance with applicable law and regulations. Company law requires the directors to prepare accounts for each financial period which give a true and fair view of the state of affairs of the company as at the end of the financial period and of the profit or loss of the company for that period. In preparing those accounts, the directors are required to:

- Select suitable accounting policies and then apply them consistently;
- Make judgements and estimates that are reasonable and prudent;
- State whether applicable accounting standards have been followed subject to any material departures disclosed and explained in the financial statements; and
- Prepare the accounts on the going concern basis unless it is inappropriate to presume that the company will continue in business.

The directors are responsible for keeping adequate accounting records which disclose with reasonable accuracy at any time the financial position of the company and to enable them to ensure that the accounts comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the company and, hence, for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The directors are responsible for the maintenance and integrity of the company's financial statements on the Goldman Sachs website. Legislation in the U.K. governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

The directors confirm to the best of their knowledge:

- The financial statements, prepared in accordance with applicable set of accounting standards, give a true and fair view of the assets, liabilities, financial position and profit or loss of the company; and
- The strategic report includes a fair review of the development and performance of the business and the position of the company, together with a description of the principal risks and uncertainties that the company faces.

Directors

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

Name
J. M. D. Barroso, Chairman
S. A. Boyle (appointed on July 20, 2018)
C. Cripps (appointment proposed on March 15, 2019, subject to regulatory notification)
I. Ealet (resigned on June 20, 2018)
R. J. Gnodde, Chief executive officer
Lord Grabiner QC
N. Harman
S. S. Kilsby (resigned on December 31, 2018)
D. W. McDonogh
T. L. Miller OBE (appointed on July 31, 2018)
K. Pantazopoulos (appointed on July 31, 2018; resigned on November 15, 2018)
E. E. Stecher (appointed on July 31, 2018)
M. O. Winkelman

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

Date of Authorisation of Issue

The financial statements were authorised for issue by the Board of Directors on March 15, 2019.

By order of the board
D. W. McDonogh
Director
March 20, 2019

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

Report on the audit of the financial statements

Opinion

In our opinion, Goldman Sachs International's ("the company") financial statements:

- give a true and fair view of the state of the company's affairs as of November 30, 2018 and of its profit and cash flows for the eleven month period (the "period") then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law); and
- have been prepared in accordance with the requirements of the Companies Act 2006 ("CA06").

We have audited the financial statements, included within the Annual Report, which comprise: the Balance Sheet as of November 30, 2018; the Profit and Loss Account, the Statements of Comprehensive Income, the Statements of Cash Flows, the Statements of Changes in Equity for the period then ended; and the Notes to the Financial Statements, which include a description of the significant accounting policies and other explanatory information.

Certain required disclosures have been presented in the Strategic Report in the Annual Report rather than in the Notes to the Financial Statements. The disclosures identified as audited within the Strategic Report form an integral part of the financial statements.

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

Basis for opinion

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

Independence

We remained independent of the company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the U.K., which includes the Financial Reporting Council's ("FRC") Ethical Standard as applicable to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

To the best of our knowledge and belief, we declare that non-audit services prohibited by the FRC's Ethical Standard were not provided to the company.

Other than those disclosed in Note 6 'Administrative Expenses' to the financial statements, we have provided no other non-audit services to the company in the period from January 1, 2018 to November 30, 2018.

Our audit approach

Overview

- Overall materiality: $183 million (2017: $180 million), based on 0.5% of total regulatory capital resources.
- Audit scope: We perform a full scope audit of the financial statements of the company as a whole as a single component. The scope of the audit and the nature, timing and extent of audit procedures were determined by our risk assessment, the financial significance of financial statement line items and qualitative factors (including history of misstatement through fraud or error).
- Key audit matters: The key area of focus which was of the most significance in the audit was the valuation of derivative financial instruments, specifically those which are included within level 3 in the fair value hierarchy.
- We discussed our plan with the GSI Board Audit Committee in July 2018 and November 2018. The valuation of level 3 derivatives was the key audit matter for discussion at the conclusion of the audit.

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we looked at where the directors made subjective judgements, for example in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain.

Capability of the audit in detecting irregularities, including fraud

Based on our understanding of the banking industry and regulatory environment, we identified that the principal risks of non-compliance with laws and regulations related to rules of the Prudential Regulation Authority ("PRA") and the Financial Conduct Authority ("FCA"), and we considered the extent to which non-compliance might have a material effect on the financial statements. We also considered those laws and regulations that have a direct impact on the financial statements such as the CA06.

We evaluated management's incentives and opportunities for fraudulent manipulation of the financial statements (including the risk of override of controls) and determined that the principal risks were related to the posting of inappropriate journal entries and management bias through the manipulation of the valuation of financial instruments held at fair value.

The engagement team shared this risk assessment with PwC network firms supporting the audit and designed audit procedures to address these risks. Audit procedures performed included:

- Discussing with management and those charged with governance in relation to known or suspected instances of non-compliance with laws and regulation and fraud;
- Evaluating and testing of the operating effectiveness of management's controls designed to prevent and detect fraud in financial reporting;
- Assessing matters reported on the company's whistleblowing helpline and the results of management's investigation of such matters;
- Reviewing key correspondence with regulatory authorities (the PRA and the FCA) in relation to compliance and regulatory proceedings;
- Identifying and testing journal entries, in particular identifying any journal entries posted by senior management; and
- Challenging assumptions and judgements made by management in relation to the fair value measurement of financial instruments. Our procedures included testing the effectiveness of management's controls over the fair value of financial instruments and performing an independent valuation of a sample of instruments at the period end. Audit procedures performed in relation to level 3 derivative financial instruments held at fair value can be found in the Key Audit Matter below.

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

Key audit matters

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

Key audit matter	*How our audit addressed the key audit matter*
Valuation of derivative financial instruments held at fair value ***Refer to Note 28 'Financial Assets and Financial Liabilities' in the financial statements.*** In accordance with the accounting policies set out in Note 2 'Summary of Significant Accounting Policies' to the financial statements, derivative financial instruments are recorded in the balance sheet at fair value and changes in fair value are recorded in net revenues. The valuations of derivative financial instruments are produced by financial models using a variety of inputs. Most of the company's derivatives are traded in active markets and external observable inputs are available to support management's valuations. Such derivatives are classified as level 2 in the valuation hierarchy (see Note 28). The company also enters into complex and less liquid derivative financial instruments where a limited or no active market exists. In these instances, there is less observable evidence to support the valuations and hence there is greater estimation uncertainty. When one or more valuation inputs are unobservable and significant, the financial instrument is classified as level 3 in the valuation hierarchy. Total derivative financial assets and derivative financial liabilities were $512.56 billion and $498.39 billion, respectively, as of November 30, 2018, of which level 3 derivative financial assets and derivative financial liabilities were $4.23 billion and $2.37 billion, respectively. We performed a risk assessment of the derivative financial instruments held by the company using our industry experience and knowledge of the company's business. We used this analysis to identify areas of significant management judgement and focus our testing. We concluded that the higher assessed risks of material misstatement relate to the valuation of certain credit and equity derivative financial instruments classified as level 3. This key audit matter relates to the valuation of such derivative financial instruments. Within credit derivatives, this included the valuation of a portfolio of financial instruments sensitive to secured funding spreads, the methodology for which involves a key judgement, and within equity derivatives, a portfolio of instruments sensitive to correlations which are unobservable.	We understood and evaluated the design and tested the operational effectiveness of key controls over the valuation of financial instruments. These controls included: • Validation of new and existing models by a specialist team within the risk function, as well as access and change management controls in respect of models in use. • The monthly price verification process performed by the Controller's function using prices and model valuation inputs sourced from third parties. • Calculation and approval of key valuation adjustments. We noted no significant exceptions in the design or operating effectiveness of these controls and we determined we could rely on these controls for the purposes of our audit. In addition, we performed the substantive testing described below. We utilised internal valuation experts to independently revalue a sample of level 3 derivative financial instruments. In each case, we used independent models. We valued a sample of credit derivatives and evaluated management's methodology for determining secured funding spreads. We also tested the valuation inputs to external sources. Additionally, we valued a sample of equity derivatives and, to the extent available, independently sourced inputs such as correlation. For samples where we utilised management's inputs to revalue the instrument, we assessed the reasonableness of the inputs used. We evaluated the methodology and underlying assumptions used to determine valuation adjustments. We tested a sample of valuation adjustments at the period end. Based on the work performed, we found management's judgements in relation to the valuation of derivative financial instruments to be supported by the evidence obtained. We performed testing to validate that management had allocated derivative financial instruments to the appropriate level within the fair value hierarchy in line with the established policy, and that the policy classifications were appropriate. We read and assessed the disclosures in Note 28 'Financial Assets and Financial Liabilities' regarding significant unobservable inputs and the fair value hierarchy and found them to be appropriate.

How we tailored the audit scope

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

The company provides a wide range of financial services to clients located worldwide. The company also operates a number of branches and representative offices across Europe, the Middle East and Africa (EMEA) to provide financial services to clients in those regions. We consider that the company is a single audit component.

Traders based in overseas locations enter into transactions on behalf of the company. In these circumstances, certain internal controls relevant to financial reporting operate in those locations. In addition, there are a number of centralised functions operated by the ultimate parent company, The Goldman Sachs Group, Inc., in the U.S. or in group shared service centres in other locations which are relevant to the audit of the company. We determined the scope of the work required in each of these locations and we issued instructions to PwC network firms. We interacted regularly with the firms responsible for the work throughout the course of the audit. This included reviewing key working papers and discussing the results of work in higher risk areas of the audit. We concluded that the procedures performed on our behalf were sufficient for the purposes of issuing our opinion.

Materiality

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

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

Overall materiality	$183 million (2017: $180 million).
How we determined it	0.5% of total regulatory capital resources (2017: 0.5%) as set out on page 11 of the Annual Report.
Rationale for benchmark applied	The immediate and ultimate parent companies, management and the company's regulators are the primary users of the financial statements. The level of total regulatory capital resources is a key focus of these users.

We agreed with the GSI Board Audit Committee that we would report to them misstatements identified during our audit above $9 million (2017: $9 million) as well as misstatements below that amount that, in our view, warranted reporting for qualitative reasons.

Conclusions relating to going concern

ISAs (UK) require us to report to you when:

- the directors' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the directors have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

We have nothing to report in respect of the above matters.

However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the company's ability to continue as a going concern. For example, the terms on which the United Kingdom may withdraw from the European Union, which is currently due to occur on March 29, 2019 are not clear, and it is difficult to evaluate all of the potential implications on the company's operations, customers, suppliers and the wider economy.

Reporting on other information

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

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

With respect to the Strategic Report and Directors' Report, we also considered whether the disclosures required by the CA06 have been included.

Based on the responsibilities described above and our work undertaken in the course of the audit, the CA06 and ISAs (UK) require us also to report certain opinions and matters as described below (required by ISAs (UK) unless otherwise stated).

Strategic Report and Directors' Report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic Report and Directors' Report for the period ended November 30, 2018 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements (CA06).

In light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic Report and Directors' Report (CA06).

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Statement of Directors' Responsibilities set out on page 43, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal controls as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

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

Auditors' responsibilities for the audit of the financial statements

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

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

Use of this report

This report, including the opinions, has been prepared for and only for the company's member as a body in accordance with Chapter 3 of Part 16 of the CA06 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Other required reporting

Companies Act 2006 exception reporting

Under the CA06 we are required to report to you if, in our opinion:

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

We have no exceptions to report arising from this responsibility.

Appointment

We were appointed by the directors on September 22, 1988 to audit the financial statements for the period ended November 24, 1989 and subsequent financial periods. The period of total uninterrupted engagement is 30 years, covering the periods ended November 24, 1989 to November 30, 2018.

Jonathan Holloway (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London
March 20, 2019

Profit and Loss Account

		Period Ended	
		November	December
$ in millions	**Note**	**2018**	2017
Net revenues	4, 5	**$ 7,866**	$ 6,508
Administrative expenses	6	**(4,607)**	(4,119)
Operating profit		**3,259**	2,389
Interest payable and similar expenses	9	**(237)**	(301)
Net finance income	10	**8**	3
Profit before taxation		**3,030**	2,091
Tax on profit	12	**(832)**	(534)
Profit for the financial period		**$ 2,198**	$ 1,557

Net revenues and operating profit of the company are derived from continuing operations in the current and prior periods.

Statements of Comprehensive Income

		Period Ended	
		November	December
$ in millions	**Note**	**2018**	2017
Profit for the financial period		**$ 2,198**	$ 1,557
Other comprehensive income			
Items that will not be reclassified subsequently to profit or loss			
Actuarial profit relating to the pension scheme	10	**61**	198
Debt valuation adjustment	19	**465**	(259)
U.K. deferred tax attributable to the components of other comprehensive income	17	**(137)**	16
U.K. current tax attributable to the components of other comprehensive income		**1**	2
Other comprehensive income/(loss) for the financial period, net of tax		**390**	(43)
Total comprehensive income for the financial period		**$ 2,588**	$ 1,514

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

Balance Sheet

		As of	
$ in millions	**Note**	**November 2018**	December 2017
Fixed assets	13	**$ 315**	$ 210
Current assets			
Financial instruments owned (includes **$20,550** and $24,178 pledged as collateral)	14	**594,129**	640,264
Collateralised agreements	15	**203,334**	204,820
Debtors	16	**64,793**	74,052
Cash at bank and in hand	24	**24,396**	20,727
		886,652	939,863
Creditors: amounts falling due within one year			
Financial instruments sold, but not yet purchased	14	**(545,987)**	(589,922)
Collateralised financings	18	**(141,840)**	(158,069)
Other creditors	19	**(97,151)**	(103,584)
		(784,978)	(851,575)
Net current assets		**101,674**	88,288
Total assets less current liabilities		**101,989**	88,498
Creditors: amounts falling due after more than one year			
Collateralised financings	18	**(10,305)**	(17,378)
Other creditors	19	**(58,095)**	(39,730)
		(68,400)	(57,108)
Provisions for liabilities	20	**(78)**	(10)
Net assets excluding pension surplus		**33,511**	31,380
Pension surplus	10	**406**	321
Net assets including pension surplus		**$ 33,917**	$ 31,701
Capital and reserves			
Called up share capital	21	**$ 582**	$ 582
Share premium account		**4,864**	4,864
Capital reserve (non-distributable)		**–**	17
Profit and loss account		**20,070**	20,727
Accumulated other comprehensive income		**101**	(289)
Other equity instruments	22	**8,300**	5,800
Total shareholder's funds		**$ 33,917**	$ 31,701

The financial statements were approved by the Board of Directors on March 15, 2019 and signed on its behalf by:

D. W. McDonogh
Director

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

Statements of Changes in Equity

		Period Ended	
		November	December
$ in millions	**Note**	**2018**	2017
Called up share capital			
Beginning balance		**$ 582**	$ 582
Shares issued		**17**	–
Shares cancelled		**(17)**	–
Ending balance		**582**	582
Share premium account			
Beginning balance		**4,864**	4,864
Ending balance		**4,864**	4,864
Capital reserve (non-distributable)			
Beginning balance		**17**	17
Subscription for shares		**(17)**	–
Ending balance		**–**	17
Profit and loss account			
Beginning balance		**20,727**	22,316
Cumulative effect on retained earnings due to adoption of IFRS 15, net of tax	2	**(5)**	–
Profit for the financial period		**2,198**	1,557
Cancellation of shares		**17**	–
Interim dividends paid	23	**(2,500)**	(3,000)
Interest on Additional Tier 1 notes, net of tax	22	**(367)**	(146)
Share-based payments		**405**	405
Management recharge related to share-based payments		**(405)**	(405)
Ending balance		**20,070**	20,727
Accumulated other comprehensive income			
Beginning balance		**(289)**	(246)
Other comprehensive income/(loss)		**390**	(43)
Ending balance		**101**	(289)
Other equity instruments			
Beginning balance		**5,800**	–
Additional Tier 1 notes issued	22	**2,500**	5,800
Ending balance		**8,300**	5,800
Total shareholder's funds		**$33,917**	$31,701

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

Statements of Cash Flows

		Period Ended	
		November	December
$ in millions	**Note**	**2018**	2017
Cash flows from operating activities			
Cash generated from operations	25	**$ 5,980**	$ 3,928
Taxation received		**1**	1
Taxation paid		**(252)**	(406)
Net cash from operating activities		**5,729**	3,523
Cash flows from investing activities			
Capital expenditure for fixed assets		**(172)**	(109)
Net cash used in investing activities		**(172)**	(109)
Cash flows from financing activities			
Receipts from issuing Additional Tier 1 notes	22	**2,500**	5,800
Interim dividends paid	23	**(2,500)**	(3,000)
Repayment of long-term subordinated loans		**–**	(3,581)
Interest paid on Additional Tier 1 notes	22	**(503)**	(201)
Interest paid on long-term subordinated loans	19	**(54)**	(587)
Net cash used in financing activities		**(557)**	(1,569)
Net increase in cash and cash equivalents		**5,000**	1,845
Cash and cash equivalents, beginning balance		**20,654**	16,881
Foreign exchange gains/(losses) on cash and cash equivalents		**(1,411)**	1,928
Cash and cash equivalents, ending balance	24	**$24,243**	$20,654

Non-cash activities during the period ended November 2018:

- The company allotted 17.3 million ordinary shares of $1 each to Goldman Sachs Group UK Limited and subsequently cancelled 17.3 million ordinary shares. Both transactions were for nil consideration. See Note 21 for further information.

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

Note 1.

General Information

The company is a private unlimited company and is incorporated and domiciled in England and Wales. The address of its registered office is Peterborough Court, 133 Fleet Street, London, EC4A 2BB, United Kingdom.

The company's immediate parent undertaking and the parent company of the smallest group for which consolidated financial statements are prepared is Goldman Sachs Group UK Limited (GSG UK), a company incorporated and domiciled in England and Wales. Copies of its consolidated financial statements are available on request from the Company Secretary, GSG UK, Peterborough Court, 133 Fleet Street, London EC4A 2BB, United Kingdom. GSG UK together with its consolidated subsidiaries forms "GSG UK Group".

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

Basel III Pillar 3 Disclosures

The company is included in the consolidated Pillar 3 disclosures of GSG UK, as required by the CRR. GSG UK's November 2018 Pillar 3 disclosures will be made available in conjunction with the publication of its consolidated financial information at www.goldmansachs.com/disclosures.

Country-by-Country Reporting

The company is included in the consolidated country-by-country reporting disclosures of GSG UK, as required by the Capital Requirements (Country-by-Country Reporting) Regulations 2013. GSG UK's November 2018 Country-by-Country Reporting will be made available by December 31, 2019 at www.goldmansachs.com/disclosures.

Note 2.

Summary of Significant Accounting Policies

Basis of Preparation

The company prepares financial statements under U.K. GAAP. These financial statements have been prepared in accordance with FRS 101 'Reduced Disclosure Framework' (FRS 101).

These financial statements have been prepared on the going concern basis, under the historical cost convention (modified as explained in "Pension Arrangements" and "Financial Assets and Financial Liabilities" below), and in accordance with the Companies Act 2006.

During the period, the company changed its accounting reference date from December 31 to November 30 to conform to the period used by the company for U.S. tax reporting purposes. As such, these financial statements have been prepared for the eleven months ended November 30, 2018, with comparative information being presented for the twelve months ended December 31, 2017. As a result, amounts presented in this annual report are not directly comparable.

The following exemptions from the disclosure requirements of International Financial Reporting Standards (IFRS) as adopted by the E.U. have been applied in the preparation of these financial statements in accordance with FRS 101:

- IFRS 2 'Share-based Payment' paragraph 45(b) and 46 to 52. These disclosures are provided in the consolidated financial statements of Group Inc.;
- IFRS 15 'Revenue from Contracts with Customers' second sentence of paragraph 110 and paragraphs 113(a), 114, 115, 118, 119(a) to (c), 120 to 127 and 129;
- IAS 1 'Presentation of Financial Statements' paragraph 38 to present comparative information in respect of:
  - IAS 1 'Presentation of Financial Statements' paragraph 79(a)(iv); and
  - IAS 16 'Property, Plant and Equipment' paragraph 73(e).
- IAS 1 'Presentation of Financial Statements' paragraphs 10(f), 16, and 40A-D;
- IAS 8 'Accounting Policies, Changes in Accounting Estimates and Errors' paragraphs 30 and 31;
- IAS 24 'Related Party Disclosures' paragraph 17; and
- IAS 24 'Related Party Disclosures' requirements to disclose transactions with companies also wholly owned within GS Group.

Consolidation

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

These financial statements are individual financial statements.

New Standards, Amendments and Interpretations

IFRS 9 'Financial Instruments'. From January 1, 2018, the company adopted the remaining provisions of IFRS 9 'Financial Instruments' (IFRS 9), having early adopted the requirements related to changes in the fair value of financial liabilities attributable to own credit spreads (debt valuation adjustment or DVA) effective from January 1, 2016. As permitted by IFRS 9, the company continues to apply the hedge accounting requirements of IAS 39 'Financial Instruments: Recognition and Measurement' (IAS 39).

The remaining provisions of IFRS 9 adopted by the company related to classification and measurement and impairment. As permitted by the transitional provisions of IFRS 9, the company has elected to not restate comparative figures. There was no change to the carrying value of the company's financial assets and financial liabilities at the date of transition.

Classification and Measurement

IFRS 9 introduces a principles-based approach to the classification of financial assets, resulting in the following categories: fair value through profit or loss; fair value through other comprehensive income; and amortised cost.

IFRS 9 requires debt assets to be classified based on a combination of the company's business models and the nature of the assets' cash flows.

As a result of the adoption of IFRS 9, the company reclassified $1.82 billion of collateralised agreements from fair value through profit or loss to amortised cost as of January 1, 2018.

The table below presents the measurement categories and the carrying amounts of financial assets in accordance with IFRS 9 and IAS 39 as of January 1, 2018.

	IFRS 9		
$ in millions	Mandatorily at fair value	Amortised cost	Total
As of January 1, 2018			
Financial instruments owned	**$640,264**	**$ –**	**$640,264**
Collateralised agreements	**138,545**	**66,275**	**204,820**
Debtors	**653**	**72,725**	**73,378**
Cash at bank and in hand	**–**	**20,727**	**20,727**
Total financial assets	**$779,462**	**$159,727**	**$939,189**

	IAS 39			
$ in millions	Held for trading	Designated at fair value	Loans and receivables	Total
As of January 1, 2018				
Financial instruments owned	**$640,264**	**$ –**	**$ –**	**$640,264**
Collateralised agreements	**–**	**140,360**	**64,460**	**204,820**
Debtors	**–**	**653**	**72,725**	**73,378**
Cash at bank and in hand	**–**	**–**	**20,727**	**20,727**
Total financial assets	**$640,264**	**$141,013**	**$157,912**	**$939,189**

The company's classification and measurement of financial liabilities remained unchanged on adoption of IFRS 9.

Impairment

IFRS 9 changes the impairment methodology for financial assets measured at amortised cost, replacing the incurred loss model of IAS 39 with a forward-looking expected credit loss (ECL) approach.

The company is required to assess expected losses based on the probability of default in the next twelve months, unless there has been a significant increase in credit risk since origination, in which case, the expected credit loss is based on the probability of default over the life of the asset.

The company has developed and tested an impairment model that complies with the key requirements of IFRS 9. Credit losses on adoption of IFRS 9 were not material as of January 1, 2018.

IFRS 15 'Revenue from Contracts with Customers'. From January 1, 2018, the company adopted IFRS 15 under the cumulative effect transition approach. This standard, as amended, provides comprehensive guidance on the recognition of revenue earned from contracts with customers arising from the transfer of goods and services, guidance on accounting for certain contract costs and new disclosures.

As a result of adopting this standard from January 1, 2018, the company delays recognition of non-refundable and milestone payments on financial advisory engagements until the engagements are completed. The cumulative effect of adopting this standard on January 1, 2018 was a decrease in retained earnings of $5 million (net of tax).

The company also prospectively changed the presentation of certain costs from a net presentation within net revenues to a gross basis, resulting in an increase in both net revenues and administrative expenses by $609 million for the period ended November 2018 in comparison to the company's past presentation.

Accounting Policies

Revenue Recognition. Net revenues include the net profit arising from transactions, with both third parties and affiliates, in derivatives, securities and other financial instruments, and fees and commissions. This is inclusive of associated interest and dividends. Net revenues have been disclosed instead of turnover as this reflects more meaningfully the nature and results of the company's activities.

Financial Assets and Financial Liabilities Measured at Fair Value Through Profit or Loss

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

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

In applying the provisions of IFRS 9 relating to DVA, the company is departing from the requirements of paragraph 40 of Schedule 1 of SI 2008/410 relating to recognising the changes in the fair value of financial instruments in the profit or loss account. The directors consider this departure is necessary in order for the accounts to give a true and fair view. See Note 19 for further information.

Revenue from Contracts with Clients

From January 1, 2018, the company accounts for revenues earned from contracts with clients for services such as investment banking, investment management, and execution and clearing (contracts with clients) under IFRS 15. As such, revenues from these services are recognised when the performance obligations related to the underlying transactions are completed.

In addition, from January 1, 2018, if the company is principal to the transaction, the company recognises revenue on contracts with clients, gross of expenses incurred to satisfy some or all of its performance obligations. The company is principal to the transaction if it has the primary obligation to provide the service to the client. The company satisfies the performance obligation by itself, or by engaging other GS Group entities to satisfy some or all of its performance obligations on its behalf. Such revenue is recognised in net revenues and expenses incurred are recognised in administrative expenses. Prior to January 1, 2018, revenue on contracts with clients was presented net of certain expenses incurred to satisfy some or all of the performance obligations. See "New Standards, Amendments and Interpretations — IFRS 15 'Revenue from Contracts with Customers'" for further information about the adoption impact of IFRS 15.

Net revenues are recognised as follows:

- **Investment Banking**
  Fees from financial advisory and underwriting engagements are recognised in profit and loss when the services related to the underlying transactions are completed under the terms of the engagement.

- **Investment Management**
  Management fees are recognised on an accrual basis and are generally calculated as a percentage of a fund or a separately managed account's average net asset value. All management fees are recognised over the period that the related service is provided.

  Incentive fees are calculated as a percentage of a fund's return or a percentage of a fund's excess return above a specified benchmark or other performance target.

- **Commissions and Fees**
  Revenue from commissions and fees from executing and clearing client transactions on stock, options and futures markets, as well as OTC transactions is recognised in net revenues on the day the trade is executed. The company also provides third-party research services to clients in connection with soft-dollar arrangements.

Operating Leases. The company has entered into operating lease arrangements as the lessee. Leased assets are not recognised in the balance sheet. Costs in respect of operating leases, adjusted for any incentives granted by the lessor, are charged on a straight-line basis over the lease term and included in administrative expenses.

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

Share-Based Payments. Group Inc. issues awards in the form of restricted stock units (RSUs) and stock options to the company's employees in exchange for employee services. Awards are classified as equity settled and hence the cost of share-based transactions with employees is measured based on the grant-date fair value of the award. Share-based awards that do not require future service (i.e., vested awards, including awards granted to retirement eligible employees) are expensed immediately. Share-based awards that require future service are amortised over the relevant service period. Expected forfeitures are included in determining share-based employee compensation expense.

Group Inc. generally issues new shares of common stock upon delivery of share-based awards. Cash dividend equivalents, unless prohibited by regulation, are generally paid on outstanding RSUs. The company has also entered into a chargeback agreement with Group Inc. under which it is committed to pay the grant-date fair value as well as subsequent movements in the fair value of those awards to Group Inc. at the time of delivery to its employees. As a result, the share-based payment transaction and chargeback agreement creates a total charge to the profit and loss account based on the grant-date fair value of the awards adjusted for subsequent movements in the fair value of those awards prior to delivery.

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

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

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

Fixed Assets.

Tangible Fixed Assets

Tangible fixed assets are stated at cost less accumulated depreciation and provision for impairment. Fixtures, fittings and equipment are depreciated on a straight-line basis over their estimated useful lives, which is between 3 to 7 years. Depreciation is included in administrative expenses.

Leasehold improvements are depreciated over the shorter of the useful economic life of the asset or the remaining life of the lease when the asset is brought into use. Depreciation policies are reviewed on an annual basis.

Intangible Fixed Assets

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

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

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

Fixed Asset Investments

Fixed asset investments are stated at cost or amortised cost, as applicable, less provision for impairment. Amortisation is included in administrative expenses.

Cash at Bank and In Hand. This includes cash at bank and in hand and highly liquid overnight deposits held in the ordinary course of business.

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

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

Financial Assets and Financial Liabilities.

Recognition and Derecognition

Financial assets and financial liabilities, other than cash instruments purchased or sold in regular way transactions, are recognised when the company becomes party to the contractual provisions of the instrument. Financial assets are derecognised when the contractual rights to the cash flows from the financial asset expire or if the company transfers the financial asset and the transfer qualifies for derecognition. A transferred financial asset qualifies for derecognition if the company transfers substantially all the risks and rewards of ownership of the financial asset or does not retain control. Financial liabilities are derecognised only when they are extinguished, i.e., when the obligation specified in the contract is discharged or cancelled or expires.

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

Classification and Measurement: Financial Assets

From January 1, 2018, the company has adopted the provisions of IFRS 9 related to classification and measurement of financial assets and classifies financial assets as subsequently measured at amortised cost or fair value through profit or loss on the basis of both the company's business model for managing financial assets and the contractual cash flow characteristics of the financial assets. The business model reflects how the company manages particular groups of assets in order to generate future cash flows. Where the company's business model is to hold the assets to collect contractual cash flows, the company subsequently assesses whether the financial assets' cash flows represent solely payments of principal and interest. Financial assets with embedded derivatives (hybrid instruments) that are not bifurcated from their host are also subject to the same assessment. See "New Standards, Amendments and Interpretations — IFRS 9 'Financial Instruments'" for further information about the adoption impact of IFRS 9.

- **Financial assets measured at amortised cost.** Financial assets that are held for the collection of contractual cash flows and have cash flows that represent solely payments of principal and interest are measured at amortised cost, unless they are designated at fair value through profit or loss. The company considers whether the cash flows represent basic lending arrangements, and where contractual terms introduce exposure to risk or volatility inconsistent with a basic lending arrangement, the financial asset is mandatorily measured at fair value through profit or loss (see below).

  Financial assets measured at amortised cost are initially measured at fair value plus transaction costs and subsequently at amortised cost using the effective interest method. The effective interest method is a method of calculating the amortised cost of a financial instrument and allocating the interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset or, when appropriate, a shorter period to the net carrying amount of the financial asset. When calculating the effective interest rate, the company estimates cash flows considering all contractual terms of the financial asset but does not consider future credit losses. Finance revenue is recorded in net revenues. Financial assets measured at amortised cost include:

  - Certain collateralised agreements, which consists of certain resale agreements and securities borrowed;
  - Substantially all debtors; and
  - Cash at bank and in hand.

- **Financial assets mandatorily measured at fair value through profit or loss.** Financial assets that are not held for the collection of contractual cash flows and/or do not have cash flows that represent solely payments of principal and interest are mandatorily measured at fair value through profit or loss. Financial assets mandatorily measured at fair value are initially measured at fair value with transaction costs expensed in profit or loss. Such financial assets are subsequently measured at fair value with gains or losses recognised in net revenues. Financial assets mandatorily measured at fair value include:
  - Financial instruments owned, which consists of cash instruments and derivative instruments;
  - Certain collateralised agreements, which consists of certain resale agreements and securities borrowed; and
  - Certain debtors, which consists of transfers of assets accounted for as secured loans rather than purchases, and prepaid commodity contracts.

Prior to January 1, 2018, the company classified its financial assets into the following categories under IAS 39:

- **Financial assets held for trading.** Financial assets held for trading included financial instruments owned, which consisted of cash instruments and derivative instruments. Financial instruments owned were initially recognised at fair value with transaction costs expensed in profit or loss. Such financial assets were subsequently measured at fair value with gains or losses recognised in net revenues.
- **Financial assets designated at fair value through profit or loss.** The company designated certain of its other financial assets at fair value through profit or loss. This included resale agreements, securities borrowed within FICC Client Execution and certain debtors, which consisted of transfers of assets accounted for as secured loans rather than purchases and prepaid commodity contracts. Financial assets designated at fair value through profit or loss were initially recognised at fair value with transactions costs expensed in profit or loss. Such financial assets were subsequently measured at fair value with gains or losses recognised in net revenues.
- **Loans and receivables.** Loans and receivables were non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. They included certain collateralised agreements, substantially all debtors and cash at bank and in hand. Such financial assets were initially recognised at fair value plus transactions costs and subsequently measured at amortised cost using the effective interest method. Finance revenue was recorded in net revenues.

Classification and Measurement: Financial Liabilities

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

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

  Financial liabilities designated at fair value through profit or loss include:
  - Repurchase agreements;
  - Securities loaned within FICC Client Execution;
  - Secured debt securities issued and other borrowings, which consist of hybrid financial instruments and transfers of assets accounted for as financings rather than sales;
  - Certain unsecured debt securities issued and other borrowings, which consist of hybrid financial instruments; and
  - Certain other creditors, which consist of certain intercompany loans, and prepaid commodity contracts.

Hybrid financial instruments are instruments that contain bifurcatable embedded derivatives. If the company elects to bifurcate the embedded derivative from the associated debt, the derivative is accounted for at fair value and the host contract is accounted for at amortised cost, adjusted for the effective portion of any fair value hedges. If the company does not elect to bifurcate, the entire hybrid financial instrument is designated at fair value through profit or loss.

- **Financial liabilities measured at amortised cost.** Financial liabilities measured at amortised cost are initially measured at fair value plus transaction costs and subsequently measured at amortised cost using the effective interest method. See "Financial assets measured at amortised cost" above for further information on the effective interest method. Finance costs, including discounts allowed on issue, are recorded in net revenues with the exception of interest on long-term subordinated loans, which is recorded in interest payable and similar expenses. Financial liabilities measured at amortised cost include:
  - Certain repurchase agreements and securities loaned; and
  - Certain other creditors that have not been designated at fair value through profit or loss.

Impairment

From January 1, 2018, the company has adopted IFRS 9 and assesses on a forward-looking basis the expected credit losses associated with financial assets measured at amortised cost. The measurement of expected credit losses reflects an unbiased and probability weighted amount that is determined by evaluating a range of possible outcomes, the time value of money, and reasonable and supportable information that is available without undue cost or effort at the reporting date about past events, current conditions and forecasts of future economic conditions. Expected credit losses are recorded in net revenues. See "New Standards, Amendments and Interpretations — IFRS 9 'Financial Instruments'" for further information about the adoption impact of IFRS 9.

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

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

Determination of the relevant staging for each financial asset is dependent on the definition of 'significant increase in credit risk' (stage 1 to stage 2) and the definition of 'credit-impaired' (stage 2 to stage 3). The company considers a financial asset to have experienced a significant increase in credit risk when certain quantitative or qualitative conditions are met. Quantitative thresholds include absolute probability of default thresholds on investment-grade financial assets and relative probability of default thresholds on non-investment grade financial assets. Qualitative review is also performed as part of the company's credit risk management process, including a back-stop consideration of 30 days past due. The company considers a financial asset to be credit-impaired when it meets Credit Risk Management's definition of default, which is either when the company considers that the obligor is unlikely to pay its credit obligations to GS Group in full, without recourse by the company to actions such as realising security (if held), or the obligor has defaulted on a payment and/or is past due more than 90 days.

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

Forward-looking information, such as key economic variables impacting credit risk and expected credit losses, is incorporated into both the assessment of staging and the calculation of ECL. Economic variables have been forecasted using internally generated projections to provide an estimated view of the economy over the next nine quarters. After nine quarters a mean reversion approach has been used, which means that economic variables tend to either a long run average rate or a long run growth rate.

The company writes off financial assets, in whole or in part, when it has concluded that there is no reasonable expectation of recovery. When a financial asset is deemed to be uncollectable, the company concludes this to be an indicator that there is no reasonable expectation of recovery. The company still seeks to recover amounts it is legally owed in full, but which have been wholly or partially written off due to no reasonable expectation of full recovery.

Prior to January 1, 2018, the company applied the impairment requirements of IAS 39 and assessed its loans and receivables at each balance sheet date for any objective evidence of impairment. If there was no objective evidence that an impairment loss had been incurred, the amount of the loss was measured as the difference between the financial asset's carrying amount and the present value of estimated future cash flows discounted at the financial asset's original effective interest rate. The amount of the loss was included within net revenues, if trading related, or in administrative expenses if non-trading related.

Classification of Financial Liabilities and Equity

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

Offsetting Financial Assets and Financial Liabilities

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

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

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

Fair Value Measurement

See Note 28 for details about the fair value measurement of the company's financial assets and financial liabilities.

Fair Value Hedges

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

Current Asset Investments

The directors are of the opinion that it would not be appropriate to classify financial instruments owned as current asset investments or to provide an analysis of such securities between those listed and unlisted.

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

Current and Deferred Taxation. The tax expense for the period consists of current and deferred taxation. Tax is recognised in the profit and loss account, except to the extent it relates to items recognised in other comprehensive income.

Current tax is calculated on the basis of the tax laws enacted or substantively enacted at the balance sheet date in the countries where the company operates and generates taxable income. Deferred tax is recognised in respect of all temporary differences that have originated, but not reversed at the balance sheet date, where transactions or events have occurred at that date that will result in an obligation to pay more tax or a right to pay less tax in the future with the following exceptions:

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

Deferred tax is recognised in the profit and loss account or directly in other comprehensive income according to where the associated gain or loss, to which the deferred tax is attributable, is recognised.

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

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

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

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

Note 3.

Critical Accounting Estimates and Judgements

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

Fair Value Measurement

Certain of the company's financial assets and financial liabilities include significant unobservable inputs (i.e., level 3). See Note 28 for information about the carrying value, valuation techniques and significant inputs of these instruments.

Litigation and Regulatory Proceedings

The company estimates and provides for potential losses that may arise out of litigation and regulatory proceedings to the extent that such losses are probable and can be reasonably estimated. Significant judgement is required in making these estimates and the company's final liabilities may ultimately be materially different. See Note 20 for further information about the company's provisions for liabilities and Note 26 for legal proceedings that the company is involved in.

Defined Benefit Pension

The cost of the Plan and the value of the Plan liabilities are determined using actuarial valuations. This involves making assumptions about discount rates, future salary increases, mortality rates and future pension increases. Due to the complexity of the valuation, such estimates are subject to significant uncertainty. See Note 10 for further information about the company's Plan.

Note 4.

Net Revenues

Net revenues include net interest income and non-interest income. Net interest income includes interest and dividends on financial assets and financial liabilities measured at fair value and amortised cost. Non-interest income primarily includes:

- Gains and losses on financial assets and financial liabilities mandatorily measured at fair value through profit or loss (including financial liabilities held for trading) primarily relates to non-interest gains and losses on financial instruments owned and financial instruments sold, but not yet purchased. This also includes gains and losses on certain collateralised agreements from January 1, 2018 that are measured mandatorily at fair value through profit or loss under IFRS 9.
- Gains and losses on financial assets and financial liabilities designated at fair value through profit or loss primarily relates to non-interest gains and losses on certain other creditors and collateralised financings. This also includes gains and losses on certain collateralised agreements prior to January 1, 2018 that were designated at fair value through profit or loss under IAS 39.
- Fees and commissions primarily includes net revenues from certain financial advisory and underwriting engagements, executing and clearing client transactions and certain investment management services.

The table below presents the company's net revenues.

	Period Ended	
	November	December
$ in millions	**2018**	2017
Interest income		
Interest income from external counterparties	**$ 5,014**	$ 3,248
Interest income from parent and group undertakings	**1,566**	1,227
Total interest income	**6,580**	4,475
Interest expense		
Interest expense from external counterparties	**(3,212)**	(2,192)
Interest expense from parent and group undertakings	**(3,563)**	(2,087)
Total interest expense	**(6,775)**	(4,279)
Net interest income/(expense)	**(195)**	196
Financial assets and financial liabilities measured mandatorily at fair value through profit or loss	**4,416**	7,230
Financial assets and financial liabilities designated at fair value through profit or loss	**1,875**	(2,442)
Fees and commissions	**1,770**	1,530
Other	**–**	(6)
Non-interest income	**8,061**	6,312
Net revenues	**$ 7,866**	$ 6,508

In the table above:

- Interest income included income from financial assets and financial liabilities measured at amortised cost of $2.41 billion for the period ended November 2018 and $1.16 billion for the period ended December 2017.
- Interest expense included expenses from financial assets and financial liabilities measured at amortised cost of $3.37 billion for the period ended November 2018 and $1.96 billion for the period ended December 2017.
- Financial assets and financial liabilities designated at fair value through profit or loss are frequently economically hedged with financial assets and financial liabilities measured mandatorily at fair value through profit or loss. Accordingly, gains or losses that are reported in financial assets and financial liabilities designated at fair value through profit or loss can be partially offset by gains or losses reported in financial assets and financial liabilities measured mandatorily at fair value through profit or loss.
- The company has made the following presentational changes for the period ended December 2017:
  - Interest income and interest expense have both increased by $1.45 billion to conform to the current period's presentation. This is mainly to reclassify negative interest income to interest expense and negative interest expense to interest income for certain instruments and to reclassify income on certain currency management instruments from interest expense to interest income.
  - Fees and commissions income has increased by $952 million, with no change to total non-interest income, to conform to the current period's presentation, by including net revenues from certain financial advisory, underwriting and investment management activities.

Note 5.

Segment Reporting

The company reports its activities in the following four business segments: Investment Banking; Institutional Client Services; Investing & Lending; and Investment Management. See "Results of Operations — Segment Reporting" in Part I of this annual report for a description of the company's segments.

Basis of Preparation

In reporting segments, certain of the company's business lines have been aggregated where they have similar economic characteristics and are similar in each of the following areas: (i) the nature of the services they provide; (ii) their methods of distribution; (iii) the types of clients they serve; and (iv) the regulatory environments in which they operate.

The cost drivers of the company taken as a whole, compensation, headcount and levels of business activity, are broadly similar in each of the company's business segments. Direct costs of employment in the company's segments reflect, among other factors, the overall performance of the company as well as the performance of individual businesses. Consequently, operating profit margins in one segment of the company's business may be significantly affected by the performance of the company's other business segments.

The company allocates assets (including allocations of GCLA and cash, secured client financing and other assets), revenues and expenses among the four business segments. Due to the integrated nature of these segments, estimates and judgements are made in allocating certain assets, revenues and expenses.

The allocation process is based on the manner in which management currently views the performance of the segments. Transactions between segments are based on specific criteria or approximate third-party rates. Total administrative expenses includes charitable contributions and mark-to-market of share-based compensation that have not been allocated to individual business segments.

In addition to transactions entered into with third parties, the company also enters into transactions with affiliates in the normal course of business as part of market-making activities and general operations. Revenues are allocated to, and received from, such affiliates for these transactions.

Management believes that the information below provides a reasonable representation of each segment's contribution to net revenues, operating profit and total assets. Operating profit has only been presented for the company's significant segments, which are Investment Banking and Institutional Client Services.

The segment information presented in "Segment Net Revenues" and "Segment Operating Profit" below is prepared according to the following methodologies:

- Revenue and expenses directly associated with each segment are included in determining operating profit.
- Net revenues in the company's segments include allocations of interest income and expense to specific securities and other positions in relation to the cash generated by, or funding requirements of, such positions with the exception of interest on long-term subordinated loans, which is presented in interest payable and similar expenses (see Note 9). Net interest is included in segment net revenues as it is consistent with how management assesses segment performance.
- Overhead expenses not directly allocable to specific segments are allocated ratably based on direct segment expenses.

Segment Net Revenues

The table below presents the net revenues of the company's segments.

	Period Ended	
$ in millions	**November 2018**	December 2017
Investment Banking		
Financial Advisory	**$ 693**	$ 514
Underwriting	**871**	662
Total Investment Banking	**$1,564**	$1,176
Institutional Client Services		
FICC Client Execution	**$2,203**	$2,117
Equities	**2,812**	2,365
Total Institutional Client Services	**$5,015**	$4,482
Investing & Lending	**$ 494**	$ 318
Investment Management	**$ 793**	$ 532
Total net revenues	**$7,866**	$6,508

Substantially all interest income and interest expense recognised in net revenues is attributable to Institutional Client Services.

Segment Operating Profit

The table below presents the operating profit of the company's significant segments.

	Period Ended	
$ in millions	**November 2018**	December 2017
Investment Banking		
Net revenues	**$ 1,564**	$ 1,176
Administrative expenses	**(1,067)**	(748)
Operating profit	**$ 497**	$ 428
Institutional Client Services		
Net revenues	**$ 5,015**	$ 4,482
Administrative expenses	**(2,901)**	(2,627)
Operating profit	**$ 2,114**	$ 1,855
Total net revenues	**$ 7,866**	$ 6,508
Total administrative expenses	**(4,607)**	(4,119)
Total operating profit	**$ 3,259**	$ 2,389

In the table above:

- Total net revenues included net revenues related to Investing & Lending and Investment Management segments of $1.29 billion for the period ended November 2018 and $850 million for the period ended December 2017.
- Total administrative expenses included administrative expenses related to Investing & Lending and Investment Management segments of $801 million for the period ended November 2018 and $575 million for the period ended December 2017.
- Total administrative expenses included a credit of $184 million for the period ended November 2018 and a charge of $144 million for the period ended December 2017 representing mark-to-market of share-based compensation that has not been allocated to the company's segments.
- Total administrative expenses included a charge of $22 million for the period ended November 2018 and $25 million for the period ended December 2017 representing charitable contributions that have not been allocated to the company's segments.

Segment Assets

Substantially all of the company's assets are attributable to Institutional Client Services.

Geographic Information

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

Geographic results are generally allocated as follows:

- Investment Banking: location of the client, investment banking team and underlying risk.
- Institutional Client Services: location of the market-making desk and the primary market for the underlying security.
- Investing & Lending: location of the investing and lending team.
- Investment Management: location of the investment management team.

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

	Period Ended	
$ in millions	**November 2018**	December 2017
EMEA	**$5,674**	$4,897
Americas	**1,352**	1,185
Asia	**840**	426
Total net revenues	**$7,866**	$6,508

Note 6.

Administrative Expenses

The table below presents the company's administrative expenses.

	Period Ended	
$ in millions	**November 2018**	December 2017
Direct costs of employment	**$1,945**	$2,395
Management charges from/to group undertakings relating to staff costs	**205**	56
Brokerage, clearing, exchange and distribution fees	**767**	702
Market development	**81**	80
Communications and technology	**112**	97
Depreciation and amortisation	**58**	39
Occupancy	**157**	156
Professional fees	**203**	193
Management charges from/to group undertakings relating to other services	**210**	189
Other expenses	**869**	212
Total administrative expenses	**$4,607**	$4,119

In the table above:

- The company has reclassified $57 million of consultant and temporary staff costs for the period ended December 2017 from direct costs of employment to professional fees to conform to the current presentation.
- The company has reclassified $85 million of transaction and other fees for the period ended December 2017 that are paid to exchanges from other expenses to brokerage, clearing, exchange and distribution fees to conform to the current presentation.
- Occupancy expenses included net operating lease rentals for land and buildings of $69 million for the period ended November 2018 and $72 million for the period ended December 2017.
- Other expenses include the impact of adopting IFRS 15, provisions for liabilities, miscellaneous taxes and charitable contributions.
- Management charges from/to group undertakings includes service charges relating to operational and administrative support, and management services received from and provided to group undertakings.

The table below presents charges from and to group undertakings for both management charges relating to staff costs and management charges relating to other services.

	Period Ended	
$ in millions	**November 2018**	December 2017
Charges from group undertakings	**$ 460**	$ 345
Charges to group undertakings	**(255)**	(289)
Management charges relating to staff costs	**205**	56
Charges from group undertakings	**341**	292
Charges to group undertakings	**(131)**	(103)
Management charges relating to other services	**210**	189
Total	**$ 415**	$ 245

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

	Period Ended	
$ in millions	**November 2018**	December 2017
Fees for the company's audit	**$6.1**	$4.1
Audit related assurance services	**4.2**	2.0
Other assurance services	**1.5**	0.1
Taxation compliance services	**0.1**	0.2
Other non-audit services	**0.1**	0.1
Total fees for non-audit services	**5.9**	2.4
Total	**$12.0**	$6.5

In the table above:

- The fees for the company's audit for the period ended November 2018 increased by $2.0 million compared with the period ended December 2017 and fees for audit related assurance services for the period ended November 2018 increased by $2.2 million compared with the period ended December 2017, primarily due to the company changing its accounting reference date.
- Other assurance services for the period ended November 2018 included the company's share of fees related to certain services provided by a network firm of the company's auditor to various GS Group entities. These fees were apportioned to the various GS Group entities, including the company, by reference to each entity's asset size.

Note 7.

Staff Costs

The table below presents the company's average monthly headcount.

Number	Average for the Period Ended November 2018	Average for the Period Ended December 2017
Employees including directors		
Investment Banking	**754**	714
Institutional Client Services	**1,495**	1,449
Investing & Lending	**193**	149
Investment Management	**546**	563
Support Functions	**1,079**	1,451
Total average headcount	**4,067**	4,326

Total headcount was 4,210 as of November 2018 and 4,031 as of December 2017.

The company's average monthly headcount for the period ended December 2017 and total headcount as of December 2017 have been reduced by 362 and 436, respectively, in order to align to the current presentation, which excludes consultants and temporary staff.

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

$ in millions	Period Ended November 2018	Period Ended December 2017
Wages and salaries	**$1,659**	$2,049
Social security costs	**237**	278
Pension costs:		
Defined contribution plan and defined contribution section of the hybrid pension plan	**45**	67
Defined benefit section of the hybrid pension plan	**4**	1
Total direct costs of employment	**$1,945**	$2,395

In the table above:

- Total direct costs of employment included a credit of $184 million for the period ended November 2018 and a charge of $144 million for the period ended December 2017 relating to the mark-to-market of share-based compensation.
- Consultant and temporary staff costs of $57 million for the period ended December 2017 have been reclassified from aggregate wages and salaries to professional fees, in administrative expenses, to conform to the current presentation.

Note 8.

Directors' Emoluments

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

$ in millions	Period Ended November 2018	Period Ended December 2017
Aggregate emoluments	**$5**	$6
Company pension contributions to money purchase schemes	**–**	–
Total directors' emoluments	**$5**	$6

The table below presents emoluments for the highest paid director.

$ in millions	Period Ended November 2018	Period Ended December 2017
Aggregate emoluments	**$3**	$3
Company pension contributions to money purchase schemes	**–**	–
Accrued annual pension at end of the period	**–**	–

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

Four directors were members of a defined contribution scheme. Four directors, including the highest paid director, have received or are due to receive Group Inc. shares in respect of long-term incentive schemes during the period. One director has exercised stock options during the period.

The aggregate emoluments of the eight non-executive directors who were members of the board of directors for all or part of the period ended November 2018 was approximately $1.6 million. Certain non-executive directors received or will receive additional ongoing fees in respect of advisory services provided during the period ended November 2018, the aggregate amount of which is approximately $2.4 million.

Note 9.

Interest Payable and Similar Expenses

Interest payable and similar expenses consists of interest on long-term subordinated loans from parent and group undertakings of $237 million for the period ended November 2018 and $301 million for the period ended December 2017. See Note 19 for further details.

Note 10.

Pension Arrangements

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

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

The Plan operates under trust law and is managed and administrated by the Goldman Sachs UK Retirement Plan Trustee Limited (the Trustee) on behalf of the members in accordance with the terms of the Trust Deed and Rules and relevant legislation. The Plan's assets are held by the trust.

A full actuarial valuation of the Plan was carried out by a qualified independent actuary as of July 31, 2018 using the projected unit credit method and updated to November 30, 2018. As of November 2018, the Plan liabilities consist of 96% in respect of future beneficiaries and 4% in respect of current beneficiaries.

Risks of the Plan

The main risks of the Plan are:

- **Funding Shortfall.** Additional contributions will be required if the investment returns are not sufficient to pay for benefits. The level of equity returns will be a key determinant of overall investment return; the investment portfolio is also subject to a range of other risks typical of the asset classes held, in particular interest rate risk and inflation risk on bonds.
- **Asset Volatility.** A consequence of the Plan's investment strategy, with a significant proportion of the assets invested in equities and other return-seeking assets is that the difference between Plan assets and Plan liabilities may be volatile.
- **Plan Liabilities Sensitivity.** Plan liabilities are sensitive to the assumptions made about future inflation and life expectancy. It is also sensitive to the discount rate, which depends on market yields on sterling-denominated high-quality corporate bonds.

Financial Assumptions

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

	Period Ended	
% per annum	**November 2018**	December 2017
Discount rate	**3.14**	2.40
Rate of price inflation – RPI	**3.50**	3.35
Rate of price inflation – CPI	**2.50**	2.35
Rate of increase in pensions in payments (post-November 30, 1996 accrual)	**3.30**	3.15
Rate of increase in pensions in deferment (post-November 30, 1996 accrual)	**2.50**	2.35
Rate of increase in pensions in deferment (post-April 5, 2009 accrual)	**2.50**	2.35

Mortality Assumptions

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

	Period Ended	
Years	**November 2018**	December 2017
Life expectancy at 65 for a member currently 65		
Males	**23.5**	23.6
Females	**24.7**	24.7
Life expectancy at 65 for a member currently 45		
Males	**24.8**	25.0
Females	**26.2**	26.2

In the table above, the mortality assumptions adopted for the period ended November 2018 were the "S1 series all pensioner light" base table with allowance for future improvements from 2002 onwards in line with the CMI 2017 core projections with a long-term rate of improvement of 1.25% per annum.

Defined Benefit Cost

The table below presents the defined benefit gain related to the Plan recognised in the company's profit and loss account and in other comprehensive income.

	Period Ended	
$ in millions	**November 2018**	December 2017
Profit and loss account		
Past service cost	**$ 4**	$ –
Administration costs	**–**	1
Net finance income	**(8)**	(3)
Total credited to the profit and loss account	**(4)**	(2)
Other comprehensive income		
Return on Plan assets less/(greater) than discount rate	**368**	(184)
Actuarial loss/(gain) – liability experience	**(7)**	5
Actuarial loss/(gain) – financial assumptions	**(408)**	48
Actuarial gain – demographic assumptions	**(14)**	(67)
Total gain recognised in other comprehensive income	**(61)**	(198)
Total defined benefit gain	**$ (65)**	$(200)

Reconciliation of Pension Surplus

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

$ in millions	Plan assets	Plan liabilities	Net pension surplus
Period Ended November 2018			
As of January 1	**$2,663**	**$(2,342)**	**$ 321**
Past service cost	**–**	**(4)**	**(4)**
Administration cost	**–**	**–**	**–**
Net finance income	**58**	**(50)**	**8**
Return on Plan assets greater/(less) than discount rate	**(368)**	**–**	**(368)**
Actuarial gain/(loss) – liability experience	**–**	**7**	**7**
Actuarial gain/(loss) – financial assumptions	**–**	**408**	**408**
Actuarial gain – demographic assumptions	**–**	**14**	**14**
Employer contributions	**47**	**–**	**47**
Benefits paid	**(34)**	**34**	**–**
Foreign exchange gain/(loss)	**(144)**	**117**	**(27)**
As of November 30	**$2,222**	**$(1,816)**	**$ 406**
Period Ended December 2017			
As of January 1	$2,159	$(2,106)	$ 53
Past service cost	–	–	–
Administration cost	–	(1)	(1)
Net finance income	59	(56)	3
Return on Plan assets greater/(less) than discount rate	184	–	184
Actuarial gain/(loss) – liability experience	–	(5)	(5)
Actuarial gain/(loss) – financial assumptions	–	(48)	(48)
Actuarial gain – demographic assumptions	–	67	67
Employer contributions	50	–	50
Benefits paid	(12)	12	–
Foreign exchange gain/(loss)	223	(205)	18
As of December 31	$2,663	$(2,342)	$ 321

Fair Value of Plan Assets

The Plan Trustees have a long-term asset allocation strategy to invest 50% of assets in return seeking investments (such as equities) and 50% in liability matching assets (such as Gilts). The Plan has a hedging programme investing in swaps and other derivatives in order to reduce the exposure to changes in interest rates and inflation.

The table below presents the fair value of Plan assets.

$ in millions	Quoted	Unquoted	Total
As of November 2018			
Equities	**$1,126**	**$ –**	**$1,126**
Gilts	**497**	**–**	**497**
Swaps	**–**	**395**	**395**
Cash and cash equivalents	**108**	**–**	**108**
Other	**–**	**96**	**96**
Total	**$1,731**	**$491**	**$2,222**
As of December 2017			
Equities	$1,042	$ –	$1,042
Gilts	638	–	638
Swaps	–	615	615
Cash and cash equivalents	133	–	133
Other	172	63	235
Total	$1,985	$678	$2,663

Sensitivity Analysis

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

	Impact to Plan Liabilities			
	Increase in assumption		Decrease in assumption	
	$ in millions	*%*	*$ in millions*	*%*
As of November 2018				
0.25% change in discount rate	**$(138)**	**(7.6)**	**$ 151**	**8.3**
0.25% change in price inflation	**109**	**6.0**	**(127)**	**(7.0)**
1 year change in life expectancy	**75**	**4.1**	**(75)**	**(4.1)**
As of December 2017				
0.25% change in discount rate	$(192)	(8.2)	$ 209	8.9
0.25% change in price inflation	171	7.3	(172)	(7.3)
1 year change in life expectancy	104	4.4	(103)	(4.4)

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

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

Nature of Future Cash Flows

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

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

The most recent funding valuation was performed by a qualified independent actuary as of December 31, 2015, which indicated that the Plan was in a funding deficit of £66.3 million. As of December 31, 2016, the company agreed with the Trustees to contribute £73.3 million to the Plan, in two instalments. The first instalment of £40.0 million ($50 million) was made in January 2017, and the second instalment of £33.3 million ($47 million) was made in January 2018. The preliminary results of the next formal triennial valuation as of December 2018 are likely to be available in the third quarter of 2019.

The company expects $37 million of benefits to be paid out of the Plan to members in the twelve months after the period ended November 2018.

The weighted average duration of Plan liabilities was 33 years as of November 2018.

Note 11.

Share-Based Payments

Stock Incentive Plan

Group Inc. sponsors a stock incentive plan, The Goldman Sachs Amended and Restated Stock Incentive Plan (2018) (2018 SIP), which provides for, amongst others, grants of RSUs, restricted stock, dividend equivalent rights and incentive stock options. On May 2, 2018, Group Inc.'s shareholders approved the 2018 SIP. The 2018 SIP replaced The Goldman Sachs Amended and Restated Stock Incentive Plan (2015) previously in effect, and applies to awards granted on or after the date of approval.

The company recorded share-based compensation in respect of the amortisation of granted equity awards, net of forfeitures, of $405 million for both the period ended November 2018 and the period ended December 2017. The corresponding credit to equity has been transferred to liabilities as a result of the terms of the chargeback agreement with Group Inc. under which the company is committed to pay to Group Inc. the grant-date fair value as well as subsequent movements in the fair value of those awards to Group Inc. at the time of delivery to its employees.

Restricted Stock Units

Group Inc. grants RSUs to the company's employees under the 2018 SIP, which are generally valued based on the closing price of the underlying shares on the date of grant after taking into account a liquidity discount for any applicable post-vesting and delivery transfer restrictions. RSUs generally vest and underlying shares of common stock deliver (net of required withholding tax) as outlined in the applicable award agreements. Employee award agreements generally provide that vesting is accelerated in certain circumstances, such as on retirement, death, disability and conflicted employment. Delivery of the underlying shares of common stock is conditioned on the grantees satisfying certain vesting and other requirements outlined in the award agreements.

Stock Options

Stock options generally vest as outlined in the applicable stock option agreement. In general, options expire on the tenth anniversary of the grant date, although they may be subject to earlier termination or cancellation under certain circumstances in accordance with the terms of the applicable stock option agreement and The Goldman Sachs Amended and Restated Stock Incentive Plan in effect at the time of grant.

The table below presents options outstanding. All outstanding options as of November 2018 were granted in 2008.

Exercise Price	Options outstanding	Weighted average exercise price	Weighted average remaining life *(years)*
As of November 2018			
$ 75.00 - $ 89.99	**249,813**	**$78.78**	**0.08**
Total outstanding	**249,813**	**$78.78**	**0.08**
As of December 2017			
$ 75.00 - $ 89.99	625,556	$78.78	1.00
Total outstanding	625,556	$78.78	1.00

For those options exercised during the period, the weighted average share price at the date of exercise was $253.52 for the period ended November 2018 and $239.34 for the period ended December 2017.

Note 12.

Tax on Profit

The table below presents an analysis of the company's tax on profit.

	Period Ended	
$ in millions	**November 2018**	December 2017
Current tax		
U.K. taxation	**$430**	$267
Adjustments in respect of prior periods	**37**	(25)
Overseas taxation	**182**	147
Total current tax	**649**	389
Deferred tax		
Origination and reversal of temporary differences	**180**	119
Adjustments in respect of prior periods	**3**	26
Total deferred tax	**183**	145
Total tax on profit	**$832**	$534

The table below presents a reconciliation between tax on profit and the amount calculated by applying the weighted average rate of U.K. corporation tax applicable to the company for the period ended November 2018 of 27.0% (period ended December 2017: 27.25%) to the profit before taxation.

	Period Ended	
$ in millions	**November 2018**	December 2017
Profit before taxation	**$3,030**	$2,091
Profit multiplied by U.K. corporate tax rate of 27.0% (period ended December 2017: 27.25%)	**818**	570
Changes in recognition and measurement of deferred tax assets	**6**	8
Permanent differences	**(32)**	2
Tax losses surrendered from group undertakings for nil consideration	**–**	(50)
Effect of higher taxes on overseas earnings	**4**	5
Exchange differences and other	**(4)**	(2)
Adjustments in respect of prior periods	**40**	1
Total tax on profit	**$ 832**	$ 534

Note 13.

Fixed Assets

The table below presents fixed assets.

	As of	
$ in millions	**November 2018**	December 2017
Tangible fixed assets	**$ 20**	$ 27
Intangible fixed assets	**294**	182
Fixed asset investments	**1**	1
Total fixed assets	**$315**	$210

Tangible Fixed Assets

The table below presents the movements in tangible fixed assets during the period.

$ in millions	Leasehold improvements	Fixtures, fittings and equipment	Total
Cost			
As of January 1	54	10	64
Additions	**1**	**–**	**1**
Disposals	**(4)**	**–**	**(4)**
As of November 30	**51**	**10**	**61**
Accumulated depreciation			
As of January 1	31	6	37
Charge for the period (see Note 6)	**6**	**–**	**6**
Disposals	**(2)**	**–**	**(2)**
As of November 30	**35**	**6**	**41**
Net book value			
As of November 2018	**$16**	**$ 4**	**$20**
As of December 2017	$23	$ 4	$27

Intangible Fixed Assets

The table below presents the movements in intangible fixed assets during the period.

$ in millions	Computer software	Assets in the course of construction	Total
Cost			
As of January 1	113	101	214
Additions/Transfers	**89**	**82**	**171**
Disposals	**(11)**	**–**	**(11)**
As of November 30	**191**	**183**	**374**
Accumulated amortisation			
As of January 1	32	–	32
Charge for the period (see Note 6)	**52**	**–**	**52**
Disposals	**(4)**	**–**	**(4)**
As of November 30	**80**	**–**	**80**
Net book value			
As of November 2018	**$111**	**$183**	**$294**
As of December 2017	$ 81	$101	$182

Fixed Asset Investments

Fixed asset investments included investments other than loans of $1 million as of both November 2018 and December 2017 and shares in subsidiary undertakings of $nil as of both November 2018 and December 2017.

The table below presents the subsidiary over which the company exercised control as of November 2018.

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

The registered office address of Goldman Sachs (Cayman) Limited is the offices of Maples Corporate Services Limited, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands.

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

Note 14.

Financial Instruments Owned and Financial Instruments Sold, But Not Yet Purchased

Financial instruments owned and financial instruments sold, but not yet purchased consist of financial instruments and investments within the operating activities of the company. Financial instruments owned includes financial instruments owned pledged as collateral. See Note 28 for further information.

The table below presents financial instruments owned.

	As of	
$ in millions	**November 2018**	December 2017
Cash instruments		
Money market instruments	**$ 428**	$ 434
Government and agency obligations	**33,516**	21,095
Mortgage and other asset-backed loans and securities	**485**	641
Corporate debt instruments	**16,482**	15,535
Equity securities	**30,567**	35,944
Commodities	**88**	406
Total cash instruments	**81,566**	74,055
Derivative instruments		
Interest rates	**294,986**	356,901
Credit	**28,463**	30,158
Currencies	**111,791**	108,600
Commodities	**12,644**	11,222
Equities	**64,679**	59,328
Total derivative instruments	**512,563**	566,209
Total financial instruments owned	**$594,129**	$640,264

The table below presents financial instruments sold, but not yet purchased.

	As of	
$ in millions	**November 2018**	December 2017
Cash instruments		
Government and agency obligations	**$ 21,700**	$ 13,055
Corporate debt instruments	**3,486**	2,406
Equity securities	**22,412**	18,335
Commodities	**2**	3
Total cash instruments	**47,600**	33,799
Derivative instruments		
Interest rates	**287,789**	348,980
Credit	**26,080**	28,106
Currencies	**111,863**	110,955
Commodities	**12,758**	11,218
Equities	**59,897**	56,864
Total derivative instruments	**498,387**	556,123
Total financial instruments sold, but not yet purchased	**$545,987**	$589,922

In the tables above:

- Corporate debt instruments includes corporate loans, debt securities and other debt obligations.
- Equity securities includes public and private equities, exchange-traded funds and convertible debentures.

Note 15.

Collateralised Agreements

The table below presents collateralised agreements.

	As of	
	November	December
$ in millions	**2018**	2017
Resale agreements	**$127,474**	$122,539
Securities borrowed	**75,860**	82,281
Total collateralised agreements	**$203,334**	$204,820

In the table above:

- Total collateralised agreements included amounts due from group undertakings of $129.75 billion as of November 2018 and $119.51 billion as of December 2017.
- Total collateralised agreements included balances due in more than one year of $1.16 billion as of November 2018 and $522 million as of December 2017.

Note 16.

Debtors

The table below presents debtors balances. All debtors are due within one year of the balance sheet date, unless noted below.

	As of	
	November	December
$ in millions	**2018**	2017
Amounts due from broker/dealers and customers	**$52,084**	$62,988
Amounts due from parent and group undertakings	**12,391**	10,386
Deferred tax (see Note 17)	**256**	575
Other debtors	**29**	34
Prepayments and accrued income	**33**	69
Total debtors	**$64,793**	$74,052

In the table above:

- Amounts due from broker/dealers and customers included balances due in more than one year relating to prepaid commodity contracts of $nil as of November 2018 and $44 million as of December 2017.
- Amounts due from parent and group undertakings included balances due in more than one year relating to intercompany loans of $134 million as of November 2018 and $95 million as of December 2017.
- Amounts due from broker/dealers and customers and amounts due from parent and group undertakings included receivables from contracts with clients of $338 million as of November 2018 and $160 million as of December 2017.
- Total debtors included financial assets of $64.49 billion as of November 2018 and $73.38 billion as of December 2017, and non-financial assets of $306 million as of November 2018 and $674 million as of December 2017.

Note 17.

Deferred Tax

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

	As of	
	November	December
$ in millions	**2018**	2017
Deferred compensation	**$431**	$577
Post-retirement benefits	**(95)**	(72)
Timing differences related to fixed assets	**(68)**	(41)
Debt valuation adjustment	**(12)**	111
Total deferred tax	**$256**	$575

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

	As of	
	November	December
$ in millions	**2018**	2017
Deferred compensation		
Beginning balance	**$ 577**	$ 672
Transfer to the profit and loss account	**(146)**	(95)
Ending balance	**$ 431**	$ 577
Post-retirement benefits		
Beginning balance	**$ (72)**	$ (13)
Transfer to the profit and loss account	**(9)**	(9)
Transfer to other comprehensive income	**(14)**	(50)
Ending balance	**$ (95)**	$ (72)
Timing differences related to fixed assets		
Beginning balance	**$ (41)**	$ –
Transfer to the profit and loss account	**(27)**	(41)
Ending balance	**$ (68)**	$ (41)
Debt valuation adjustment		
Beginning balance	**$ 111**	$ 45
Transfer to other comprehensive income	**(123)**	66
Ending balance	**$ (12)**	$ 111
IFRS 15 transition adjustment		
Beginning balance	**$ –**	$ –
IFRS 15 transition adjustment	**1**	–
Transfer to the profit and loss account	**(1)**	–
Ending balance	**$ –**	$ –
Total		
Beginning balance	**$ 575**	$ 704
IFRS 15 transition adjustment	**1**	–
Transfer to the profit and loss account (see Note 12)	**(183)**	(145)
Transfer to other comprehensive income	**(137)**	16
Ending balance	**$ 256**	$ 575

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

Note 18.

Collateralised Financings

The table below presents collateralised financings.

	As of	
	November	December
$ in millions	**2018**	2017
Amounts falling due within one year		
Repurchase agreements	**$ 79,521**	$ 98,892
Securities loaned	**56,122**	56,038
Debt securities issued	**2,672**	1,253
Other borrowings	**3,525**	1,886
Total	**$141,840**	$158,069
Amounts falling due after more than one year		
Repurchase agreements	**$ 5,709**	$ 11,226
Securities loaned	**227**	2,063
Debt securities issued	**261**	405
Other borrowings	**4,108**	3,684
Total	**$ 10,305**	$ 17,378
Total collateralised financings	**$152,145**	$175,447

In the table above:

- Repurchase agreements falling due after more than one year included instruments that are repayable in more than five years of $74 million as of November 2018 and $83 million as of December 2017 which had maturities falling due in 2030.
- Debt securities issued and other borrowings falling due after more than one year included instruments that are repayable in more than five years of $2.21 billion as of November 2018 and $1.30 billion as of December 2017. As of November 2018, these instruments have maturities falling due between 2023 and 2050. Payments on these instruments are typically referenced to underlying financial assets, which are predominately credit and equities-related.
- Total collateralised financings included amounts due to group undertakings of $98.80 billion as of November 2018 and $120.36 billion as of December 2017 of which $95.90 billion as of November 2018 and $116.40 billion as of December 2017 are due within one year.
- Debt securities issued and other borrowings are secured by securities which have been pledged as collateral. This pledged collateral is either recognised in financial instruments owned or sourced through collateralised agreements.

Note 19.

Other Creditors

The table below presents other creditors.

	As of	
	November	December
$ in millions	**2018**	2017
Amounts falling due within one year		
Unsecured borrowings	**$ 29,229**	$ 27,544
Amounts due to broker/dealers and customers	**53,647**	57,675
Amounts due to parent and group undertakings:		
Other unsecured creditors	**12,465**	16,210
Share-based compensation	**418**	702
Corporation tax payable	**127**	66
Other taxes and social security costs	**338**	301
Other creditors and accruals	**927**	1,086
Total	**$ 97,151**	$103,584
Amounts falling due after more than one year		
Unsecured borrowings	**$ 57,461**	$ 38,924
Amounts due to parent and group undertakings:		
Other unsecured creditors	**–**	44
Share-based compensation	**575**	697
Other creditors	**59**	65
Total	**$ 58,095**	$ 39,730
Total other creditors	**$155,246**	$143,314

In the table above:

- Amounts falling due within one year included financial liabilities of $96.69 billion as of November 2018 and $103.22 billion as of December 2017 and non-financial liabilities of $465 million as of November 2018 and $367 million as of December 2017.
- All amounts falling due after more than one year are financial liabilities as of both November 2018 and December 2017.

Unsecured Borrowings

The table below presents unsecured borrowings.

	As of	
$ in millions	**November 2018**	December 2017
Intercompany		
Loans	**$21,232**	$20,276
Other borrowings	**892**	779
Short-term intercompany unsecured borrowings	**22,124**	21,055
Loans	**32,453**	14,920
Subordinated loans	**5,377**	5,377
Other borrowings	**1,539**	1,800
Long-term intercompany unsecured borrowings	**39,369**	22,097
Total intercompany unsecured borrowings	**$61,493**	$43,152
External		
Bank loans	**$ 164**	$ –
Overdrafts	**153**	73
Debt securities issued	**6,483**	5,329
Other borrowings	**305**	1,087
Short-term external unsecured borrowings	**7,105**	6,489
Bank loans	**6**	170
Debt securities issued	**17,854**	16,411
Other borrowings	**232**	246
Long-term external unsecured borrowings	**18,092**	16,827
Total external unsecured borrowings	**$25,197**	$23,316
Total unsecured borrowings	**$86,690**	$66,468

In the table above:

- Debt securities issued and other borrowings falling due after more than one year included instruments that are repayable in more than five years of $10.97 billion as of November 2018 and $9.46 billion as of December 2017. As of November 2018, these instruments have maturities falling due between 2023 and 2057. Payments on these instruments are typically referenced to underlying financial assets, which are predominately interest rates, equities and currencies-related.
- Intercompany loans falling due after more than one year included loans that are repayable in more than five years. As of November 2018, the company had variable rate loans of $1.03 billion with maturities falling due between April 8, 2024 and April 7, 2028. As of December 2017, the company had variable rate loans of $1.21 billion with maturities falling due between February 8, 2023 and December 22, 2027.

Debt Valuation Adjustment

The company calculates the fair value of financial liabilities that are designated at fair value through profit or loss by discounting future cash flows at a rate which incorporates GS Group's credit spreads.

The table below presents information about the net DVA gains/(losses) on such financial liabilities that are designated at fair value through profit or loss and included in debt valuation adjustment in other comprehensive income.

	Period Ended	
$ in millions	**November 2018**	December 2017
DVA (pre-tax)	**$465**	$(259)

The table below presents information about the cumulative net DVA gains/(losses) included in accumulated other comprehensive income in the statements of changes in equity.

	As of	
$ in millions	**November 2018**	December 2017
DVA (pre-tax)	**$54**	$(411)

Long-Term Subordinated Loans

Long-term subordinated loans consist of long-term subordinated loans from parent and group undertakings, which are unsecured and carry interest at a margin over the U.S. Federal Reserve's Federal Funds rate. The margin is reset on a periodic basis to reflect changes in GS Group's weighted average cost of debt. Long-term subordinated loans constitute regulatory capital as approved by the PRA, subject to any regulatory capital deductions, and are repayable subject to PRA approval.

Long-term subordinated loans of $5.38 billion as of both November 2018 and December 2017 were repayable between December 26, 2024 and September 9, 2025. The company repaid $3.58 billion of long-term subordinated loans with the agreement of the lenders in June 2017.

Liabilities From Financing Activities

Liabilities from financing activities consist of the company's long-term subordinated loans and associated accrued interest. See the "Statements of Cash Flows" for movements in the company's long-term subordinated loans. Accrued interest on the company's long-term subordinated loans for the period ended November 2018 decreased by $183 million, due to payments of $54 million, partially offset by interest accrued of $237 million. Accrued interest on the company's long-term subordinated loans for the period ended December 2017 decreased by $286 million, due to payments of $587 million, partially offset by interest accrued of $301 million.

Note 20.

Provisions for Liabilities

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

$ in millions	**2018**
As of January 1	**$10**
Charge to the profit and loss account	**68**
As of November 30	**$78**

Further details relating to the provisions have not been disclosed as permitted by IAS 37 'Provisions, Contingent Liabilities and Contingent Assets', on the grounds that for commercial and confidentiality reasons it would be seriously prejudicial to do so.

Note 21.

Share Capital

The table below presents share capital.

Allotted, called up and fully paid	**Ordinary shares of $1 each**	***$ in millions***
As of January 1, 2018	**581,964,161**	**$582**
Allotted during the period	**17,300,000**	**17**
Cancelled during the period	**(17,300,000)**	**(17)**
As of November 30, 2018	**581,964,161**	**$582**

In order to simplify the company's capital structure, on May 10, 2018, the company allotted 17.3 million ordinary shares of $1 each to GSG UK for nil consideration. The company subsequently cancelled 17.3 million ordinary shares for nil consideration, resulting in a reduction in the company's non-distributable capital reserve by $17.3 million and an increase in its profit and loss account in shareholder's funds by $17.3 million.

Note 22.

Other Equity Instruments

Other equity instruments consist of 8,300 unsecured Additional Tier 1 notes (AT1 notes) of $1 million each issued to GSG UK for a total consideration of $8.30 billion. These were issued in two tranches: 5,800 AT1 notes were issued in June 2017 and carry a non-cumulative fixed interest rate of 8.55% per annum; and 2,500 AT1 notes were issued in November 2018 and carry a non-cumulative fixed interest rate of 8.67% per annum. The non-cumulative fixed interest is payable at the company's discretion subject to certain solvency and regulatory conditions. The AT1 notes have no fixed maturity date and are not callable.

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

The company paid interest of $503 million on the AT1 notes on November 20, 2018 after assessing the applicable solvency and regulatory conditions. The amount recognised in shareholder's funds for the period ended November 2018 was $367 million, net of tax.

The company paid interest of $201 million on the AT1 notes on November 20, 2017 after assessing the applicable solvency and regulatory conditions. The amount recognised in shareholder's funds for the period ended December 2017 was $146 million, net of tax.

Note 23.

Dividends

The directors declared and paid an interim dividend of $2.50 billion on November 30, 2018 to GSG UK representing $4.30 per share.

The directors declared and paid interim dividends of $500 million on June 27, 2017 and $2.50 billion on June 28, 2017 to GSG UK, representing $0.86 per share and $4.30 per share, respectively.

Note 24.

Cash and Cash Equivalents

The table below presents cash and cash equivalents for the purpose of the statements of cash flows.

	As of	
$ in millions	**November 2018**	December 2017
Cash at bank and in hand	**$24,396**	$20,727
Overdrafts (see Note 19)	**(153)**	(73)
Total cash and cash equivalents	**$24,243**	$20,654

In the table above, cash at bank and in hand included cash that is not available for use by the company of $3.44 billion as of November 2018 and $3.20 billion as of December 2017.

Note 25.

Reconciliation of Cash Flows From Operating Activities

The table below presents the reconciliation of cash flows from operating activities.

	Period Ended	
$ in millions	**November 2018**	December 2017
Profit before taxation	**$ 3,030**	$ 2,091
Adjustments for		
Depreciation and amortisation (see Notes 6 and 13)	**58**	39
Loss on disposal of fixed assets	**9**	–
Credit for defined benefit plan (see Note 10)	**(4)**	(2)
Foreign exchange losses/(gains)	**1,432**	(1,938)
Share-based compensation expense	**249**	574
IFRS15 transition adjustment	**(7)**	–
Provisions for liabilities	**68**	10
Interest payable and similar expenses (see Note 9)	**237**	301
Cash generated before changes in operating assets and liabilities	**5,072**	1,075
Changes in operating assets		
Decrease in financial instruments owned	**46,135**	22,681
Decrease/(increase) in collateralised agreements	**1,486**	(20,220)
Decrease/(increase) in debtors	**8,944**	(4,505)
Changes in operating assets	**56,565**	(2,044)
Changes in operating liabilities		
Decrease in financial instruments sold, but not yet purchased	**(43,935)**	(23,989)
Increase/(decrease) in collateralised financings	**(23,302)**	27,259
Increase in other creditors	**11,627**	1,677
Changes in operating liabilities	**(55,610)**	4,947
Contributions paid to defined benefit plan (see Note 10)	**(47)**	(50)
Cash generated from operations	**$ 5,980**	$ 3,928

In the table above, cash generated from operations included interest paid of $6.76 billion for the period ended November 2018 and $4.02 billion for the period ended December 2017, and interest received of $6.36 billion for the period ended November 2018 and $4.59 billion for the period ended December 2017. The interest paid and interest received for the period ended December 2017 has increased by $1.45 billion to conform to the current period's presentation. See Note 4 for further information.

Note 26.

Financial Commitments and Contingencies

Commitments and Contingencies

The table below presents commitments and contingencies.

	As of	
$ in millions	**November 2018**	December 2017
Contingent and forward starting collateralised agreements	**$60,530**	$58,756
Forward starting collateralised financings	**27,155**	20,511
Other	**2,400**	3,691
Total	**$90,085**	$82,958

Commitments and contingencies included balances with group undertakings of $23.13 billion as of November 2018 and $51.13 billion as of December 2017.

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

Other commitments primarily relate to collateral commitments.

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

Leases

The company leases certain buildings under long-term non-cancellable lease agreements. Under these lease agreements, which are subject to renegotiation at various intervals specified in the leases, the company pays all insurance, maintenance and repairs of these properties.

The table below presents total future minimum rental payments under non-cancellable operating leases for each of the following periods.

	As of	
$ in millions	**November 2018**	December 2017
Less than one year	**$ 82**	$ 89
Between one and five years	**113**	177
Over five years	**6**	5
Total	**$201**	$271

Total future minimum sublease payments expected to be received under non-cancellable subleases were $21 million as of November 2018 and $36 as of December 2017.

Legal Proceedings

The company is involved in a number of judicial, regulatory and arbitration proceedings (including those described below) concerning matters arising in connection with the conduct of the company's business, however it is not practicable to reliably estimate the financial impact, if any, of these proceedings on the company, except as disclosed in Note 20.

1Malaysia Development Berhad (1MDB)-Related Matters. GS Group has received subpoenas and requests for documents and information from various governmental and regulatory bodies and self-regulatory organisations as part of investigations and reviews relating to financing transactions and other matters involving 1MDB, a sovereign wealth fund in Malaysia. Subsidiaries of Group Inc., including the company, acted as arrangers or purchasers of approximately $6.5 billion of debt securities of 1MDB.

On November 1, 2018, the U.S. Department of Justice (DOJ) unsealed a criminal information and guilty plea by Tim Leissner, a former participating managing director of GS Group, and an indictment against Ng Chong Hwa, a former managing director of GS Group, and Low Taek Jho. Leissner pleaded guilty to a two-count criminal information charging him with conspiring to launder money and conspiring to violate the U.S. Foreign Corrupt Practices Act's (FCPA) anti-bribery and internal accounting controls provisions. Low and Ng were charged in a three-count indictment with conspiring to launder money and conspiring to violate the FCPA's anti-bribery provisions. On August 28, 2018, Leissner's guilty plea was accepted by the U.S. District Court for the Eastern District of New York and Leissner was adjudicated guilty on both counts. Ng was also charged in this indictment with conspiring to violate the FCPA's internal accounting controls provisions. The charging documents state, among other things, that Leissner and Ng participated in a conspiracy to misappropriate proceeds of the 1MDB offerings for themselves and to pay bribes to various government officials to obtain and retain 1MDB business for GS Group. The plea and charging documents indicate that Leissner and Ng knowingly and willfully circumvented GS Group's system of internal accounting controls, in part by repeatedly lying to control personnel and internal committees that reviewed these offerings. The indictment of Ng and Low alleges that GS Group's system of internal accounting controls could be easily circumvented and that GS Group's business culture, particularly in Southeast Asia, at times prioritised consummation of deals ahead of the proper operation of its compliance functions. In addition, an unnamed participating managing director of GS Group is alleged to have been aware of the bribery scheme and to have agreed not to disclose this information to GS Group's compliance and control personnel. That employee, who was identified as a co-conspirator, has been put on administrative leave.

On December 17, 2018, the Attorney General of Malaysia issued a press statement that (i) criminal charges in Malaysia had been filed against the company, as the arranger of three offerings of debt securities of 1MDB, aggregating approximately $6.5 billion in principal amount, for alleged disclosure deficiencies in the offering documents relating to, among other things, the use of proceeds for the debt securities, (ii) two other subsidiaries of Group Inc., Leissner, Low and Jasmine Loo Ai Swan had been criminally charged in Malaysia, and Ng would be charged shortly, and (iii) prosecutors in Malaysia will seek criminal fines against the accused in excess of $2.7 billion plus the $600 million of fees received in connection with the debt offerings.

GS Group has received multiple demands, beginning in November 2018, from alleged shareholders under Section 220 of the Delaware General Corporation Law for books and records relating to, among other things, GS Group's involvement with 1MDB and its compliance procedures.

On February 19, 2019, a purported shareholder derivative action relating to 1MDB was filed in the U.S. District Court for the Southern District of New York against Group Inc. and the current directors and a former chairman and chief executive officer of GS Group. The complaint, which seeks unspecified damages and disgorgement, alleges breaches of fiduciary duties, including in connection with alleged insider trading by certain current and former directors, unjust enrichment, gross mismanagement and violations of the anti-fraud provisions of the Exchange Act, including in connection with Group Inc.'s common stock repurchases and solicitation of proxies.

On November 21, 2018, a summons with notice was filed in the New York Supreme Court, New York County, by International Petroleum Investment Company, which guaranteed certain debt securities issued by 1MDB, and its subsidiary Aabar Investments PJS. The summons with notice makes unspecified claims relating to 1MDB and seeks unspecified compensatory and punitive damages and other relief against Group Inc. and a number of Group Inc.'s subsidiaries, including the company, Leissner, Ng, and an employee of GS Group, as well as individuals (who are not employees of GS Group) formerly associated with the plaintiffs.

On December 20, 2018, a putative securities class action lawsuit was filed in the U.S. District Court for the Southern District of New York against Group Inc. and certain current and former officers of GS Group alleging violations of the anti-fraud provisions of the Exchange Act with respect to Group Inc.'s disclosures concerning 1MDB and seeking unspecified damages.

GS Group is cooperating with the DOJ and all other governmental and regulatory investigations relating to 1MDB. Proceedings by the DOJ or other governmental or regulatory authorities could result in the imposition of significant fines, penalties and other sanctions against GS Group, including restrictions on GS Group's activities.

Interest Rate Swap Antitrust Litigation. The company is among the defendants named in a putative antitrust class action relating to the trading of interest rate swaps, filed in November 2015 and consolidated in the U.S. District Court for the Southern District of New York. The company is also among the defendants named in two antitrust actions relating to the trading of interest rate swaps, commenced in April 2016 and June 2018, respectively, in the U.S. District Court for the Southern District of New York by three operators of swap execution facilities and certain of their affiliates. These actions have been consolidated for pretrial proceedings. The complaints generally assert claims under federal antitrust law and state common law in connection with an alleged conspiracy among the defendants to preclude exchange trading of interest rate swaps. The complaints in the individual actions also assert claims under state antitrust law. The complaints seek declaratory and injunctive relief, as well as treble damages in an unspecified amount.

Defendants moved to dismiss the class and the first individual action on January 20, 2017. On July 28, 2017, the district court issued a decision dismissing the state common law claims asserted by the plaintiffs in the first individual action and otherwise limiting the state common law claim in the putative class action and the antitrust claims in both actions to the period from 2013 to 2016. On May 30, 2018, plaintiffs in the putative class action filed a third consolidated amended complaint, adding allegations as to the surviving claims. On October 26, 2018, plaintiffs in the putative class action filed a motion for leave to file a fourth amended complaint. On November 20, 2018, the court granted in part and denied in part the defendants' motion to dismiss the second individual action, dismissing the state common law claims for unjust enrichment and tortious interference but denying dismissal of the federal and state antitrust claims.

Credit Default Swap Antitrust Litigation. The company is among the defendants named in an antitrust action relating to the trading of credit default swaps filed in the U.S. District Court for the Southern District of New York on June 8, 2017 by the operator of a swap execution facility and certain of its affiliates. The complaint generally asserts claims under federal and state antitrust laws and state common law in connection with an alleged conspiracy among the defendants to preclude trading of credit default swaps on the plaintiffs' swap execution facility. The complaint seeks declaratory and injunctive relief, as well as treble damages in an unspecified amount. Defendants moved to dismiss on September 11, 2017.

Commodities-Related Litigation. The company is among the defendants named in putative class actions relating to trading in platinum and palladium, filed beginning on November 25, 2014 and most recently amended on May 15, 2017, in the U.S. District Court for the Southern District of New York. The amended complaint generally alleges that the defendants violated federal antitrust laws and the Commodity Exchange Act in connection with an alleged conspiracy to manipulate a benchmark for physical platinum and palladium prices and seek declaratory and injunctive relief, as well as treble damages in an unspecified amount. Defendants moved to dismiss the third consolidated amended complaint on July 21, 2017.

Regulatory Investigations and Reviews and Related Litigation. Group Inc. and certain of its affiliates, including the company, are subject to a number of other investigations and reviews by, and in some cases have received subpoenas and requests for documents and information from, various governmental and regulatory bodies and self-regulatory organisations and litigation relating to various matters relating to GS Group's businesses and operations, including:

- The 2008 financial crisis;
- The public offering process;
- Investment management and financial advisory services;
- Conflicts of interest;
- Transactions involving government-related financings and other matters;

- The offering, auction, sales, trading and clearance of corporate and government securities, currencies, commodities and other financial products and related sales and other communications and activities, as well as GS Group's supervision and controls relating to such activities, including compliance with applicable short sale rules, algorithmic, high-frequency and quantitative trading, futures trading, options trading, when-issued trading, transaction reporting, technology systems and controls, securities lending practices, trading and clearance of credit derivative instruments and interest rate swaps, commodities activities and metals storage, private placement practices, allocations of and trading in securities, and trading activities and communications in connection with the establishment of benchmark rates, such as currency rates;
- Compliance with the U.K. Bribery Act and the FCPA;
- Hiring and compensation practices;
- System of risk management and controls; and
- Insider trading, the potential misuse and dissemination of material non-public information regarding corporate and governmental developments and the effectiveness of insider trading controls and information barriers.

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

Note 27.

Financial Risk Management and Capital Management

Certain disclosures in relation to the company's financial risk management and capital management have been presented alongside other risk management and regulatory information in Part I of this annual report and are identified as audited, where relevant.

Note 28.

Financial Assets and Financial Liabilities

Financial Assets and Financial Liabilities by Category

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

	Financial Assets		
$ in millions	Mandatorily at fair value	Amortised cost	Total
As of November 2018			
Financial instruments	**$594,129**	**$ –**	**$594,129**
Collateralised agreements	**146,767**	**56,567**	**203,334**
Debtors	**790**	**63,697**	**64,487**
Cash at bank and in hand	**–**	**24,396**	**24,396**
Total financial assets	**$741,686**	**$144,660**	**$886,346**

$ in millions	Held for trading	Designated at fair value	Loans and receivables	Total
As of December 2017				
Financial instruments owned	$640,264	$ –	$ –	$640,264
Collateralised agreements	–	140,360	64,460	204,820
Debtors	–	653	72,725	73,378
Cash at bank and in hand	–	–	20,727	20,727
Total financial assets	$640,264	$141,013	$157,912	$939,189

	Financial Liabilities			
$ in millions	Held for trading	Designated at fair value	Amortised cost	Total
As of November 2018				
Amounts falling due within one year				
Financial instruments sold, but not yet purchased	**$545,987**	**$ –**	**$ –**	**$545,987**
Collateralised financings	**–**	**97,865**	**43,975**	**141,840**
Other creditors	**–**	**8,694**	**87,992**	**96,686**
Total	**545,987**	**106,559**	**131,967**	**784,513**
Amounts falling due after more than one year				
Collateralised financings	**–**	**10,305**	**–**	**10,305**
Other creditors	**–**	**42,236**	**15,859**	**58,095**
Total	**–**	**52,541**	**15,859**	**68,400**
Total financial liabilities	**$545,987**	**$159,100**	**$147,826**	**$852,913**
As of December 2017				
Amounts falling due within one year				
Financial instruments sold, but not yet purchased	$589,922	$ –	$ –	$589,922
Collateralised financings	–	113,947	44,122	158,069
Other creditors	–	7,784	95,433	103,217
Total	589,922	121,731	139,555	851,208
Amounts falling due after more than one year				
Collateralised financings	–	17,378	–	17,378
Other creditors	–	21,046	18,684	39,730
Total	–	38,424	18,684	57,108
Total financial liabilities	$589,922	$160,155	$158,239	$908,316

In the tables above:

- Financial assets have been prepared under IFRS 9 as of November 2018 and under IAS 39 as of December 2017. See Note 2 for further information.
- Financial instruments owned included derivative instruments designated as hedges of $26 million as of November 2018 and $38 million as of December 2017.

Fair Value Hierarchy

The fair value of a financial instrument is the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Financial assets are marked to bid prices and financial liabilities are marked to offer prices. Fair value measurements do not include transaction costs. The company measures certain financial assets and financial liabilities as a portfolio (i.e., based on its net exposure to market and/or credit risks).

U.K. GAAP has a three-level hierarchy for disclosure of fair value measurements. This hierarchy prioritises inputs to the valuation techniques used to measure fair value, giving the highest priority to level 1 inputs and the lowest priority to level 3 inputs. A financial instrument's level in the hierarchy is based on the lowest level of input that is significant to its fair value measurement.

The fair value hierarchy is as follows:

Level 1. Inputs are unadjusted quoted prices in active markets to which the company had access at the measurement date for identical, unrestricted assets or liabilities.

Level 2. Inputs to valuation techniques are observable, either directly or indirectly.

Level 3. One or more inputs to valuation techniques are significant and unobservable.

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

Valuation Techniques and Significant Inputs

Cash Instruments. Cash instruments include government and agency obligations, corporate debt instruments, equity securities, and other non-derivative financial instruments owned and financial instruments sold, but not yet purchased. Valuation techniques and significant inputs for each level of the fair value hierarchy include:

Level 1 Cash Instruments

Level 1 cash instruments are valued using quoted prices for identical unrestricted instruments in active markets. The company defines active markets for equity instruments based on the average daily trading volume both in absolute terms and relative to the market capitalisation for the instrument. The company defines active markets for debt instruments based on both the average daily trading volume and the number of days with trading activity.

Level 2 Cash Instruments

Level 2 cash instruments can be verified to quoted prices, recent trading activity for identical or similar instruments, broker or dealer quotations or alternative pricing sources with reasonable levels of price transparency. Consideration is given to the nature of the quotations (e.g., indicative or firm) and the relationship of recent market activity to the prices provided from alternative pricing sources.

Valuation adjustments are typically made to level 2 cash instruments (i) if the cash instrument is subject to transfer restrictions and/or (ii) for other premiums and liquidity discounts that a market participant would require to arrive at fair value. Valuation adjustments are generally based on market evidence.

Level 3 Cash Instruments

Level 3 cash instruments have one or more significant valuation inputs that are not observable. Absent evidence to the contrary, level 3 cash instruments are initially valued at transaction price, which is considered to be the best initial estimate of fair value. Subsequently, the company uses other methodologies to determine fair value, which vary based on the type of instrument. Valuation inputs and assumptions are changed when corroborated by substantive observable evidence, including values realised on sales of financial assets.

Valuation techniques of level 3 cash instruments vary by instrument, but are generally based on discounted cash flow techniques. The valuation techniques and the nature of significant inputs used to determine the fair values of each type of level 3 cash instrument are described below:

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

Derivative Instruments. Derivatives may be traded on an exchange (exchange-traded) or they may be privately negotiated contracts, which are usually referred to as OTC derivatives. Certain of the company's OTC derivatives are cleared and settled through central clearing counterparties (OTC-cleared), while others are bilateral contracts between two counterparties (bilateral OTC).

The company's level 2 and level 3 derivatives are valued using derivative pricing models (e.g., discounted cash flow models, correlation models, and models that incorporate option pricing methodologies, such as Monte Carlo simulations). Price transparency of derivatives can generally be characterised by product type, as described below.

- **Interest Rate.** In general, the key inputs used to value interest rate derivatives are transparent, even for most long-dated contracts. Interest rate swaps and options denominated in the currencies of leading industrialised nations are characterised by high trading volumes and tight bid/offer spreads. Interest rate derivatives that reference indices, such as an inflation index, or the shape of the yield curve (e.g., 10-year swap rate vs. 2-year swap rate) are more complex, but the key inputs are generally observable.
- **Credit.** Price transparency for credit default swaps, including both single names and baskets of credits, varies by market and underlying reference entity or obligation. Credit default swaps that reference indices, large corporates and major sovereigns generally exhibit the most price transparency. For credit default swaps with other underliers, price transparency varies based on credit rating, the cost of borrowing the underlying reference obligations, and the availability of the underlying reference obligations for delivery upon the default of the issuer. Credit default swaps that reference loans, asset-backed securities and emerging market debt instruments tend to have less price transparency than those that reference corporate bonds. In addition, more complex credit derivatives, such as those sensitive to the correlation between two or more underlying reference obligations or to secured funding spreads, generally have less price transparency.
- **Currency.** Prices for currency derivatives based on the exchange rates of leading industrialised nations, including those with longer tenors, are generally transparent. The primary difference between the price transparency of developed and emerging market currency derivatives is that emerging markets tend to be observable for contracts with shorter tenors.

- **Equity.** Price transparency for equity derivatives varies by market and underlier. Options on indices and the common stock of corporates included in major equity indices exhibit the most price transparency. Equity derivatives generally have observable market prices, except for contracts with long tenors or reference prices that differ significantly from current market prices. More complex equity derivatives, such as those sensitive to the correlation between two or more individual stocks, generally have less price transparency.

Liquidity is essential to observability of all product types. If transaction volumes decline, previously transparent prices and other inputs may become unobservable. Conversely, even highly structured products may at times have trading volumes large enough to provide observability of prices and other inputs.

Level 1 Derivatives

Level 1 derivatives include short-term contracts for future delivery of securities when the underlying security is a level 1 instrument, and exchange-traded derivatives if they are actively traded and are valued at their quoted market price.

Level 2 Derivatives

Level 2 derivatives include OTC derivatives for which all significant valuation inputs are corroborated by market evidence and exchange-traded derivatives that are not actively traded and/or that are valued using models that calibrate to market-clearing levels of OTC derivatives. In evaluating the significance of a valuation input, the company considers, among other factors, a portfolio's net risk exposure to that input.

The selection of a particular model to value a derivative depends on the contractual terms of and specific risks inherent in the instrument, as well as the availability of pricing information in the market. For derivatives that trade in liquid markets, model selection does not involve significant management judgement because outputs of models can be calibrated to market-clearing levels.

Valuation models require a variety of inputs, such as contractual terms, market prices, yield curves, discount rates (including those derived from interest rates on collateral received and posted as specified in credit support agreements for collateralised derivatives), credit curves, measures of volatility and correlations of such inputs. Significant inputs to the valuations of level 2 derivatives can be verified to market transactions, broker or dealer quotations or other alternative pricing sources with reasonable levels of price transparency. Consideration is given to the nature of the quotations (e.g., indicative or firm) and the relationship of recent market activity to the prices provided from alternative pricing sources.

Level 3 Derivatives

Level 3 derivatives are valued using models which utilise observable level 1 and/or level 2 inputs, as well as unobservable level 3 inputs. Unobservable inputs include certain correlations, illiquid credit and secured funding spreads, recovery rates and certain equity and interest rate volatilities.

Subsequent to the initial valuation of a level 3 derivative, the company updates the level 1 and level 2 inputs to reflect observable market changes and any resulting gains and losses are classified in level 3. Level 3 inputs are changed when corroborated by evidence such as similar market transactions, third-party pricing services and/or broker or dealer quotations or other empirical market data. In circumstances where the company cannot verify the model value by reference to market transactions, it is possible that a different valuation model could produce a materially different estimate of fair value. See below for further information about significant unobservable inputs used in the valuation of level 3 derivatives.

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

Valuation Adjustments

Valuation adjustments are integral to determining the fair value of derivative portfolios and are used to adjust the mid-market valuations produced by derivative pricing models to the appropriate exit price valuation. These adjustments incorporate bid/offer spreads, the cost of liquidity, credit valuation adjustments and funding valuation adjustments, which account for the credit and funding risk inherent in the uncollateralised portion of derivative portfolios. The company also makes funding valuation adjustments to collateralised derivatives where the terms of the agreement do not permit the company to deliver or repledge collateral received. Market-based inputs are generally used when calibrating valuation adjustments to market-clearing levels.

In addition, for derivatives that include significant unobservable inputs, the company makes model or exit price adjustments to account for the valuation uncertainty present in the transaction.

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

- **Resale and Repurchase Agreements and Securities Borrowed and Loaned.** The significant inputs to the valuation of resale and repurchase agreements and securities borrowed and loaned are funding spreads, the amount and timing of expected future cash flows and interest rates.
- **Debtors.** Debtors measured at fair value primarily consist of secured lending and prepaid commodity contracts. The significant inputs to the valuation of such receivables are commodity prices, interest rates, the amount and timing of expected future cash flows and funding spreads.
- **Other Secured Financings.** The significant inputs to the valuation of secured debt securities issued and other borrowings measured at fair value are the amount and timing of expected future cash flows, interest rates, funding spreads, the fair value of the collateral delivered by the company (which is determined using the amount and timing of expected future cash flows, market prices, market yields and recovery assumptions) and the frequency of additional collateral calls.
- **Other Creditors.** The significant inputs to the valuation of unsecured other creditors measured at fair value are the amount and timing of expected future cash flows, interest rates, the credit spreads of GS Group, as well as commodity prices in the case of prepaid commodity contracts. The inputs used to value the embedded derivative component of hybrid financial instruments are consistent with the inputs used to value the company's other derivative instruments.

Fair Value of Financial Assets and Financial Liabilities by Level

The table below presents, by level within the fair value hierarchy, financial assets and financial liabilities measured at fair value on a recurring basis.

$ in millions	Level 1	Level 2	Level 3	Total
As of November 2018				
Financial Assets				
Cash instruments	**$53,205**	**$ 27,278**	**$ 1,083**	**$ 81,566**
Derivative instruments	**17**	**508,315**	**4,231**	**512,563**
Financial instruments owned	**53,222**	**535,593**	**5,314**	**594,129**
Collateralised agreements	**–**	**146,767**	**–**	**146,767**
Debtors	**–**	**790**	**–**	**790**
Total financial assets	**$53,222**	**$683,150**	**$ 5,314**	**$741,686**
Financial Liabilities				
Amounts falling due within one year				
Cash instruments	**$42,951**	**$ 4,637**	**$ 12**	**$ 47,600**
Derivative instruments	**21**	**495,993**	**2,373**	**498,387**
Financial instruments sold, but not yet purchased	**42,972**	**500,630**	**2,385**	**545,987**
Collateralised financings	**–**	**96,948**	**917**	**97,865**
Other creditors	**–**	**6,272**	**2,422**	**8,694**
Total	**42,972**	**603,850**	**5,724**	**652,546**
Amounts falling due after more than one year				
Collateralised financings	**–**	**10,286**	**19**	**10,305**
Other creditors	**–**	**35,105**	**7,131**	**42,236**
Total	**–**	**45,391**	**7,150**	**52,541**
Total financial liabilities	**$42,972**	**$649,241**	**$12,874**	**$705,087**
Net derivative instruments	**$ (4)**	**$ 12,322**	**$ 1,858**	**$ 14,176**
As of December 2017				
Financial Assets				
Cash instruments	$51,047	$ 22,437	$ 571	$ 74,055
Derivative instruments	5	562,731	3,473	566,209
Financial instruments owned	51,052	585,168	4,044	640,264
Collateralised agreements	–	140,360	–	140,360
Debtors	–	653	–	653
Total financial assets	$51,052	$726,181	$ 4,044	$781,277
Financial Liabilities				
Amounts falling due within one year				
Cash instruments	$30,201	$ 3,588	$ 10	$ 33,799
Derivative instruments	22	553,830	2,271	556,123
Financial instruments sold, but not yet purchased	30,223	557,418	2,281	589,922
Collateralised financings	–	113,314	633	113,947
Other creditors	–	5,896	1,888	7,784
Total	30,223	676,628	4,802	711,653
Amounts falling due after more than one year				
Collateralised financings	–	17,369	9	17,378
Other creditors	–	15,050	5,996	21,046
Total	–	32,419	6,005	38,424
Total financial liabilities	$30,223	$709,047	$10,807	$750,077
Net derivative instruments	$ (17)	$ 8,901	$ 1,202	$ 10,086

Significant Unobservable Inputs Used in Level 3 Fair Value Measurements

Cash Instruments. The company had level 3 cash instrument assets of $1.08 billion as of November 2018 and $571 million as of December 2017. Level 3 cash instrument liabilities were not material.

The table below presents the amount of level 3 cash instrument assets, and ranges and weighted averages of significant unobservable inputs used to value level 3 cash instrument assets.

	Level 3 Cash Instruments Assets and Range of Significant Unobservable Inputs (Weighted Average) as of	
$ in millions	**November 2018**	December 2017
Mortgages and other asset-backed loans and securities		
Level 3 assets	**$171**	$144
Yield	**2.4% to 16.5% (6.5%)**	2.3% to 19.4% (6.9%)
Recovery rate	**19.0% to 75.0% (50.0%)**	37.9% to 89.0% (76.9%)
Duration (years)	**0.5 to 13.4 (5.1)**	0.7 to 14.0 (4.2)
Corporate debt instruments and government and agency obligations		
Level 3 assets	**$841**	$365
Yield	**0.7% to 10.5% (5.2%)**	3.6% to 13.9% (7.1%)
Recovery rate	**0.0% to 78.0% (51.8%)**	0.0% to 74.0% (44.5%)
Duration (years)	**0.5 to 13.2 (2.6)**	0.5 to 5.4 (2.3)
Equity securities		
Level 3 assets	**$71**	$62
Multiples	**4.1x to 11.0x (5.4x)**	3.0x to 3.0x (3.0x)

In the table above:

- Ranges represent the significant unobservable inputs that were used in the valuation of each type of cash instrument.
- Weighted averages are calculated by weighting each input by the relative fair value of the cash instruments.
- The ranges and weighted averages of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one cash instrument. For example, the highest yield for mortgages and other asset-backed loans and securities is appropriate for valuing a specific mortgage but may not be appropriate for valuing any other mortgages. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 cash instruments.
- Increases in yield or duration used in the valuation of level 3 cash instruments would have resulted in a lower fair value measurement, while increases in recovery rate or multiples would have resulted in a higher fair value measurement as of both November 2018 and December 2017. Due to the distinctive nature of each level 3 cash instrument, the interrelationship of inputs is not necessarily uniform within each product type.
- Mortgages and other asset-backed loans and securities and corporate debt instruments and government and agency obligations are valued using discounted cash flows, and equity securities are valued using market comparables and discounted cash flows.
- The fair value of any one instrument may be determined using multiple valuation techniques. For example, market comparables and discounted cash flows may be used together to determine fair value. Therefore, the level 3 balance encompasses both of these techniques.

Derivative Instruments. The company had net level 3 derivative instruments of $1.86 billion as of November 2018 and $1.20 billion as of December 2017.

The table below presents the amount of net level 3 derivative instruments, and ranges, averages and medians of significant unobservable inputs used to value interest rates, credit, currencies and equities derivative instruments.

The company's net level 3 financial instruments relating to commodities derivatives was $2 million as of November 2018 and $nil as of December 2017 for which the range of significant unobservable inputs has not been disclosed as the amounts are not material.

	Net Level 3 Derivative Instruments and Range of Significant Unobservable Inputs (Average/Median) as of	
$ in millions	**November 2018**	December 2017
Interest rates	**$76**	$51
Correlation	**71% to 72% (72%/72%)**	79% to 95% (87%/87%)
Volatility (bps)	**64 to 143 (84/78)**	75 to 138 (107/107)
Credit	**$2,003**	$1,794
Correlation	**N/A**	28% to 84% (61%/60%)
Credit spreads (bps)	**2 to 589 (141/104)**	1 to 505 (87/56)
Upfront credit points	**1 to 46 (22/22)**	2 to 55 (36/53)
Recovery rates	**25% to 45% (37%/40%)**	22% to 73% (70%/73%)
Currencies	**$(115)**	$(110)
Correlation	**5% to 32% (18%/15%)**	10% to 33% (22%/21%)
Equities	**$(108)**	$(533)
Correlation	**(63)% to 98% (47%/53%)**	(36)% to 94% (53%/65%)
Volatility	**4% to 81% (17%/13%)**	4% to 63% (20%/20%)

In the table above:

- Net derivative assets are shown as positive amounts and net derivative liabilities are shown as negative amounts.
- Ranges represent the significant unobservable inputs that were used in the valuation of each type of derivative.

- Averages represent the arithmetic average of the inputs and are not weighted by the relative fair value or notional of the respective financial instruments. An average greater than the median indicates that the majority of inputs are below the average.
- The ranges, averages and medians of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one derivative. For example, the highest correlation for interest rate derivatives is appropriate for valuing a specific interest rate derivative but may not be appropriate for valuing any other interest rate derivative. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 derivatives.
- Interest rates, currencies and equities derivatives are valued using option pricing models, and credit derivatives are valued using option pricing, correlation and discounted cash flow models.
- The fair value of any one instrument may be determined using multiple valuation techniques. For example, option pricing models and discounted cash flows models are typically used together to determine fair value. Therefore, the level 3 balance encompasses both of these techniques.
- Correlation was not significant to the valuation of level 3 credit derivatives as of November 2018.
- Correlation within currencies and equities includes cross-product type correlation.

Range of Significant Unobservable Inputs

The following is information about the ranges of significant unobservable inputs used to value the company's level 3 derivative instruments:

- **Correlation.** Ranges for correlation cover a variety of underliers both within one product type (e.g., equity index and equity single stock names) and across product types (e.g., correlation of an equity and a currency), as well as across regions.
- **Volatility.** Ranges for volatility cover numerous underliers across a variety of markets, maturities and strike prices. For example, volatility of equity indices is generally lower than volatility of single stocks.
- **Credit spreads, upfront credit points and recovery rates.** The ranges for credit spreads, upfront credit points and recovery rates cover a variety of underliers (index and single names), regions, sectors, maturities and credit qualities (high-yield and investment-grade) and also includes secured funding spreads. The broad range of this population gives rise to the width of the ranges of significant unobservable inputs.

Sensitivity of Fair Value Measurement to Changes in Significant Unobservable Inputs

The following is a description of the directional sensitivity of the company's level 3 fair value measurements, as of both November 2018 and December 2017, to changes in significant unobservable inputs, in isolation:

- **Correlation.** In general, for contracts where the holder benefits from the consistent directional performance of the underlying asset or index prices (e.g., interest rates, credit spreads, foreign exchange rates, inflation rates and equity prices), an increase in correlation results in a higher fair value measurement.
- **Volatility.** In general, for purchased options, an increase in volatility results in a higher fair value measurement.
- **Credit spreads, upfront credit points and recovery rates.** In general, the fair value of purchased credit protection increases as credit spreads or upfront credit points increase or recovery rates decrease, and the fair value of secured funding capacity increases as secured funding spreads increase. Credit spreads, upfront credit points and recovery rates are strongly related to distinctive risk factors of the underlying reference obligations, which include reference entity-specific factors such as leverage, volatility and industry, market-based risk factors, such as borrowing costs or liquidity of the underlying reference obligation, and macroeconomic conditions.

Due to the distinctive nature of each of the company's level 3 derivatives, the interrelationship of inputs is not necessarily uniform within each product type.

Other Financial Assets and Financial Liabilities. Significant unobservable inputs of other financial assets and financial liabilities include:

- **Resale and Repurchase Agreements and Securities Borrowed and Loaned.** As of both November 2018 and December 2017, the company had no level 3 resale agreements, securities borrowed or securities loaned. As of both November 2018 and December 2017, level 3 repurchase agreements were not material.
- **Debtors.** As of both November 2018 and December 2017, level 3 debtors were nil.
- **Other Secured Financings.** As of both November 2018 and December 2017, the significant unobservable inputs used to value level 3 other secured financings are incorporated into the derivative instruments and cash instruments disclosures related to unobservable inputs. See “Cash Instruments” and “Derivative Instruments” above.
- **Other Creditors.** As of both November 2018 and December 2017, the significant unobservable inputs used to value level 3 other creditors are incorporated into derivative instruments and cash instruments disclosures related to unobservable inputs. See “Cash Instruments” and “Derivative Instruments” above.

Transfers Between Level 1 and Level 2 of the Fair Value Hierarchy

During the period ended November 2018 and period ended December 2017, there were no significant transfers between level 1 and level 2 financial assets and financial liabilities measured at fair value on a recurring basis.

Fair Value Financial Assets and Financial Liabilities Valued Using Techniques That Incorporate Unobservable Inputs

The fair value of financial assets and financial liabilities may be determined in whole or part using a valuation technique based on assumptions that are not supported by prices from observable current market transactions in the same instrument or based on available observable market data and changing these assumptions will change the resultant estimate of fair value. The potential impact of using reasonable possible alternative assumptions for the valuations, including significant unobservable inputs, has been quantified as approximately $356 million as of November 2018 and $259 million as of December 2017, for favourable changes, and $240 million as of November 2018 and $230 million as of December 2017, for unfavourable changes. In determining reasonably possible alternative unfavourable assumptions, a detailed business and position level review has been performed to identify and quantify instances where potential uncertainty exists. This has taken into account the positions’ fair value as compared to the range of available market information. As of November 2018 and December 2017, the impact for favourable changes was primarily driven by changes in the assumptions around secured funding spreads and valuation adjustments in equity and fixed income derivatives, and the impact for unfavourable changes was primarily driven by changes in the assumptions around secured funding spreads, volatility and correlation inputs.

The table below presents the amounts not recognised in the profit and loss account relating to the difference between the fair value of financial assets and financial liabilities at fair value through profit or loss at initial recognition (the transaction price) and the amounts determined at initial recognition using the valuation techniques (day 1 P&L).

	Period Ended	
$ in millions	**November 2018**	December 2017
Beginning balance	**$161**	$149
New transactions	**92**	92
Amounts recognised in the profit and loss account during the period	**(107)**	(80)
Ending balance	**$146**	$161

Level 3 Rollforward

The table below presents a summary of the changes in fair value for all level 3 financial assets and financial liabilities measured at fair value on a recurring basis.

	Period Ended	
$ in millions	**November 2018**	December 2017
Total financial assets		
Beginning balance	**$ 4,044**	$ 5,152
Gains/(losses)	**688**	594
Purchases	**647**	383
Sales	**(223)**	(520)
Settlements	**(620)**	(1,223)
Transfers into level 3	**974**	188
Transfers out of level 3	**(196)**	(530)
Ending balance	**$ 5,314**	$ 4,044
Total financial liabilities		
Beginning balance	**$(10,807)**	$ (9,628)
Gains/(losses)	**468**	(1,439)
Purchases	**16**	6
Sales	**(8,159)**	(5,285)
Settlements	**5,838**	4,483
Transfers into level 3	**(641)**	(39)
Transfers out of level 3	**411**	1,095
Ending balance	**$(12,874)**	$(10,807)

In the table above:

- Financial assets relate to financial instruments owned.
- If a financial asset or financial liability was transferred into level 3 during a reporting period, its entire gain or loss for the period is classified in level 3. For level 3 financial assets, increases are shown as positive amounts, while decreases are shown as negative amounts. For level 3 financial liabilities, increases are shown as negative amounts, while decreases are shown as positive amounts.
- Transfers between levels of the fair value hierarchy are recognised at the beginning of the reporting period in which they occur. Accordingly, the tables do not include gains or losses for level 3 financial assets and financial liabilities that were transferred out of level 3 prior to the end of the period.
- Level 3 financial assets and financial liabilities are frequently economically hedged with level 1 and level 2 financial assets and financial liabilities. Accordingly, level 3 gains or losses that are reported for a particular class of financial asset or financial liability can be partially offset by gains or losses attributable to level 1 or level 2 in the same class of financial asset or financial liability or gains or losses attributable to level 1, level 2 or level 3 in a different class of financial asset or financial liability. As a result, gains or losses included in the level 3 rollforward do not necessarily represent the overall impact on the company's results of operations, liquidity or capital resources.
- The net gains on level 3 financial assets for the period ended November 2018 and period ended December 2017 are reported in "Net revenues" in the profit and loss account.
- The net gains on level 3 financial liabilities of $468 million for the period ended November 2018 included gains of $339 million reported in "Net revenues" in the profit and loss account and gains of $129 million reported in "Debt valuation adjustment" in the statements of comprehensive income. The net losses on level 3 financial liabilities of $1.44 billion for the period ended December 2017 included losses of $1.34 billion reported in "Net revenues" in the profit and loss account and losses of $100 million reported in "Debt valuation adjustment" in the statements of comprehensive income.

The table below disaggregates, by the balance sheet line items, the information for financial liabilities included in the summary table above.

	Period Ended	
$ in millions	**November 2018**	December 2017
Financial instruments sold, but not yet purchased		
Beginning balance	**$(2,281)**	$(2,228)
Gains/(losses)	**(275)**	(653)
Purchases	**16**	6
Sales	**(424)**	(237)
Settlements	**665**	465
Transfers into level 3	**(244)**	(18)
Transfers out of level 3	**158**	384
Ending balance	**$(2,385)**	$(2,281)
Collateralised financings		
Beginning balance	**$ (642)**	$ (536)
Gains/(losses)	**82**	(26)
Sales	**(393)**	(147)
Settlements	**17**	67
Ending balance	**$ (936)**	$ (642)
Other creditors		
Beginning balance	**$(7,884)**	$(6,864)
Gains/(losses)	**661**	(760)
Sales	**(7,342)**	(4,901)
Settlements	**5,156**	3,951
Transfers into level 3	**(397)**	(21)
Transfers out of level 3	**253**	711
Ending balance	**$(9,553)**	$(7,884)

Transfers Between Level 2 and Level 3 of the Fair Value Hierarchy

Period Ended November 2018. Transfers into level 3 for financial assets and liabilities primarily reflected transfers of certain currency products from level 2, principally due to reduced transparency of certain modelling assumptions, and transfers of certain credit products from level 2, principally due to reduced transparency of certain credit spread and yield inputs. The reduced transparency was a result of a lack of market evidence.

Transfers out of level 3 primarily reflected transfers of certain equity products to level 2, principally due to increased transparency of certain equity volatility and correlation inputs. The increased transparency was a result of an increase in the availability of market evidence.

Period Ended December 2017. Transfers into level 3 for financial assets and liabilities primarily reflected transfers of certain credit products from level 2, principally due to reduced transparency of certain credit spread and yield inputs as a result of a lack of market evidence.

Transfers out of level 3 primarily reflected transfers of certain credit products to level 2 principally due to increased transparency of certain spread and yield inputs and transfers of certain equity products to level 2, principally due to increased transparency of certain equity volatility and correlation inputs. The increased transparency was a result of an increase in the availability of market evidence.

Fair Value of Financial Assets and Financial Liabilities Not Measured at Fair Value

The company had current financial assets of $144.66 billion as of November 2018 and $157.91 billion as of December 2017, and current financial liabilities of $131.97 billion as of November 2018 and $139.56 billion as of December 2017 that are not measured at fair value. Given the short-term nature of these instruments, their carrying amounts in the balance sheet are a reasonable approximation of fair value.

As of November 2018 and December 2017, the company had $15.86 billion and $18.68 billion, respectively, of financial liabilities that are due after more than one year that are not measured at fair value which predominantly relate to long-term intercompany borrowings. The interest rates of these borrowings are variable in nature and approximate prevailing market interest rates for instruments with similar terms and characteristics. As such, their carrying amounts in the balance sheet are a reasonable approximation of fair value.

Maturity of Financial Liabilities

The table below presents a summary of the cash flows of the company's financial liabilities by contractual maturity except for financial instruments sold, but not yet purchased, which are classified as trading/on demand.

	As of	
$ in millions	**November 2018**	December 2017
Trading/on demand	**$662,378**	$762,281
Less than 1 month	**112,088**	91,555
1 – 3 months	**26,951**	20,888
3 months – 1 year	**47,289**	39,779
1 – 5 years	**50,389**	41,071
Greater than 5 years	**20,483**	18,396
Total	**$919,578**	$973,970

The tables below present an analysis of the cash flows of the company's financial liabilities by contractual maturity except for financial instruments sold, but not yet purchased, which are classified as trading/on demand.

$ in millions	Financial instruments sold, but not yet purchased	Collateralised financings	Other creditors	Total
As of November 2018				
Amounts falling due within one year				
Trading/on demand	**$545,987**	**$ 45,078**	**$ 69,014**	**$660,079**
Less than 1 month	**–**	**50,016**	**1,652**	**51,668**
1 – 3 months	**–**	**23,778**	**2,799**	**26,577**
3 months – 1 year	**–**	**22,974**	**23,394**	**46,368**
1 – 5 years	**–**	**–**	**–**	**–**
Greater than 5 years	**–**	**–**	**–**	**–**
Total	**545,987**	**$141,846**	**$ 96,859**	**$784,692**
Amounts falling due after more than one year				
Trading/on demand	**$ –**	**$ –**	**$ –**	**$ –**
Less than 1 month	**–**	**1**	**80**	**81**
1 – 3 months	**–**	**–**	**162**	**162**
3 months – 1 year	**–**	**–**	**860**	**860**
1 – 5 years	**–**	**8,026**	**42,149**	**50,175**
Greater than 5 years	**–**	**2,281**	**18,196**	**20,477**
Total	**–**	**$ 10,308**	**$ 61,447**	**$ 71,755**
Total – on balance sheet	**$545,987**	**$152,154**	**$158,306**	**$856,447**

$ in millions	Contingent and forward starting collateralised agreements	Operating leases	Other	Total
As of November 2018				
Trading/on demand	**$ –**	**$ –**	**$ 2,299**	**$ 2,299**
Less than 1 month	**60,332**	**7**	**–**	**60,339**
1 – 3 months	**198**	**14**	**–**	**212**
3 months – 1 year	**–**	**61**	**–**	**61**
1 – 5 years	**–**	**113**	**101**	**214**
Greater than 5 years	**–**	**6**	**–**	**6**
Total – off balance sheet	**$ 60,530**	**$ 201**	**$ 2,400**	**$ 63,131**

$ in millions	Financial Instruments sold, but not yet purchased	Collateralised financings	Other creditors	Total
As of December 2017				
Amounts falling due within one year				
Trading/on demand	$589,922	$ 91,724	$ 76,361	$758,007
Less than 1 month	–	30,915	2,768	33,683
1 – 3 months	–	19,306	1,186	20,492
3 months – 1 year	–	16,134	23,139	39,273
1 – 5 years	–	–	–	–
Greater than 5 years	–	–	–	–
Total	$589,922	$158,079	$103,454	$851,455
Amounts falling due after more than one year				
Trading/on demand	$ –	$ –	$ –	$ –
Less than 1 month	–	–	2	2
1 – 3 months	–	–	72	72
3 months – 1 year	–	–	438	438
1 – 5 years	–	15,999	24,895	40,894
Greater than 5 years	–	1,379	17,012	18,391
Total	$ –	$ 17,378	$ 42,419	$ 59,797
Total – on balance sheet	$589,922	$175,457	$145,873	$911,252

$ in millions	Contingent and forward starting collateralised agreements	Operating leases	Other	Total
As of December 2017				
Trading/on demand	$ 882	$ –	$ 3,392	$ 4,274
Less than 1 month	57,863	7	–	57,870
1 – 3 months	10	15	299	324
3 months – 1 year	1	67	–	68
1 – 5 years	–	177	–	177
Greater than 5 years	–	5	–	5
Total – off balance sheet	$ 58,756	$ 271	$ 3,691	$ 62,718

In the tables above:

- Cash flows by contractual maturity include interest that will accrue on financial liabilities.
- Financial liabilities, with the exception of those that are held for trading or designated at fair value through profit or loss, are disclosed at their undiscounted cash flows. The fair values of financial liabilities held for trading and financial liabilities designated at fair value through profit or loss have been disclosed as this is consistent with the values used in the liquidity risk management of these instruments.
- Liquidity risk on derivatives is mitigated through master netting agreements and cash collateral arrangements.

Collateral Received and Pledged

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

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

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

	As of	
$ in millions	**November 2018**	December 2017
Collateral available to be delivered or repledged	**$484,249**	$491,634
Collateral that was delivered or repledged	**$429,161**	$444,650

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

The table below presents information about assets pledged.

	As of	
$ in millions	**November 2018**	December 2017
Financial instruments owned pledged to counterparties that:		
Had the right to deliver or repledge	**$20,550**	$24,178
Did not have the right to deliver or repledge	**$30,177**	$23,358

The company has received cash collateral of $54.10 billion as of November 2018 and $59.10 billion as of December 2017 and posted cash collateral of $44.97 billion as of November 2018 and $50.07 billion as of December 2017. Amounts received and posted are mainly in respect of financial instruments owned and financial instruments sold, but not yet purchased.

In addition to repurchase agreements and securities lending transactions, the company funds certain assets through the use of other secured financings and pledges financial instruments as collateral in these transactions. These other secured financings consist of liabilities related to special purpose entities, transfers of financial assets that are accounted for as financings rather than sales and other structured financing arrangements. Other secured financings include arrangements that are non-recourse.

Hedge Accounting

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

The company applies a statistical method that utilises regression analysis when assessing the effectiveness of its fair value hedging relationships in achieving offsetting changes in the fair values of the hedging instrument and the risk being hedged (i.e., interest rate risk). An interest rate swap is considered highly effective in offsetting changes in fair value attributable to changes in the hedged risk when the regression analysis results in a coefficient of determination of 80% or greater and a slope between 80% and 125%. Possible sources of ineffectiveness on these hedges include:

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

For qualifying fair value hedges, gains or losses on derivatives and the change in fair value of the hedged item attributable to the hedged risk are included in net revenues. When a derivative is no longer designated as a hedge, any remaining difference between the carrying value and par value of the hedged item is amortised over the remaining life of the hedged item using the effective interest method.

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

$ in millions	**As of November 2018**
Less than 1 month	**$ –**
1 – 3 months	**–**
3 months – 1 year	**93**
1 – 5 years	**14**
Greater than 5 years	**2,728**
Total	**$2,835**

The average fixed rate of the company's hedging instruments was 1.19% for the period ended November 2018.

The table below presents information about hedging instruments, which are classified in derivative instruments.

	As of	
$ in millions	**November 2018**	December 2017
Asset carrying value	**$26**	$38
Liability carrying value	**$ –**	$ –

The table below presents the carrying value of the hedged items that are currently designated in a hedging relationship and the related cumulative hedging adjustment (increase/(decrease)) from current and prior hedging relationships included in such carrying values.

	As of November 2018	
$ in millions	**Carrying value**	**Cumulative hedging adjustment**
Unsecured short-term borrowings	**$ 85**	**$ –**
Unsecured long-term borrowings	**$2,582**	**$28**

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

	Period Ended	
$ in millions	**November 2018**	December 2017
Interest rate hedges	**$ 16**	$(35)
Hedged borrowings	**(22)**	16
Hedge ineffectiveness	**$ (6)**	$(19)

Unconsolidated Structured Entities

The company has interests in structured entities that it does not control (unconsolidated structured entities), which primarily includes: senior and subordinated debt; derivatives and guarantees.

Structured entities generally finance the purchase of assets by issuing debt securities that are either collateralised by or indexed to the assets held by the structured entity. The debt securities issued by a structured entity may include tranches of varying levels of subordination. The company's involvement with structured entities primarily includes securitisation of financial assets.

In certain instances, the company provides guarantees, including derivative guarantees, to unconsolidated structured entities or holders of interests in unconsolidated structured entities.

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

	As of	
	November	December
$ in millions	**2018**	2017
Assets in structured entities	**$6,467**	$7,643
Carrying value of interests - assets	**$ 419**	$ 538
Carrying value of interests - liabilities	**$ (6)**	$ (34)
Maximum exposure to loss	**$3,816**	$4,119

In the table above:

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

Transferred Assets

Assets Continued to be Recognised in Full. During the period, the company transferred certain financial assets where the transfers failed to meet the derecognition criteria, as contained in IFRS 9, and as a result of which the company continues to recognise these assets in full in the balance sheet.

The company transfers assets owned to counterparties in the ordinary course of business to collateralise repurchase agreements and other securities lending transactions. In these transactions the transferred assets continue to be recognised by the company for accounting purposes because the transactions require the financial instruments to be repurchased at maturity of the agreement and the company remains exposed to the price, credit and interest rate risk of these instruments. When the company receives cash proceeds from the transfer of the asset, a financial liability is recognised in respect of the consideration received and recorded in "Collateralised financings". When the company receives non cash collateral (in the form of securities) no liability is initially recognised. If collateral received is subsequently sold, the obligation to return the collateral is recognised as a liability in "Financial instruments sold, but not yet purchased".

In addition to repurchase agreements and securities lending agreements, the company obtains funding through the use of other arrangements that fail to meet the derecognition criteria. For example, sales of securities with related derivatives, such as total return swaps, through which the company retains substantially all of the risk and reward of the transferred assets. A financial liability is recognised in such cases for the proceeds received.

Other financial assets transferred that continue to be recognised on balance sheet for accounting purposes relate to pledges of securities as collateral, primarily for derivative transactions. The obligations under such derivatives are recorded in "Financial instruments sold, but not yet purchased".

The table below presents financial assets which have been transferred but which remain on balance sheet for accounting purposes.

	As of	
	November	December
$ in millions	**2018**	2017
Government and agency obligations	**$22,951**	$14,629
Corporate debt instruments	**6,434**	5,766
Equity securities	**21,342**	27,141
Total	**$50,727**	$47,536

In the table above, the carrying amount of the associated financial liabilities generally approximate the carrying amount of the assets transferred.

Derecognised Assets With Ongoing Exposure. The company has continuing involvement in the form of derivative transactions and guarantees with certain unconsolidated structured entities to which the company had transferred financial assets. These derivatives may be credit-linked to the asset transferred and result in the company retaining specific risks in the transferred asset or require the company to make payments to the structured entity to compensate losses on the asset if certain contingent events occur.

In addition, the company transfers financial assets to securitisation vehicles. The company generally receives cash in exchange for the transferred assets but may have continuing involvement with the transferred assets, including ownership of beneficial interests in the securitised financial assets, primarily in the form of debt instruments. The company may also purchase senior or subordinated securities issued by securitisation vehicles in connection with secondary market-making activities.

Where the company's continuing involvement in transferred assets is through derivatives or guarantees, the maximum exposure to loss is the notional amounts of the derivative or guarantee. For retained or purchased interests in securitised assets, the company's risk of loss is limited to the fair value of these interests. In all cases these retained interests are carried at fair value.

The company accounts for assets pending transfer at fair value and therefore does not typically recognise significant gains or losses upon the transfer of assets. The company does not have continuing involvement that could require the company to repurchase derecognised financial assets.

The tables below present information about the company's exposure through continuing involvement and the gains or losses related to those transactions.

$ in millions	Carrying amount	Maximum exposure to loss
As of November 2018		
Assets		
Cash instruments	**$ –**	**$ –**
Derivative instruments	**63**	**802**
Financial instruments owned	**63**	**802**
Total	**$63**	**$802**
Liabilities		
Derivatives instruments	**$ (1)**	**$111**
Financial instruments sold, but not yet purchased	**(1)**	**111**
Total	**$ (1)**	**$111**
As of December 2017		
Assets		
Cash instruments	$10	$ 21
Derivative instruments	85	902
Financial instruments owned	95	923
Total	$95	$923
Liabilities		
Derivatives instruments	$ (2)	$112
Financial instruments sold, but not yet purchased	(2)	112
Total	$ (2)	$112

$ in millions	Income/ (expense) in the period	Cumulative income/ (expense)
As of November 2018		
Assets		
Cash instruments	**$ –**	**$132**
Derivative instruments	**(3)**	**121**
Financial instruments owned	**(3)**	**253**
Total	**$ (3)**	**$253**
Liabilities		
Derivatives instruments	**$ –**	**$ (35)**
Financial instruments sold, but not yet purchased	**–**	**(35)**
Other creditors	**–**	**(1)**
Total	**$ –**	**$ (36)**
As of December 2017		
Assets		
Cash instruments	$ 1	$132
Derivative instruments	1	124
Financial instruments owned	2	256
Total	$ 2	$256
Liabilities		
Derivatives instruments	$ –	$ (35)
Financial instruments sold, but not yet purchased	–	(35)
Other creditors	–	(1)
Total	$ –	$ (36)

Note 29.

Offsetting of Financial Assets and Financial Liabilities

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

- Gross amounts exclude the effects of both counterparty netting and collateral, and therefore are not representative of the company's economic exposure.
- Amounts not offset in the balance sheet include counterparty netting (i.e., the netting of financial assets and financial liabilities for a given counterparty when a legal right of set-off exists under an enforceable netting agreement), and cash and security collateral received and posted under enforceable credit support agreements, that do not meet the criteria for offsetting under U.K. GAAP.
- Where the company has received or posted collateral under credit support agreements, but has not yet determined whether such agreements are enforceable, the related collateral has not been included in the amounts not offset in the balance sheet.
- Gross amounts included derivative assets of $6.15 billion and derivative liabilities of $5.10 billion as of November 2018, and derivative assets of $5.69 billion and derivative liabilities of $6.27 billion as of December 2017, which are not subject to an enforceable netting agreement or are subject to a netting agreement that the company has not yet determined to be enforceable.
- Substantially all resale agreements and securities borrowed within collateralised agreements and repurchase agreements and securities loaned within collateralised financings are subject to enforceable netting agreements as of November 2018 and December 2017.

	As of November 2018						
				Amounts not offset in the balance sheet			
$ in millions	Gross amounts	Amounts offset in the balance sheet	Net amount presented in the balance sheet	Counterparty netting	Cash collateral	Security collateral	Net amount
Financial Assets							
Cash instruments	$ 18,880	$ (13,407)	$ 5,473	$ (1,595)	$ (43)	$ (3,448)	$ 387
Derivative instruments	523,283	(10,720)	512,563	(448,264)	(34,886)	(10,769)	18,644
Financial instruments owned	542,163	(24,127)	518,036	(449,859)	(34,929)	(14,217)	19,031
Collateralised agreements	270,215	(66,881)	203,334	(83,337)	–	(116,825)	3,172
Debtors	69,213	(15,727)	53,486	(5,450)	(32,439)	(7,415)	8,182
Financial assets subject to enforceable netting agreements	881,591	(106,735)	774,856	(538,646)	(67,368)	(138,457)	30,385
Financial assets not subject to enforceable netting agreements	111,490	–	111,490	–	–	–	111,490
Total financial assets	$ 993,081	$(106,735)	$886,346	$(538,646)	$(67,368)	$(138,457)	$141,875
Financial Liabilities							
Amounts falling due within one year							
Cash instruments	$ 730	$ (709)	$ 21	$ –	$ –	$ –	$ 21
Derivative instruments	509,108	(10,720)	498,388	(448,348)	(30,815)	(5,867)	13,358
Financial instruments sold, but not yet purchased	509,838	(11,429)	498,409	(448,348)	(30,815)	(5,867)	13,379
Collateralised financings	219,104	(82,614)	136,490	(83,130)	(1,181)	(50,782)	1,397
Other creditors	66,083	(3,862)	62,221	(6,552)	(34,944)	–	20,725
Total	795,025	(97,905)	697,120	(538,030)	(66,940)	(56,649)	35,501
Amounts falling due after more than one year							
Collateralised financings	14,456	(7,105)	7,351	(245)	(428)	(6,070)	608
Other creditors	3,264	(1,725)	1,539	(371)	–	–	1,168
Total	17,720	(8,830)	8,890	(616)	(428)	(6,070)	1,776
Financial liabilities subject to enforceable netting agreements	812,745	(106,735)	706,010	(538,646)	(67,368)	(62,719)	37,277
Financial liabilities not subject to enforceable netting agreements	146,903	–	146,903	–	–	–	146,903
Total financial liabilities	$ 959,648	$(106,735)	$852,913	$(538,646)	$(67,368)	$ (62,719)	$184,180

	As of December 2017						
				Amounts not offset in the balance sheet			
$ in millions	Gross amounts	Amounts offset in the balance sheet	Net amount presented in the balance sheet	Counterparty netting	Cash collateral	Security collateral	Net amount
Financial Assets							
Cash instruments	$ 17,333	$ (13,570)	$ 3,763	$ (523)	$ (368)	$ (2,230)	$ 642
Derivative instruments	580,749	(14,540)	566,209	(496,655)	(37,222)	(12,206)	20,126
Financial instruments owned	598,082	(28,110)	569,972	(497,178)	(37,590)	(14,436)	20,768
Collateralised agreements	267,424	(62,604)	204,820	(83,213)	–	(117,657)	3,950
Debtors	68,567	(9,013)	59,554	(5,803)	(36,896)	(7,673)	9,182
Financial assets subject to enforceable netting agreements	934,073	(99,727)	834,346	(586,194)	(74,486)	(139,766)	33,900
Financial assets not subject to enforceable netting agreements	104,843	–	104,843	–	–	–	104,843
Total financial assets	$1,038,916	$ (99,727)	$939,189	$(586,194)	$(74,486)	$(139,766)	$138,743
Financial Liabilities							
Amounts falling due within one year							
Cash instruments	$ 768	$ (718)	$ 50	$ –	$ –	$ –	$ 50
Derivative instruments	570,661	(14,538)	556,123	(496,609)	(35,821)	(6,833)	16,860
Financial instruments sold, but not yet purchased	571,429	(15,256)	556,173	(496,609)	(35,821)	(6,833)	16,910
Collateralised financings	227,069	(71,560)	155,509	(81,610)	(440)	(70,660)	2,799
Other creditors	70,730	(3,482)	67,248	(6,250)	(37,699)	–	23,299
Total	869,228	(90,298)	778,930	(584,469)	(73,960)	(77,493)	43,008
Amounts falling due after more than one year							
Collateralised financings	22,294	(7,553)	14,741	(1,646)	(446)	(11,679)	970
Other creditors	3,720	(1,876)	1,844	(79)	(80)	–	1,685
Total	26,014	(9,429)	16,585	(1,725)	(526)	(11,679)	2,655
Financial liabilities subject to enforceable netting agreements	895,242	(99,727)	795,515	(586,194)	(74,486)	(89,172)	45,663
Financial liabilities not subject to enforceable netting agreements	112,801	–	112,801	–	–	–	112,801
Total financial liabilities	$1,008,043	$ (99,727)	$908,316	$(586,194)	$(74,486)	$ (89,172)	$158,464

Note 30.

Post Balance Sheet Events

On January 21, 2019, 7,643,885 ordinary shares of $1 each were allotted at $44.48 to GSG UK. The total consideration received was $340,000,000 in cash incorporating a share premium of $332,356,115.

The Supplement, the Registration Document and the Report are available free of charge at the offices of Goldman Sachs International, Zweigniederlassung Frankfurt, MesseTurm, Friedrich-Ebert-Anlage 49, 60308 Frankfurt am Main and furthermore are available on the website www.gs.de/service/wertpapierprospekte.

Pursuant to article 16 para. 3 of the German Securities Prospectus Act, investors who have already agreed to purchase or subscribe for securities offered under the Prospectus before this Supplement has been published shall have the right, exercisable within a time period of two working days after the publication of this Supplement, to withdraw their acceptances, provided that the new factor, mistake or inaccuracy arose before the final closing of the offer to the public and the delivery of the securities. No grounds must be stated for the withdrawal, which must be made in text form. The timely dispatch of the withdrawal is sufficient to comply with the deadline.

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