Goldman Sachs Bank Europe SE

Pillar 3 Disclosures

For the period ended December 31, 2020

TABLE OF CONTENTS

Page No.

INDEX OF TABLES

Page No.

Introduction

Overview

Goldman Sachs Bank Europe SE (GSBE or the bank) provides a wide range of financial services to a diversified client base that includes corporations, financial institutions, and ultra-high-net-worth individuals, from its registered office in Frankfurt am Main and branches in Amsterdam, Copenhagen, Dublin, London, Luxembourg, Madrid, Milan, Paris, Stockholm and Warsaw[1].

GSBE is primarily supervised by the European Central Bank (ECB) within the context of the European Single Supervisory Mechanism, the Federal Financial Supervisory Authority (BaFin) and the Deutsche Bundesbank.

The bank'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 bank, "group undertaking" means Group Inc. or any of its subsidiaries. Group Inc., together with its consolidated subsidiaries, form "GS Group" (also referred to as the firm). 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's purpose is to advance sustainable economic growth and financial opportunity. GS Group's goal, reflected in the One Goldman Sachs initiative, is to deliver its full range of services and expertise to support its clients in a more accessible, comprehensive and efficient manner, across business and product areas. The sole shareholder of GSBE is Goldman Sachs (Cayman) Holding Company with its registered office in George Town, Cayman Islands. On July 1, 2021 Goldman Sachs (Cayman) Holding Company distributed 100% of it's shareholding in GSBE to The Goldman Sachs Group, Inc. which in turn contributed the full shareholding to Goldman Sachs Bank USA. As such with effect from July 1, 2021 the sole shareholder is Goldman Sachs Bank USA, with its registered office in New York, United States. Goldman Sachs Bank Europe SE is registered in Frankfurt am Main with the register number HRB 114190.

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

For information on Group Inc.'s financial statements and regulatory capital ratios, please refer to the firm's annual Pillar 3 Disclosures and Annual Report on Form 10-K. References to the "2020 Form 10-K" are to the firm's Annual Report on Form 10-K for the year ended December 31, 2020.

https://www.goldmansachs.com/investor-relations/financials/current/other-information/4q-pillar3-2020.pdf

https://www.goldmansachs.com/investor-relations/financials/current/10k/2020-10-k.pdf

GSBE's regulatory capital requirement has been calculated in accordance with the E.U. Capital Requirements Directive (CRD) and the E.U. Capital Requirements Regulation (CRR). These are largely based on the Basel Committee on Banking Supervision's (Basel Committee) final capital framework for strengthening international capital standards (Basel III), which is structured around three pillars: Pillar 1 "minimum capital requirements", Pillar 2 "supervisory review process" and Pillar 3 "market discipline".

GSBE's Pillar 3 disclosures published for December 31, 2020 have been prepared in accordance with the EBA Guidelines on disclosure requirements under Part 8 of the CRR published in December 2016.

As of December 31, 2020, GSBE has Nil exposures to disclose pursuant to the guidelines (EBA/GL/2020/07) on disclosure of exposures subject to measures applied in response to the Covid-19 crisis, as such the required tables have not been included in this document.

The Pillar 3 disclosures have been published both in English and German languages following the publication of the GSBE's 2020 IFRS Financial Information and GSBE's 2020 Financial Statements. Both documents can be accessed via the following link:

https://www.goldmansachs.com/investor-relations/financials/subsidiary-financial-info/gsbe/index.html

[1] https://www.goldmansachs.com/disclosures/gsbese-related-disclosures/Legal_and_Regulatory_Information.pdf

GSBE has received permission according to Article 24(2) CRR from the competent authorities to change its accounting standard for prudential purposes from German GAAP (HGB) to International Financial Reporting Standards (IFRS) during 2020. The aim of which is to enhance transparency and comparability for stakeholders. Impacts of this GAAP change are further commented as relevant in the respective sections of this document. In addition, GSBE continues to prepare its statutory financial statements in accordance with HGB.

Measures of exposures and other metrics disclosed in this report may not be based on International Financial Reporting Standards (IFRS), may not be directly comparable to measures reported in financial statements, and may not be comparable to similar measures used by other companies.

Basis of Consolidation

GSBE and its subsidiaries are indirectly wholly-owned by the parent company, Group Inc. and included in its consolidated financial statements.

Due to immateriality of its subsidiaries pursuant to Section 296 (2) of HGB, GSBE waives its obligation from preparing consolidated financial statements. However, the subsidiaries are consolidated according to the equity method in the IFRS financial information and no fair values are disclosed separately.

The subsidiaries are:

- Goldman, Sachs & Co. Verwaltungs GmbH
- Goldman Sachs Gives Gemeinnützige GmbH
- Goldman, Sachs Management GP GmbH

The additional information to be disclosed in accordance with Section 26(a) of the German Banking Act (Kreditwesengesetz; in the following, "KWG") was also included in GSBE’s 2020 Financial Statements under the section of “Branches of the Bank” within Note 20.

GSBE is considered the parent company of a group under § 10a of KWG. Its subsidiary Goldman, Sachs Management GP GmbH, Frankfurt am Main, a financial corporation according to § 1 Abs 3 KWG, may in line with Article 19 CRR be exempted from the scope of consolidation so that, in accordance with Article 11 of CRR, there is no requirement for a regulatory consolidation, and the rules on disclosure obligations on a consolidated basis under Article 13 do not apply. Therefore, these disclosures are prepared for GSBE on a stand-alone basis.

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

Group Inc. is a holding company and, therefore, utilises dividends, distributions and other payments from its subsidiaries to fund dividend payments and other payments on its obligations, including debt obligations. Regulatory capital requirements, as well as other provisions of applicable law and regulations restrict Group Inc.’s ability to withdraw capital from its regulated subsidiaries.

A transfer of funds between GSBE and its subsidiaries is considered immaterial and therefore we don’t elaborate on this further.

For information regarding the capital adequacy of GSBE, see “Risk Report - Capital Adequacy” within “Management Report” of GSBE’s 2020 Financial Statements.

For further information about restrictions on the transfer of funds within Group Inc. and its subsidiaries, see “Note 20. Regulation and Capital Adequacy” in Part II, Item 8 “Financial Statements and Supplementary Data” and “Risk Management - Liquidity Risk Management” and “Equity Capital Management and Regulatory Capital” in Part II, Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the firm’s 2020 Form 10-K.

Definition of Risk-Weighted Assets

The risk weights used in the calculation of RWAs reflect an assessment of the riskiness of our assets and exposures. These risk weights are based on predetermined levels set by regulators. The relationship between available capital and capital requirements can be expressed in the form of a ratio, and capital requirements are arrived at by dividing RWAs by 12.5. Minimum capital ratios set out in Table 1 are higher as they include the impact of additional buffers.

Fair Value

Financial assets that are not held for the collection of contractual cash flows or do not have cash flows that represent solely payments of principal and interest are mandatorily measured at fair value through profit or loss. Financial assets mandatorily measured at fair value are initially measured at fair value with transaction costs expensed in the income statement. Such financial assets are subsequently measured at fair value with gains or losses recognised in net revenues.

Financial liabilities held for trading are initially measured at fair value and subsequently at fair value through profit or loss, with gains or losses recognised in net revenues. Financial liabilities held for trading include trading liabilities, which consists of trading cash instruments and derivative instruments.

The bank also 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 Debt Valuation Adjustment (DVA) being recognised in other comprehensive income, if it does not create or enlarge an accounting mismatch, and the remaining changes in the fair value being recognised in net revenues. Amounts recognised in other comprehensive income attributable to own credit spreads are not subsequently transferred to the income statement, even upon derecognition of the financial liability. Gains or losses exclude contractual interest, which is included in interest income and interest expense, for all instruments other than hybrid financial instruments. The primary reasons for designating such financial liabilities at fair value through profit or loss are:

- To eliminate or significantly reduce a measurement or recognition inconsistency that would otherwise arise from measuring assets or liabilities or recognising the gains and losses on them on different bases; and

- The group of financial liabilities, or financial assets and liabilities, is managed and its performance evaluated on a fair value basis.

For additional information regarding the fair value measurement of GSBE's assets and liabilities, see "Note 2. Summary of Significant Accounting Policies. Financial Assets and Liabilities Measured at Fair Value Through Profit or Loss" in GSBE's 2020 IFRS Financial Information.

The firm has documented policies and maintains systems and controls for the calculation of Prudent Valuation Adjustment (PVA) as required by the Commission Delegated Regulation (EU) No. 2016/101. PVA represents the excess of valuation adjustments required to achieve prudent value, over any adjustment applied in the firm's fair value that addresses the same source of valuation uncertaint*y*. For the year 2020 GSBE applied the Simplified Approach, where institutions assess a capital deduction as a percentage to the fair-valued positions, which are not exactly matching or offsetting and therefore a change in accounting valuation of these positions would have an impact on Common Equity Tier 1 (CET1) capital.

Banking Book / Trading Book Classification

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

Trading book positions generally meet the following criteria: they are assets or liabilities that are accounted for at fair value; they are risk managed using a Value-at-Risk (VaR) internal model; they are held as part of our market-making and underwriting businesses and are intended to be resold in the short term, or positions intended to benefit from actual or expected short-term price differences between buying and selling prices or from other price or interest rate variations2. Trading book positions are subject to market risk regulatory capital requirements, as are foreign exchange and commodity positions, whether or not they meet the other criteria for classification as trading book positions. Market risk is the risk of loss in value of these positions due to changes in market conditions. Some trading book positions, such as derivatives, are also subject to counterparty credit risk regulatory capital requirements.

Banking book positions are accounted for in line with the principles outlined in the bank's Financial Statements. Banking book positions are subject to credit risk regulatory capital requirements. Credit risk represents the potential for loss due to the default or deterioration in credit quality of a counterparty (e.g., an Over-The-Counter (OTC) derivatives counterparty or a borrower) or an issuer of securities or other instruments we hold.

Regulatory Developments

The bank's businesses are subject to extensive regulation and supervision worldwide. Regulations have been adopted or are being considered by regulators and policy-makers. The expectation is that the principal areas of impact from regulatory reform for the bank will be increased regulatory capital requirements and increased regulation and restriction on certain activities. However, given that many of the new and proposed rules are highly complex, the full impact of regulatory reform will not be known until the rules are implemented and market practices develop under final E.U. regulations.

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

Risk-Based Capital Ratios. In June 2019, amendments to the CRR and CRD were published in the Official Journal of the E.U.

The amendments to the CRR include changes to rules for the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities (MREL), counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, and reporting and disclosure requirements. Most of these requirements applied from June 27, 2021 in the E.U.

The amendments to the CRD include the requirement to establish an E.U. intermediate parent undertaking ("IPU") as well as provisions on remuneration, interest rate risk management, supervisory powers and macro-prudential capital requirements. The amendments to the CRD are expected to phase in over time.

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, 2023, and that the new floor be phased in through January 1, 2028.

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

The impact of the latest Basel Committee developments on the bank (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 May 2020, the Single Resolution Board (SRB) published a statement of policy on minimum requirement for MREL under the revised Banking Package. The SRB policy requires material subsidiaries of banking groups to meet a minimum internal MREL requirement to facilitate the transfer of losses to its resolution entity, which for GSBE is Group Inc. On February 3, 2021, GSBE issued €800m of MREL eligible debt. The MREL eligible debt was issued in the expectation of GSBE being required to maintain an internal MREL in the near future.

The SRB expects to communicate internal MREL requirements in 2021 with the transitional minimum internal MREL requirement expected to phase in from January 1, 2022, and become fully effective on January 1, 2024.

Climate Change

We recognize that climate change presents both challenges and opportunities for our business. Climate change could potentially disrupt the firm's business, affect client activity levels and creditworthiness and damage the firm's reputation. For example, climate change may cause extreme weather events that disrupt operations at one or more of the firm's primary locations, affecting its ability to service and interact with its clients. Climate change may also have a negative impact on the financial condition of its clients, which may decrease revenues from those clients and increase the credit risk associated with loans and other credit exposures to those clients. Additionally, the firm's reputation may be damaged as a result of its involvement, or its clients' involvement, in certain industries or projects associated with climate change. The firm's Environmental Policy Framework articulates our roadmap for environmental progress and our approach to engaging with clients on climate-related risks and opportunities, including risk management guidelines for carbon intense sectors.

Climate change presents financial risk through two primary components, physical and transition. Physical risks relate to the firm's own infrastructure as well as real estate lending and investment exposure. The firm uses an internal model to assess physical risk factors at any locations for time horizons through the year 2050 as well as for today. Transition risk emerge due to policy changes towards low carbon emission economy. The firm uses an internal transition risk model that allows scenario analysis under several distinct representative pathways and distinct shocks to equity, credit and other market variables.

In the context of GSBE's existing activities, our analysis suggests that the loss associated with GS stress testing scenarios at GSBE level is not material, though we will continue to monitor materiality on an ongoing basis. As the firm continues to develop and refine its process around climate risk monitoring, its impact on wholesale lending will remain an important consideration.

Brexit

In December 2019, the U.K. and the E.U. ratified the Brexit withdrawal agreement, resulting in the U.K. leaving the E.U. in January 2020 and entering into a transition period. Before the end of the transition period on 31 December 2020, the

U.K. and the E.U. agreed the Trade and Cooperation Agreement which includes provisions for the future trade arrangements between the two parties. The U.K. also granted the E.U. equivalence in a number of areas including CRR, however this has not been reciprocated by the E.U. to date. Following the end of the Brexit transition period, GSBE has further expanded business activities across Investment Banking, FICC, Equities and Investment Management.

Other Developments

The resurgence in the spread of COVID-19 towards the end of 2020 and into 2021 has created greater uncertainty regarding the economic outlook for the near term, even as efforts to distribute vaccines are underway. While governments and central banks continue to be aggressive in providing fiscal and monetary stimulus, the global economic recovery remains fragile.

The bank has continued to successfully execute on its Business Continuity Planning (BCP) strategy since initially activating it in March 2020 in response to the emergence of the COVID-19 pandemic. The bank's priority has been to safeguard its employees and to seek to ensure continuity of business operations on behalf of its clients. As a result of the bank's BCP strategy, the majority of its employees worked remotely during most of 2020 and continue to do so in 2021. In order to partially re-open the bank's offices to employees after initial restrictions began to ease in the second quarter of 2020, the bank established policies and protocols to address safety considerations, taking into account the readiness of people, communities and facilities. Over the course of the pandemic, the extent to which the bank's employees have worked from its offices has varied based on how circumstances in each location have evolved. The bank is in constant dialogue with key stakeholders to assess health and safety conditions across all of its office locations and has robust procedures in place to protect the well-being of employees, such as controls around building access, strict physical distancing measures, enhanced cleaning regimes and on-site COVID-19 testing.

The COVID-19 pandemic has created economic and financial disruptions that have in the past adversely affected, and may in the future adversely affect the company's business, financial condition, liquidity and results of operations. The extent to which the COVID-19 pandemic will negatively affect the bank's businesses, financial condition, liquidity and results of operations will depend on future developments, including the widespread availability, use and effectiveness of vaccines, which are highly uncertain and cannot be predicted.

Risk Management

Overview

The firm believes that effective risk management is critical to the success of the firm and of GSBE as an entity. Accordingly, the firm has established an Enterprise Risk Management (ERM) framework that employs a comprehensive, integrated approach to risk management, and is designed to enable comprehensive risk management processes through which the firm at the GS Group level and GSBE at an entity level identify, assess, monitor and manage the risks associated with its business activities. These risks include liquidity, market, credit, operational, model, legal, compliance, conduct, regulatory, business environment and strategic risks, and reputational risks. The following section covers the bank's risk management structure which is consistent with GS Group and built around three core components: governance, processes and people.

Governance

Risk management governance starts with the bank's Executive Board, which both directly and through established committees, including the GSBE Risk Committee, oversees the risk management policies and practices. The GSBE Executive Board is also responsible for the annual review and approval of the GSBE Risk Appetite Statement (RAS). The RAS describes the levels and types of risk the bank is willing to assume within its risk capacity to achieve its strategic business objectives included in the bank's business plan, while remaining in compliance with regulatory requirements. The Executive Board reviews the business plan and is ultimately responsible for overseeing and setting strategy and risk appetite. For more details on the GSBE RAS refer to the 'Risk Profile and Strategy'.

Enterprise Risk, which reports to the GS Group Chief Risk Officer (CRO), oversees the implementation of the firm's risk governance structure and core risk management processes and is responsible for ensuring that the Enterprise Risk Management framework provides senior management and relevant governing bodies, including the GSBE Executive Board and Risk Committee, with a consistent and integrated approach to managing the various risks in a manner consistent with the firm's and the bank's risk appetite.

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

The independent risk oversight and control functions are considered the second line of defence and provide independent assessment, oversight and challenge of the risks taken by the first line of defence, as well as lead and participate in risk-oriented committees. Independent risk oversight and control functions include Compliance, Tax, and Controllers (Finance Division) that directly report to the bank's Chief Financial Officer (CFO) / Chief Operating Officer (COO), Credit Risk, Liquidity Risk, Market Risk, Model Risk Management, Operational Risk, Corporate Risk, and Risk Engineering that directly report to the bank's Chief Risk officer (CRO), and Legal that directly reports to the General Counsel of GSBE.

Internal Audit is considered the third line of defence and reports to the bank's Executive Board and administratively to the CFO/COO. 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 bank's Executive and Supervisory Boards, 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.

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

Additional oversight is provided by the GSBE Supervisory Board which receives regular updates from the GSBE Executive Board on the bank's risk profile and other risk related matters.

Processes

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

To effectively assess and monitor risks, the bank maintains a daily discipline of marking substantially all of its inventory to current market levels. The bank also applies a comprehensive framework of limits and thresholds to control and monitor risk across transactions, products, businesses and markets. See "Credit Risk", "Market Risk" and "Liquidity Risk Management", "Operational Risk" and "Model Risk" for further information.

People

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

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

Structure

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

GSBE Risk Committee. The GSBE 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 bank's activities. This includes reviewing key financial and risk metrics, including but not limited to profit and loss, capital (including Internal Capital Adequacy Assessment Process (ICAAP)), funding, liquidity (including Internal Liquidity Adequacy Assessment Process (ILAAP)), credit risk, market risk, operational risk and stress tests. Within its mandate, the GSBE Risk Committee approves market risk, credit risk, liquidity and regulatory capital management buffers and triggers and alerts, or articulate recommendations with regard to risk limits which require Executive Board approval. Its membership includes senior managers from the revenue-producing divisions and independent risk oversight and control functions. The GSBE Risk Committee reports to the bank's Executive Board.

GSBE Operational Risk Committee. The GSBE Operational Risk Committee provides oversight of the ongoing development and implementation of operational risk policies, framework and methodologies, with oversight from the GSBE Risk Committee, and monitors the effectiveness of operational risk management. The Committee is accountable for the implementation of business standards and practices, including reputational risk management, client service and conduct risk, within the scope of its mission.

GSBE Credit Risk Council. The GSBE Credit Risk Council is responsible for (i) ensuring that the bank has appropriate and effective credit risk management processes, and (ii) ongoing monitoring and review of credit risk exposure. The Council reports to the bank's Risk Committee.

GSBE Asset Liability Committee. The GSBE Asset and Liability Committee (ALCO) reviews and approves the strategic direction for the bank'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 GSBE ALCO directly reports to the bank's Executive Board.

As a subsidiary and integrated part of GS Group, the comprehensive regional and global risk governance framework in place forms an integral part of the strategy and risk management process of the bank. The integration into the firmwide risk management framework allows the bank to use the firm's methods and systems and a consistent implementation of firmwide structures and principles while considering the entity specificities and governance structure. The firm has established a series of committees with specific risk management mandates. Committees with oversight of matters relevant to the bank include representation from bank's senior management, where relevant.

For more information regarding the primary firmwide and regional risk and oversight committees which have also oversight of matters relevant for GSBE, see "Risk Report - Overview and Structure of Risk Management" within "Management Report" of GSBE's 2020 Financial Statements.

Risk Profile and Strategy

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

The bank's overall risk appetite is established through an assessment of opportunities relative to potential losses, and is calibrated to, among others, GSBE's capital, liquidity and earnings capability, and reflective of its strategy. The primary means of evaluating risk-taking capacity is through the ICAAP. The bank's ICAAP is a comprehensive internal process which coherently integrates several key components including risk identification and materiality assessment, capital planning, and risk appetite, and is integrated into the broader risk management framework and decision making throughout the entity.

The RAS of GSBE is complemented by the GS Group RAS, and articulates the risk philosophy, the identification of risks generated by its business activities, as well as the appetite and limits set in order to manage effectively those risks. Consistent with this objective, we pay particular attention to evaluating risks that are concentrated, correlated, illiquid, or have other adverse characteristics. The intention is to mitigate or eliminate these risks, limiting them to such an extent that they could not, individually or collectively, materially and adversely affect GSBE. The bank regularly reviews risk exposure and risk appetite, and takes into consideration the key external stakeholders, in particular our clients, shareholders, creditors, rating agencies, and regulators. The long-term success of our business model is directly linked to the preservation of strong relationships with each of these key constituents.

The GSBE Executive Board, in coordination with the GSBE CRO and the GSBE Risk Committee and with further supervision from the GSBE Supervisory Board, is actively engaged in reviewing and approving our overall risk appetite, as well as in reviewing the risk profile.

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

Risk Measurement

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

A number of specialist committees and governance bodies sit within the broader risk management framework with responsibilities for the monitoring of specific risks against risk limits or thresholds and the escalation of any breaches as described above.

GSBE is fully integrated into the broader firmwide organizational structure and risk governance, and applies a risk philosophy and risk management principles consistent with GS Group. For an overview of the GS Group risk management framework, including governance, processes and committee structure, see “Risk Management – Overview and Structure of Risk Management” in Part II, Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the firm’s 2020 Form 10-K.

Adequacy of Risk Management Arrangements

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

Capital Framework

Capital Structure

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

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

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

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

- A capital conservation buffer of 2.5%, consisting entirely of capital that qualifies as CET1.
- A countercyclical capital buffer of up to 2.5% (consisting entirely of CET1) in order to counteract excessive credit growth. The buffer only applies to GSBE's exposures to certain types of counterparties and exposures based in jurisdictions which have announced and implemented a countercyclical buffer. As of December 2020, the buffer increases the minimum CET1 ratio by 0.01%.
- In addition to the existing capital requirement resulting from Pillar 1, GSBE is subject to an annual Supervisory Review and Evaluation Process (SREP) by its regulators. As a result of this SREP process the supervisory authorities determine a SREP capital add-on. The SREP capital add-on applicable to GSBE for 2020 was previously set by the BaFin. It will be replaced by the capital add-on determined by the SREP process conducted by the ECB. This capital add-on consists of two components: a Pillar 2 Capital requirement (P2R) and a Pillar 2 Capital Guidance (P2G). While the P2R is binding and breaches can have direct legal consequences for banks, the P2G indicates to banks the supervisory view of the adequate level of capital to be maintained to provide a sufficient buffer to withstand stressed situations. Unlike the P2R, the P2G is not legally binding.
- GSBE's P2R capital add-on, effective from January 1, 2021 onwards, has been set by the ECB to 3.0% of which 1.69% have to be held in CET1 capital.

Minimum Regulatory Capital Ratios

The following table presents GSBE's minimum required ratios as of December 2020.

Table 1: Minimum Regulatory Capital Ratios

	December 2020
	Minimum ratio[3]
CET1 ratio	7.0%
Tier 1 capital ratio	8.5%
Total capital ratio	10.5%

[3] Includes the capital conservation buffer and countercyclical capital buffer described above

Compliance with Capital Requirements

As of December 31, 2020, GSBE had capital levels in excess of its overall capital requirements (OCR) which include the pillar 1 requirement, pillar 2 requirement, capital conservation buffer and countercyclical capital buffer and SREP add-on.

GSBE's shareholder made CET1 capital contributions totalling €2,000m during the first half of 2021 and GSBE issued €800m of MREL eligible debt.

Regulatory Capital

Overview

The following table presents a breakdown of GSBE's capital ratios under CRR as of December 31, 2020.

Table 2: Regulatory Capital Ratios[4]

€ in thousands	**As of December 2020**
CET1 Capital	€ 3,180,504
Tier 1 Capital	3,180,504
Tier 2 Capital	20,000
Total Capital	**€ 3,200,504**
RWAs	**€ 7,957,105**
CET1 Ratio	**40.0%**
Tier 1 Capital Ratio	**40.0%**
Total Capital Ratio	**40.2%**

Capital Structure

All capital, RWAs and ratios are based on current interpretation, expectations and understanding of the rules and may evolve in the future.

The following tables contain information on the components of our regulatory capital structure. The capital resources of GSBE are based on GSBE's 2020 IFRS financial information.

For year-end 2020 GSBE calculated its capital resources based on IFRS for the first time. Compared to the previous year's capital resources, this led to minor changes in the composition of GSBE's capital. While the capitalisation of deferred tax assets (DTAs) slightly increased GSBE's capital resources, the higher valuation of GSBE's pension liabilities had an almost offsetting effect. No impact arose from the recognition of intangibles and goodwill under IFRS due to these positions being subject to deductions under the CRR capital framework. Therefore, the transition from HGB to IFRS had no major impacts on GSBE's capital resources.

[4] Ratios are calculated using the regulatory capital resources as of December 31, 2020 excluding 2020 year-end profits in accordance with Article 26(2) of the regulation 575/2013. Including such profits would, ceteris paribus, increase the CET1, Tier 1 and Total capital ratios to 41.2%, 41.2% and 41.4% respectively.

Table 3: Regulatory Capital

€ in thousands	**As of December 2020**
Ordinary Share Capital and related share premium accounts	€ 311,271
Retained Earnings	463,057
Other capital reserves	2,586,307
Accumulated Other Comprehensive Income	(31,707)
2020 Year-end profits	(96,821)
CET1 Capital Before Deductions	**€ 3,232,107**
CVA and DVA	-
Prudent Valuation Adjustments	(11,018)
Intangible Assets[5]	(40,193)
DTAs that rely on future profitability, excluding those arising from temporary differences	(392)
CET1 Capital After Deductions	**€ 3,180,504**
Additional Tier 1 capital	**-**
Tier 1 Capital After Deductions	**€ 3,180,504**
Tier 2 Capital Before Deductions	20,000
Other Adjustments	-
Tier 2 Capital After Deductions	**€ 20,000**
Total Capital Resources	**€ 3,200,504**

[5] The impact from application of the new EBA prudential treatment of software assets on GSBE own funds was immaterial as of December 2020

We set out below a reconciliation between the capital resources of GSBE and its balance sheet.

Table 4: Reconciliation to Balance Sheet

€ in thousands	**As of December 2020**
Total Shareholders' Equity per IFRS Balance Sheet	€ 3,355,526
Capital instruments not yet recognised in CET1 capital [6]	€ (26,598)
2020 Year-end profits	(96,821)
Regulatory deductions	(51,603)
Additional Tier 1 Capital	-
Tier 2 Capital	20,000
Total Capital Resources	**€ 3,200,504**

[6] Pertains to 3,816,600 shares of € 1 each allotted to Goldman Sachs International (GSI) for contribution and transfer of the businesses pertaining to GSI branches into GSBE.

Risk-Weighted Assets

RWAs are calculated based on measures of credit risk, market risk and operational risk. The table below represents a summary of the RWAs and capital requirements for GSBE by type as at December 31, 2020 and December 31, 2019.

The overall impact from the IFRS transition on GSBE's RWA was negligible.

Table 5: Overview of RWAs

€ in thousands

		RWAs		Minimum capital requirements
		December 2020	December 2019	
1	**Credit risk (excluding CCR)**	**€ 655,163**	**€ 168,226**	**€ 52,413**
2	Of which the standardised approach	655,163	168,226	52,413
4	Of which the advanced IRB (AIRB) approach	-	-	-
5	Of which equity IRB under the simple risk-weighted approach or the IMA	-	-	-
3	**CCR**	**€ 4,402,841**	**€ 744,899**	**€ 352,227**
4	Of which mark to market	106,268	22,486	8,501
5	Of which the standardised approach	-	-	-
6	Of which internal model method (IMM)	3,715,298	531,198	297,224
7	Of which risk exposure amount for contributions to the default fund of a CCP	155,634	45,626	12,451
8	Of which CVA	425,642	145,589	34,051
9	**Settlement risk**	**€ 220,720**	**€ 19,133**	**€ 17,658**
10	**Securitisation exposures in the banking book (after the cap)**	**€ 13,321**	**€ 14,274**	**€ 1,066**
11	Of which standardised approach (ERBA)	1,175	1,161	94
12	Of which standardised approach	12,146	13,113	972
13	**Market risk**	**€ 2,351,872**	**€ 5,438**	**€ 188,150**
14	Of which the standardised approach	437,579	5,438	35,006
15	Of which IMA	1,914,293	-	153,143
16	**Large exposures**	-	-	-
17	**Operational risk**	**€ 313,188**	**€ 269,784**	**€ 25,055**
18	Of which basic indicator approach	313,188	269,784	25,055
19	Of which standardised approach	-	-	-
20	**Total**	**€ 7,957,105**	**€ 1,221,755**	**€ 636,568**

Total RWA increased by € 6.7 billion mainly due to Counterparty Credit Risk and Market Risk RWAs driven by higher trading volumes as a result of business growth in 2020, decreasing the total capital ratio from 56.2% in December 2019 to 40.2% in December 2020.

Credit Risk

Overview

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

The bank's exposure to credit risk comes mostly from client transactions in OTC derivatives and cash placements mainly with Central Banks. Credit risk also comes from securities financing transactions (i.e. resale and repurchase agreements and securities borrowing and lending activities) and lending activity. In addition, the bank may hold 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, consistent with other inventory positions.

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

The bank's framework for managing credit risk is consistent with the framework of GS Group established by GS Group's Risk Governance Committee, with the bank's Credit Risk department being an integral part of the GS Group Credit Risk function and reporting to the bank's chief risk officer.

Credit Risk Management Process

The process for managing credit risk includes the critical components of the risk management framework described in the "Overview and Structure of Risk Management" within "Management Report" of GSBE's 2020 Financial Statements. as well as the following:

- Setting of credit limits and monitoring compliance with established credit risk limits;
- Regular reporting (daily, weekly, monthly, quarterly) on the bank's credit exposures and credit concentrations to the chief credit officer, chief risk officer, the Credit Risk Council, the Risk Committee, and the Executive Board of GSBE;
- Assessing and determining internal credit ratings for counterparties and the associated likelihood that a counterparty will default on its payment obligations;
- Measuring our current and potential credit exposure and losses resulting from a counterparty default;
- Using credit risk mitigants, including collateral and hedging; and
- Maximizing recovery through active workout and restructuring of claims.

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

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

Risk Measures

Credit risk is measured based on the potential loss in the event of non-payment by a counterparty using current and potential exposure which are calculated using the firm's own models. For derivatives and securities financing transactions, current exposure represents the amount presently owed after taking into account applicable netting and collateral arrangements, while potential exposure represents the firm's estimate of the future exposure that could arise over the life of a transaction based on market movements within a specified confidence level (usually at the 95th-percentile). Potential exposure also takes into account netting and collateral arrangements. For loans and lending commitments, the primary measure of credit risk is a function of the notional amount of the position.

Limits

Credit limits and escalation thresholds are used at various levels (e.g. counterparty, economic group, industry and country) to manage the size and nature of the bank's credit exposures. The bank's Executive Board and the GSBE Risk Committee approve credit risk limits at the bank-wide level, and where appropriate the business and product level, consistent with the bank's risk appetite. Furthermore, the GSBE Executive Board or Risk Committee (including the Credit Risk Council) approve the framework that governs the setting of credit risk sub-limits at the bank level, which is delegated to Credit Risk.

Credit Risk is responsible for monitoring these limits and identifying and escalating to senior management and/or the appropriate risk committee, on a timely basis, instances where limits have been exceeded.

Credit Exposures

For information on the bank's credit exposures, including the gross fair value, netting benefits and current exposure of the bank's derivative exposures and the bank's securities financing transactions, see "Note 6. Repurchase Agreements" and "Note 7. Trading Assets and Liabilities" and "Credit Risk Management" in "Management Report" in the GSBE's 2020 financial statements.

Credit Risk and Counterparty Credit Risk RWAs

Credit RWAs are calculated based on measures of credit exposure, which are then risk weighted. Below is a description of the methodology used to calculate RWAs for Wholesale exposures, which generally include credit exposures to corporates, institutions, sovereigns or government entities (other than securitisation, retail or equity exposures). GSBE does not have regulatory permission to compute risk weights in accordance with the Advanced Internal Ratings Based (AIRB) approach, which utilises internal assessments of each counterparty's creditworthiness. Instead, it uses Standardised Risk Weights, for which nominated External Credit Assessment Institutions (ECAI) ratings are used.

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

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

The EAD detailed in the following tables represents the exposures used in computing capital requirements and is not a directly comparable metric to balance sheet amounts presented in the financial information of GSBE for the year ended December 31, 2020 due to differences in measurement methodology, counterparty netting and collateral offsets used.

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

Governance and Validation of Risk Parameters

Approaches and methodologies for quantifying EAD are monitored and managed by the Risk Engineering department within the Risk Division. Models are independently reviewed, validated and approved by Model Risk Management. For further information, see "Model Risk". The performance of each IMM model used to quantify EAD is assessed quarterly via backtesting procedures, performed by comparing the predicted and realised exposure of a set of representative trades and portfolios at certain horizons. The firm's models are monitored and enhanced in response to backtesting.

External Credit Rating Assessment Institutions

The External Credit Assessment Institutions (ECAIs) used are Standard & Poor's Ratings Services (S&P), Moody's Investors Service (Moody's) and Fitch, Inc. (Fitch) for all types of exposure categories in accordance with Articles 135 and 444 of CRR.

The following two tables present the methods used to calculate Counterparty Credit Risk RWAs and main parameters used within each method for GSBE as of December 31, 2020.

Table 6: Analysis of CCR Exposure by Approach

€ in thousands **As of December 2020**

		Notional	Replacement cost/current market value	Potential future credit exposure	EEPE	Multiplier	EAD post CRM	RWAs
1	Mark to market		€ 587	€ 162,260			€ 613,758	€ 106,268
3	Standardised approach		-			-	-	-
4	IMM (for derivatives and SFTs)				6,880,462	1.40	9,632,647	3,715,298
5	*Of which securities financing transactions*				151,862	1.40	212,607	161,574
6	*Of which derivatives and long settlement transactions*				6,728,600	1.40	9,420,041	3,553,724
11	**Total**							**€ 3,821,566**

The following table presents GSBE's EAD after credit risk mitigation and RWAs on exposures to CCPs as of December 31, 2020.

Table 7: Exposures to CCPs

€ in thousands **As of December 2020**

		EAD post CRM	RWAs
1	**Exposures to QCCPs (total)**		**€ 165,368**
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	340,049	6,801
3	(i) OTC derivatives	193,360	3,867
4	(ii) Exchange-traded derivatives	-	-
5	(iii) SFTs	-	-
6	(iv) Netting sets where cross-product netting has been approved	-	-
7	Segregated initial margin	-	
8	Non-segregated initial margin	146,689	2,934
9	Prefunded default fund contributions	157,482	155,634
10	Alternative calculation of own funds requirements for exposures		-
11	**Exposures to non-QCCPs (total)**		-
12	Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which	-	-
17	Segregated initial margin	-	
18	Non-segregated initial margin	-	-
19	Prefunded default fund contributions	-	-
20	Unfunded default fund contributions	-	-

The following table presents GSBE's exposures subject to CVA capital charges and corresponding RWAs as of December 31, 2020.

Table 8: CVA VaR Capital Charge

€ in thousands			As of December 2020
		Exposure value	RWAs
1	Total portfolios subject to the advanced method	€ 2,876,701	€ 372,687
2	(i) VaR component (including the 3× multiplier)		9,780
3	(ii) SVaR component (including the 3× multiplier)		20,035
4	All portfolios subject to the standardised method	93,393	52,955
5	**Total subject to the CVA capital charge**	**€ 2,970,093**	**€ 425,642**

The following table presents annual flow statement of the RWAs and capital requirements under the IMM as of December 31, 2020.

Table 9: RWA Flow Statements of CCR Exposures under the IMM

€ in thousands			As of December 2020
		RWA amounts	Capital requirements
1	**RWAs as at the end of the previous reporting period**	**€ 524,581**	**€ 41,966**
2	Asset size	2,985,998	238,880
3	Credit quality of counterparties	-	-
4	Model updates (IMM only)	189,300	15,144
5	Methodology and policy (IMM only)	-	-
6	Acquisitions and disposals	-	-
7	Foreign exchange movements	15,419	1,234
8	Other	-	-
9	**RWAs as at the end of the current reporting period**	**€ 3,715,298**	**€ 297,224**

The following table presents GSBE's total and average amount of net balance sheet Credit Risk exposures over the year by exposure class as of December 31, 2020.

Table 10: Total and Average Net Amount of Exposures

€ in thousands			As of December 2020
		Net value of exposures at the end of the period	Average net exposures over the period
15	***Total IRB approach***	**-**	**-**
16	Central governments or central banks	2,635,011	1,945,429
18	Public sector entities	112	112
21	Institutions	518,517	207,401
22	Corporates	706,333	380,665
33	Equity exposures	2,092	839
34	Other exposures	103,154	72,731
35	***Total standardised approach***	**€ 3,965,218**	**€ 2,607,176**
36	***Total***	**€ 3,965,218**	**€ 2,607,176**

Credit Risk Mitigation

To reduce credit exposures on derivatives and securities financing transactions, the bank may enter into netting agreements with counterparties that permit it to offset receivables and payables with such counterparties.

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

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

As of December 2020, the aggregate amounts of additional collateral or termination payments related to our net derivative liabilities under bilateral agreements that could have been called by our counterparties in the event of a one- and two-notch downgrade of our credit ratings are immaterial.

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

When the bank does not have sufficient visibility into a counterparty’s financial strength or when it believes a counterparty requires support, the bank may obtain third-party guarantees of the counterparty’s obligations. Main types of guarantors are sovereigns, certain supranational and multilateral development banks, banks and other financial institutions, or other GS Group entities. The bank may also mitigate its credit risk using credit derivatives.

The following table presents GSBE's net carrying values of credit risk exposures secured by different CRM techniques as of December 31, 2020.

Table 11: CRM Techniques

€ in thousands							As of December 2020
		Exposures unsecured - Carrying amount	Exposures secured - Carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
1	Total loans	€ 518,700	€ 45,480	€ 45,480	-	-
2	Total debt securities	-	-	-	-	-
3	**Total exposures**	**€ 518,700**	**€ 45,480**	**€ 45,480**	**-**	**-**
4	Of which defaulted	-	-	-	-	-

Credit Derivatives

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

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

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

For further information on the Credit Risk management process please refer to the "Credit Risk Management" within "Management Report" of GSBE's 2020 Financial Statements.

The following table presents GSBE's exposure to credit derivatives based on notional and fair values as of December 31, 2020.

Table 12: Credit Derivatives Exposures

€ in thousands			**As of December 2020**
	Credit derivative hedges		**Other credit derivatives**
	Protection bought	**Protection sold**	
Notionals			
Index credit default swaps	€ 41,448,870	€ 41,364,421	-
Total return swaps	-	-	-
Other credit default swaps	5,910,041	6,099,328	-
Other credit derivatives	-	-	12,694,102
Total notionals	**€ 47,358,910**	**€ 47,463,748**	**€ 12,694,102**
Fair values	**-**	**-**	**-**
Positive fair value (asset)	**€ 45,876**	**€ 1,862,173**	**€ 20,469**
Negative fair value (liability)	**€ 1,860,374**	**€ 45,799**	**€ 20,469**

Wrong-way Risk

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

Credit Valuation Adjustment Risk-Weighted Assets

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

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

Other Credit Risk-Weighted Assets

Credit RWAs also include the following components:

Cleared Transactions

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

Other Assets

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

Equity Exposures in the Banking Book

The bank has direct investments in private equity securities of its affiliated companies. These investments are typically longer-term in nature and they are therefore classified for regulatory capital purposes as banking book equity investments.

Past due exposures, impaired exposures and impairment provisions

Payments aged more than a threshold of 90 days on any material credit obligation to the bank are considered past due.

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

Expected Credit Losses

The bank assesses the expected credit losses (ECL) associated with financial assets measured at amortised cost on a forward looking basis in accordance with the provisions of IFRS 9 in conjunction with IDW RS BFA 7.

For information on GSBE's ECL associated with financial assets measured at amortised cost, see GSBE's 2020 Financial Statements.

Securitisations

Overview

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

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

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

Within GSBE, we currently hold the risk retention portion of securitised residential mortgages issued by securitisation vehicles (e.g., trusts and special purpose vehicles) as part of our role as the originator.

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

We account for a securitisation as a sale when we have relinquished control over the transferred financial assets. Prior to securitisation, we account for assets pending transfer at fair value and therefore do not typically recognise significant gains or losses upon the transfer of assets. GSBE did not, as of December 31, 2020 have assets held with the intent to securitise.

Banking Book Activity

All securitisation exposures as of December 31, 2020 were classified in the banking book. The securitisation exposures in the banking book within GSBE that meet the regulatory definition of a securitisation are exposures that we hold under the E.U. securitisation retention rule of 5% that originators must comply with. Under this rule, originators are required to withhold securities not below 5% of the total issuances.

By engaging in the banking book securitisation activities noted above, we are primarily exposed to credit risk and to the performance of the underlying assets. Liquidity risk associated with securitisations is consistently managed as part of the bank's overall liquidity risk management framework. For additional details on GSBE's risk management process and practices, see "Credit Risk" and "Market Risk" sections of this report, which also apply to securitisation positions covered in this chapter.

Calculation of Risk-Weighted Assets

The current securitisation framework came into effect in 2019. All securitisations are capitalised under this securitisation framework.

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

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

The following tables show our securitisation exposures in the banking book by type of exposure and risk weight band as of December 31, 2020.

Table 13: Securitisation Exposures by Type

€ in thousands			As of December 2020
	On-balance-sheet Exposures	Off-balance-sheet Exposures	Total Exposure Amount
	Traditional	Synthetic	
Residential mortgages	€ 17,401	-	€ 17,401
Commercial mortgages	-	-	-
Corporates	-	-	-
Asset-backed and other	-	-	-
Total	**€ 17,401**	**-**	**€ 17,401**

Table 14: Securitisation Exposures and Related RWAs by Risk Weight Bands

€ in thousands	As of December 2020	
	Exposure Amount	RWAs
0% - 25%	€ 15,191	€ 1,519
26% - 100%	1,139	686
101% - 250%	220	489
251% - 650%	-	-
651% - 1,250%	850	10,627
Total	**€ 17,401**	**€ 13,321**

Market Risk

Overview

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

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

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

Managers in revenue-producing units and Market Risk discuss market information, positions and estimated loss scenarios on an ongoing basis. Managers in revenue-producing units are accountable for managing risk within prescribed limits. These managers have in-depth knowledge of their positions, markets and the instruments available to hedge their exposures.

Market Risk Management Process

The bank's process for managing market risk is described in the "Overview and Structure of Risk Management" within "Management Report" of GSBE's 2020 Financial Statements, as well as the following:

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

Market Risk produces risk measures and monitors them against established market risk limits. These measures reflect an extensive range of scenarios and the results are aggregated at product, business and firmwide levels. For additional information regarding market risk measures and risk limits, see "Market Risk Management" within "Management Report" of GSBE's 2020 Financial Statements.

Market Risk-Weighted Assets

Trading book positions are subject to market risk capital requirements which are designed to cover the risk of loss in value of these positions due to changes in market conditions. These capital requirements are determined either by applying prescribed risk weighting factors, or they are based on internal models which are subject to various qualitative and quantitative parameters. The CRR market risk capital rules require that a firm obtains prior written permission from its regulators before using any internal model to calculate its risk-based capital requirement. GSBE has been granted temporary tolerance to use the Internal Model Approach (IMA).

For positions captured by GSBE's model permission, the capital requirements for market risk are calculated using the following internal models: Value-at-Risk (VaR), Stressed VaR (SVaR), and Incremental Risk Charge (IRC). In addition, Standardised Rules, in accordance with Title IV of Part Three of CRR, are used to calculate capital requirements for market risk for certain securitised and non-securitised positions by applying risk-weighting factors predetermined by regulators, to positions after applicable netting is performed. RWAs for market risk are the sum of each of these measures multiplied by 12.5. An overview of each of these measures is provided below.

Regulatory VaR

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

VaR used for regulatory capital requirements (Regulatory VaR) differs from risk management VaR due to different time horizons and confidence levels (10-day and 99% for Regulatory VaR vs. one-day and 95% for risk management VaR), as well as differences in the scope of positions on which VaR is calculated. The 10-day VaR is based on scaling the 1-day VaR by the square root of 10.

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

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

Table 15 presents our period end, maximum, minimum and average daily GSBE 99% 10-day Regulatory VaR over the twelve-month period ended December 2020.

Stressed VaR

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

Table 15 presents our period end, maximum, minimum and average weekly GSBE 99% 10-day SVaR over the twelve-month period ended December 2020.

Incremental Risk

Incremental risk is the potential loss in value of non-securitised positions due to the default or credit migration of issuers of financial instruments over a one-year time horizon. As required by the CRR market risk regulatory capital rules, this measure is calculated at a 99.9% confidence level over a one-year time horizon. It uses a multi-factor model assuming a constant level of risk. When assessing the risk, we take into account market and issuer-specific concentration, credit quality, maturity of the debt and correlation of default and migration risk. The average liquidity horizon as of December 2020 was 3 months.

Table 15 presents our period end, maximum, minimum and average weekly GSBE Incremental risk measure over the twelve-month period ended December 2020

Table 15: IMA values for trading portfolios

€ in thousands		As of December 2020
VaR (10 day 99%)		
1	Maximum value	18,140
2	Average value	1,378
3	Minimum value	-
4	Period end	11,029
SVaR (10 day 99%)		
5	Maximum value	31,001
6	Average value	5,606
7	Minimum value	-
8	Period end	27,374
IRC (99.9%)		
9	Maximum value	101,571
10	Average value	15,919
11	Minimum value	-
12	Period end	63,046
Comprehensive risk capital charge (99.9%)		
13	Maximum value	-
14	Average value	-
15	Minimum value	-
16	Period end	-

The table below presents the capital requirements and RWA under the IMA for Market Risk as of December 31, 2020.

Table 16: Market Risk under the IMA

€ in thousands		As of December 2020	
		RWAs	**Capital requirements**
1	**VaR (higher of values a and b)**	**€ 214,479**	**€ 17,158**
(a)	Previous day's VaR (Article 365(1) of the CRR (VaRt-1))		11,029
(b)	Average of the daily VaR (Article 365(1)) of the CRR on each of the preceding 60 business days (VaRavg) x multiplication factor (mc) in accordance with Article 366 of the CRR		17,158
2	**SVaR (higher of values a and b)**	**€ 816,430**	**€ 65,314**
(a)	Latest SVaR (Article 365(2) of the CRR (SVaRt-1))		27,374
(b)	Average of the SVaR (Article 365(2) of the CRR) during the preceding 60 business days (SVaRavg) x multiplication factor (ms) (Article 366 of the CRR)		65,314
3	**IRC (higher of values a and b)**	**€ 788,071**	**€ 63,046**
(a)	Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 of the CRR)		63,046
(b)	Average of the IRC number over the preceding 12 weeks		58,913
4	**Comprehensive risk measure (higher of values a, b and c)**	**-**	**-**
(a)	Most recent risk number for the correlation trading portfolio (Article 377 of the CRR)		-
(b)	Average of the risk number for the correlation trading portfolio over the preceding 12 weeks		-
(c)	8% of the own funds requirement in the standardised approach on the most recent risk number for the correlation trading portfolio (Article 338(4) of the CRR)		-
5	**Other**	**€ 95,313**	**€ 7,625**
6	**Total**	**€ 1,914,293**	**€ 153,143**

Table 17: RWA flow statements of market risk exposures under the IMA

€ in thousands								As of December 2020
		VaR	**SVaR**	**IRC**	**Comprehensive risk measure**	**Other**	**Total RWAs**	**Total capital requirements**
1	**RWAs at previous reporting period**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
1a	*Regulatory adjustment*	-	-	-	-	-	-	-
1b	**RWAs at previous reporting period**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2	Movement in risk levels	137,860	342,169	644,571	-	284,063	1,408,662	112,693
3	Model updates/changes	-	-	143,500	-	-	143,500	11,480
8a	***RWAs at the end of the reporting period***	**137,860**	**342,169**	**788,071**	**-**	**284,063**	**1,552,162**	**124,173**
8b	*Regulatory adjustment*	76,619	474,262	-	-	(188,750)	362,131	28,970
8	**RWAs at the end of the reporting period**	**€ 214,479**	**€ 816,430**	**€ 788,071**	**-**	**€ 95,313**	**€ 1,914,293**	**€ 153,143**

Model Review and Validation

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

These models are regularly reviewed and enhanced in order to incorporate changes in the composition of positions included in market risk measures, as well as variations in market conditions. Prior to implementation in production, any changes to those models are subject to validation and approval by Model Risk Management.

Regulatory VaR Backtesting Results

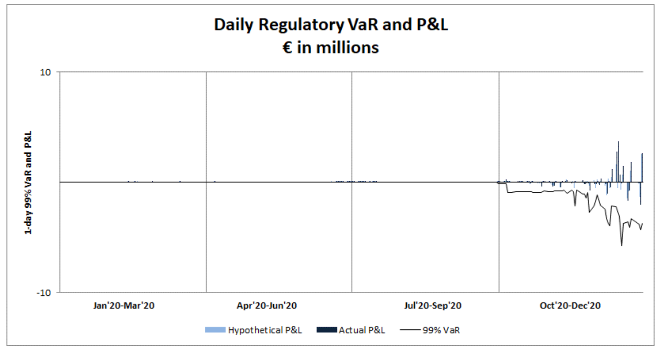
As required by the CRR market risk capital rules, we validate the accuracy of our Regulatory VaR models by backtesting the output of such models against daily loss results. The number of exceptions (that is, the number of overshootings based on comparing the higher of positional or actual losses to the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

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

GSBE's hypothetical losses or actual losses observed on a single day did not exceed our 99% one-day Regulatory VaR during 12 months preceding December 2020. Note that, although a one-day time horizon is used for backtesting purposes, a 10-day time horizon is used, as described earlier, to determine RWAs associated with Regulatory VaR.

The table below presents our 99% one-day Regulatory VaR and hypothetical and actual PnL during the previous 12 months.

Table 18: Comparison of VaR estimates with gains/losses



The table below summarizes the number of reported excesses for GSBE for the previous 12 months.

		Number of reported excesses	
	Multiplier	**Hypothetical**	**Actual**
Backtesting			
GSBE	**3.00**	**0**	**0**

Stress Testing

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

For a detailed description of the bank's stress testing practices, see "Market Risk Management –Stress Testing" within "Management Report" of GSBE's 2020 Financial Statements.

The table below presents the components of own funds requirements under Standardised approach as of December 31, 2020.

Table 19: Market Risk under the Standardised Approach

€ in thousands		As of December 2020	
		RWAs	**Capital requirements**
	Outright products		
1	Interest rate risk (general and specific)	€ 291,118	€ 23,289
2	Equity risk (general and specific)	-	-
3	Foreign exchange risk	50,883	4,071
4	Commodity risk	-	-
4a	Collective investment undertakings	-	-
	Options		
5	Simplified approach	-	-
8	Securitisation (specific risk)	-	-
9	**Total**	**€ 342,001**	**€ 27,360**

Interest Rate Sensitivity

Interest Rate Risk in the Banking Book

Our exposure to interest rate risk in the banking book (IRRBB) arises from differences in interest earned or paid as interest rates change, due to the reset characteristics of our assets and liabilities.

The impact of an interest rate shock on the economic value of the bank’s banking book is simulated monthly, utilizing multiple assumptions. GSBE uses the same metrics in its internal risk management as it applies for the disclosure, assuming a spot balance sheet shock with instantaneous and unexpected parallel shift in interest rates (+/-100 basis points). In the scenario -100 basis points, the yield curve is not floored, allowing interest rates to go negative.

As of December 31, 2020, the Economic Value of Equity (EVE) is disclosed in GSBE’s 2020 Financial Statements. The IRRBB exposure is materially Euro denominated and other currencies are not material. For further information regarding IRRBB, see “Market Risk Management – Interest Rate Risk in the banking Book (IRRBB)” within “Management Report” of GSBE’s 2020 Financial Statements.

Operational Risk

Overview

Operational risk is the risk of an adverse outcome resulting from inadequate or failed internal processes, people, systems, or from external events. GSBE's exposure to operational risk arises from routine processing errors, as well as extraordinary incidents, such as major systems failures or legal and regulatory matters.

- Potential types of loss events related to internal and external operational risk include:
- Clients, products and business practices;
- Execution, delivery and process management;
- Business disruption and system failures;
- Employment practices and workplace safety;
- Damage to physical assets;
- Internal fraud; and
- External fraud.

Operational Risk, which is independent of revenue-producing units and reports to GS Group's chief risk officer and locally into GSBE'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 GSBE's exposure to operational risk at levels that are within its risk appetite.

Operational Risk Management Process

GSBE's process for managing operational risk includes the critical components of the risk management framework described in "Overview and Structure of Risk Management" in the Management Report within the bank's 2020 Annual Financial Report.

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

The firm maintains a comprehensive control framework designed to provide a well-controlled environment to minimise operational risks. The GSBE 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 firm, and monitors the effectiveness of operational risk management.

GSBE's operational risk management framework is designed to comply with the operational risk measurement rules under the Capital Framework at GS Group level and has evolved based on the changing needs of its businesses and regulatory guidance, including at the GSBE entity level.

A comprehensive data collection process is in place, including firmwide 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, the policies require that the events be documented and analysed to determine whether changes are required in the systems and/or processes to further mitigate the risk of future events.

GSBE uses operational risk management applications to capture and organise operational risk event data and key metrics. One of the key risk identification and assessment tools is an operational risk and control self-assessment process, which is performed by managers across the firm. 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

GSBE measures operational risk exposure using both statistical modelling and scenario analyses, which involves qualitative and quantitative assessments of internal and external operational risk event data and internal control factors for each of our businesses. Operational risk measurement also incorporates an assessment of business environment factors, including:

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

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

Model Review and Validation

The models used to measure operational risk exposure are independently reviewed, validated and approved by the Model Risk Management.

Capital Requirements

The operational risk capital requirements for GSBE is calculated under the Basic Indicator Approach in accordance with the CRR.

Table 20: Operational Risk Capital Requirement

€ in thousands	**As of December 2020**
Basic Indicator Approach	€ 25,055

Model Risk

Overview

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

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

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

Model Review and Validation Process

Model Risk Management consists of quantitative professionals who perform an independent review, validation and approval of the firm's models. This review includes an analysis of the model documentation, assumptions, input and output data, limitations and uncertainties, independent testing, an assessment of the appropriateness of the methodology used, verification of compliance with model development and implementation standards, and assessment of adequacy of the ongoing monitoring plan.

The firm regularly refines and enhances models to reflect changes in market or economic conditions and its business mix. All models are reviewed on an annual basis, and new models or significant changes to existing models and their assumptions are approved prior to implementation.

The model validation process incorporates a review of models and their assumptions in order to critically evaluate and verify the model's conceptual soundness, suitability of calculation techniques, accuracy and sensitivity to input parameters and assumptions, as well as the scope of testing performed by the model developers

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

Leverage Ratio

GSBE 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. In June 2019, the European Commission published updates to the CRR to implement a 3% minimum leverage ratio requirement for certain E.U. financial institutions, including GSBE. This leverage ratio compares 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. The required minimum leverage ratio became effective for GSBE on 27 June 2021. This leverage ratio is based on our current interpretation and understanding of this rule and may evolve in the future.

Table 21: Leverage Ratio[7]

€ in thousands	As of December 2020
Tier 1 Capital	€ 3,180,504
Leverage Ratio Exposure	€ 31,711,938
Leverage Ratio	10.03%

[7] The ratio is calculated using the regulatory capital resources as of December 31, 2020 excluding 2020 year-end profits in accordance with Article 26(2) of the regulation 575/2013. Including such profits would, ceteris paribus, increase the Leverage Ratio to 10.33%.

The following tables present further information on the leverage ratio. Table 22 reconciles the exposure measure to the balance sheet of GSBE. Table 23 breaks down the exposures from on-balance sheet assets by trading and banking book. Table 24 gives further details on the adjustments and drivers of the leverage ratio.

Table 22: Summary Reconciliation of Accounting Assets and Leverage Ratio Exposures

€ in thousands	As of December 2020
Total assets as per published financial statements	**€ 56,795,861**
Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	-
Adjustment for fiduciary assets recognised on the balance sheet pursuant to the applicable accounting framework but excluded from the leverage ratio exposure measure in accordance with Article 429(13) of Regulation (EU) No 575/2013 "CRR"	-
Adjustments for derivative financial instruments*	(24,182,513)
Adjustments for securities financing transactions*	59,169
Adjustment for off-balance sheet items*	944,870
Adjustment for intragroup exposures excluded from the leverage ratio exposure measure in accordance with Article 429(7) of Regulation (EU) No 575/20131	-
Adjustment for exposures excluded from the leverage ratio exposure measure in accordance with Article 429(14) of Regulation (EU) No 575/2013	(1,853,845)
Other adjustments	(51,603)
Total leverage ratio exposure	**€ 31,711,938**

*Differences between the accounting values recognised as assets on the balance sheet and the leverage ratio exposure values. A further breakdown of these amounts can be found in Table 24.

Table 23: On-Balance Sheet Exposures

€ in thousands	As of December 2020
Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	**€ 9,751,203**
Trading book exposures	**€ 6,332,764**
Banking book exposures, of which:	**€ 3,418,439**
Covered bonds	-
Exposures treated as sovereigns	2,635,011
Exposures to regional governments, MDB, international organisations and PSE not treated as sovereigns	112
Institutions	518,517
Secured by mortgages of immovable properties	-
Retail exposures	-
Corporate	142,154
Exposures in default	-
Other exposures	122,646

Table 24: Leverage Ratio Common Disclosure

€ in thousands	As of December 2020
On-balance sheet exposures (excluding derivatives and SFTs)	
On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	€ 17,233,692
Asset amounts deducted in determining Tier 1 capital	(51,603)
Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	**€ 17,182,090**
Derivative exposures	
Replacement cost associated with all derivatives transactions (ie net of eligible cash variation margin)	2,329,100
Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	15,424,719
Exposure determined under Original Exposure Method	-
Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework	-
Deductions of receivables assets for cash variation margin provided in derivatives transactions	(5,497,200)
Exempted CCP leg of client-cleared trade exposures	(777,149)
Adjusted effective notional amount of written credit derivatives	53,757,473
Adjusted effective notional offsets and add-on deductions for written credit derivatives	(53,056,791)
Total derivative exposures	**€ 12,180,153**
SFT exposures	
Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	4,475,743
Netted amounts of cash payables and cash receivables of gross SFT assets	(1,276,241)
Counterparty credit risk exposure for SFT assets	59,169
Derogation for SFTs: Counterparty credit risk exposure in accordance with Article 429b(4) and 222 of Regulation (EU) No 575/2013	-
Agent transaction exposures	-
Exempted CCP leg of client-cleared SFT exposure	-
Total securities financing transaction exposures	**€ 3,258,671**
Other off-balance sheet exposures	
Off-balance sheet exposures at gross notional amount	3,925,683
Adjustments for conversion to credit equivalent amounts	(2,980,813)
Other off-balance sheet exposures	**€ 944,870**
Exempted exposures in accordance with CRR Article 429(7) and (14) (on and off balance sheet)	
Intragroup exposures (solo basis) exempted in accordance with Article 429(7) of Regulation (EU) No 575/2013 (on and off balance sheet)	-
Exposures exempted in accordance with Article 429(14) of Regulation (EU) No 575/2013 (on and off balance sheet)	(1,853,845)
Capital and total exposures	
Tier 1 capital	€ 3,180,504
Total leverage ratio exposures	**€ 31,711,938**
Leverage ratio	
Leverage ratio	**10.03%**
Leverage ratio (excluding the impact of any applicable temporary exemption of central bank exposures)	**9.48%**
Choice on transitional arrangements and amount of derecognised fiduciary items	
Choice on transitional arrangements for the definition of the capital measure	-
Amount of derecognised fiduciary items in accordance with Article 429(11) of Regulation (EU) No 575/2013	-

Factors impacting the Leverage Ratio

The leverage ratio has increased from 9.8% in December 2019 to 10.0% in December 2020 due to increase in Tier 1 capital driven by capital injections during the year, partly offset by increases in On and Off Balance Sheet exposures reflecting an increase in Balance Sheet size and business activity throughout the year.

GSBE also applied the “CRR quick fix” allowing for the exemption of eligible central bank cash balances from the Leverage Exposures per Article 500b of Regulation (EU) No 575/2013 as amended by Regulation (EU) 2019/876 and Regulation (EU) 2020/873. The ratio without application of this exemption would have been 9.5%.

Risk of Excessive Leverage

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

The GSBE ALCO is the primary governance committee for the management of the bank’s balance sheet. The GSBE ALCO is responsible for maintaining leverage ratio in accordance with the levels expressed in the bank’s risk appetite statement.

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

Monthly leverage ratio monitoring is conducted for GSBE. Leverage ratio monitoring thresholds have been established for GSBE and reported to the ALCO, CRO, Chief Financial Officer, Chief Executive Officer, Risk Committee and Board if the ratio drops below these escalation thresholds.

Potential new transactions which could have a material impact on GSBE capital and/or leverage position are escalated to and approved by Controllers and other managers from independent control and support functions.

Capital Adequacy

Overview

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

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

Internal Capital Adequacy Assessment Process

We perform an ICAAP with the objective of ensuring that GSBE is appropriately capitalised relative to the risks in our business. We assess capital adequacy based on two complementary perspectives, the Economic Internal Perspective and the Normative Perspective. In both perspectives, we define and articulate capital adequacy based on the comparison of available capital resources against the amount of capital needed to mitigate material risks.

In the Economic Internal Perspective, we define our internal capital adequacy based on the ratio of our internal capital to the sum of risks that could have a material impact on our capital position from an economic (i.e. fair market value) perspective over a one-year horizon, quantified using internal methodologies. In the Normative Perspective capital adequacy is considered from a regulatory and accounting view, by comparing the regulatory definition of capital resources to regulatory capital requirements for material risks. We assess our ability to maintain sufficient capital to meet Overall Capital Requirements (OCR) in a baseline scenario and Total SREP Capital Requirements (TSCR) under an adverse scenario over a three-year projection horizon.

Our goal is to hold sufficient capital to ensure we remain adequately capitalised in both the Economic Internal Perspective and in the Normative Perspective.

Own Funds Template

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

Table 25: Own Funds Disclosure

€ in thousands	**As of December 2020**
Capital instruments and the related share premium accounts	€ 311,271
Paid up capital instruments	310,366
Share premium	905
Retained earnings	366,236
Statutory Reserves	2,586,307
Other Comprehensive Income	(31,707)
Common Equity Tier 1 (CET1) capital before regulatory adjustments	**€ 3,232,107**
Additional value adjustments	(11,018)
Intangible assets (net of related tax liability)	(40,193)
Deferred Tax Assets that rely on future profitability, excluding those arising from temporary differences	(392)
Total regulatory adjustments to Common equity Tier 1 (CET1)	**€ (51,603)**
Common Equity Tier 1 (CET1) capital	**€ 3,180,504**
Additional Tier 1 (AT1) capital	**-**
Tier 1 capital (T1 = CET1 + AT1)	**€ 3,180,504**
Tier 2 Long Term Sub-Debt	20,000
Tier 2 (T2) capital	**€ 20,000**
Total capital (TC = T1 + T2)	**€ 3,200,504**
Total risk weighted assets	**€ 7,957,105**
Common Equity Tier 1 (as a percentage of risk exposure amount)	**39.97%**
Tier 1 (as a percentage of risk exposure amount)	**39.97%**
Total capital (as a percentage of risk exposure amount)	**40.22%**
Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus the systemically important institution buffer (G-SII or O-SII buffer), expressed as a percentage of risk exposure amount)	**7.76%**
Of which: Capital conservation buffer requirement	**2.50%**
Of which: Counter cyclical buffer requirement	**0.01%**
Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	**35.5%**
Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	**€ 141,495**
Direct and indirect holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	**€ 1,744**

GSBE does not make use of any transitional provisions for calculating its regulatory capital resources, including transitional arrangements on IFRS9 and hence no further disclosures are made in this regard.

Countercyclical Capital Buffer Template

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

Table 26: Countercyclical Capital Buffer

€ in thousands	**As of December 2020**
Total risk exposure amount	**€ 7,957,105**
Countercyclical buffer rate	**0.01%**
Countercyclical buffer requirement	**1,015**

The geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer is broken down in Table 27.

As of December 31, 2020 GSBE had recognised exposures to counterparties from Czech Republic, Hong Kong, Luxembourg and Norway as implemented in the calculation of this buffer according to rates set by the ESRB. These are shown as separate rows below with their respective contributions to own funds requirements for GSBE.

Table 27: Geographical Distribution of Credit Exposures Relevant for the Calculation of the Buffer

€ in thousands — As of December 2020

Breakdown by Country	General credit exposures		Trading book exposure		Securitisation exposure		Own funds requirements				Own funds require-ment weights	Counter-cyclical capital buffer rate
	Exposure value for SA	Exposure value for IRB	Sum of long and short position of trading book	Value of trading book exposure for internal models	Exposure value for SA	Exposure value for IRB	Of which: General credit exposures	Of which: Trading book exposures	Of which: Securiti-sation exposures	Total		
Czech Republic	1,665	-	-	10,546	-	-	133	844	-	977	0.3%	0.50%
Hong Kong, Special Administrative Region Of China	-	-	-	36,490	-	-	-	2,919	-	2,919	1.0%	1.00%
Luxembourg	20,280	-	-	32,284	-	-	499	293	-	792	0.3%	0.25%
Norway	-	-	-	2	-	-	-	109	-	109	0.0%	1.00%
Other	789,634	-	138,732	18,128,105	17,401	-	35,331	250,701	1,066	287,098	98.4%	0.00%
Total	**€ 811,579**	**-**	**€ 138,732**	**€ 18,207,427**	**€ 17,401**	**-**	**€ 35,963**	**€ 254,865**	**€ 1,066**	**€ 291,895**	**100.0%**	**0.01%**

Capital Instruments

The following table summarises the main features of capital instruments for GSBE as of December 2020

Table 28: GSBE Capital Instruments' Main Features Template

€ in thousands		**As of December 2020**
Issuer	GSBE	GSBE
Unique Identifier (e.g. CUSIP, ISIN, or Bloomberg identifier for private placement)	N/A	N/A
Governing law(s) of the instrument	Germany	Germany
Transitional CRR rules	Common Equity Tier 1	Tier 2
Post-transitional CRR rules	Common Equity Tier 1	Tier 2
Eligible at solo/(sub-) consolidated/solo&(sub-) consolidated	Solo	Solo
Instrument type	Ordinary share capital	Subordinated debt
Amount recognised in regulatory capital	€ 310,366	€ 20,000
Nominal amount of instrument	€ 310,366	€ 20,000
Issue Price	At par	At par
Redemption Price	At par	At par
Accounting Classification	Shareholders' equity	Liability - amortised cost
Original date of issuance[8]	01/07/2011; 25/02/2019; 07/06/2020	22/03/2004; 15/04/2008
Perpetual or dated	Perpetual	Perpetual
Original maturity date	No maturity	No maturity
Issuer call subject to prior supervisory approval	No	No
Option call date, contingent call dates and redemption amount	N/A	N/A
Subsequent call dates, if applicable	N/A	N/A
Fixed or floating dividend / coupon	N/A	Floating
Coupon rate and any related index	No	3-months-euro-libor plus 150 bps
Existence of a dividend stopper	No	No
Fully discretionary, partially discretionary or mandatory (in terms of timing)	Fully Discretionary	Mandatory
Fully discretionary, partially discretionary or mandatory (in terms of amount)	Fully Discretionary	Mandatory
Existence of step up or other incentive to redeem	No	No
Noncumulative or cumulative	Noncumulative	Noncumulative
Convertible or non-convertible	Nonconvertible	Nonconvertible
If convertible, conversion trigger(s)	N/A	N/A
If convertible, fully or partially	N/A	N/A
If convertible, conversion rate	N/A	N/A
If convertible, mandatory or optional conversion	N/A	N/A
If convertible, specify instrument type convertible into	N/A	N/A
If convertible, specify issuer of instrument it converts to	N/A	N/A
Write-down features	No	No
If write-down, write-down trigger(s)	N/A	N/A
If write-down, full or partial	N/A	N/A
If write-down, permanent or temporary	N/A	N/A
If temporary write-down, description of write-up mechanism	N/A	N/A
Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Tier 2	Repayment of loan only after claims of other, non-subordinated creditors
Non-compliant transitioned features	No	No
If yes, specify non-compliant features	N/A	N/A

Link to the full terms and conditions of capital instrument can be found here:
https://www.goldmansachs.com/disclosures/gsbank-europe-se-disclosures.html

Key changes during the period

On June 7, 2020, 366,100 shares of € 1 each was allotted to Goldman Sachs International (GSI) for contribution and transfer of the businesses pertaining to GSI branches into GSBE.

GSBE's shareholders injected a total of € 2.5bn into free capital reserves over the course of 2020.

[8] First date of ordinary share issuance

Governance Arrangements

GSBE is managed by its Executive Board under its own responsibility. The Executive Board carries the full responsibility for the management of the bank in accordance with the German Stock Corporation Act. Its members are appointed and dismissed by the Supervisory Board, an independent body.

Recruitment and Diversity Policy

In the selection of the members of the Executive Board and Supervisory Board, a candidate for each role is considered when, in addition to the actual knowledge, capabilities and experience required by regulations, professional and personal competence of the candidates is also demonstrated. GSBE thereby places the highest requirements on persons who are considered for selection.

GSBE considers diversity to be a priority for promoting the participation of qualified women in leadership positions. As part of the Goldman Sachs Group, GSBE implements the global principles, measures, and goals for diversity at Goldman Sachs. Female and male candidates are given equal consideration. There are no goals or targets to achieve a specified ratio of female members of the Executive Board or Supervisory Board. As of December 31, 2020 female members comprised 50% of the Supervisory Board.

We have set out below the biographies of the members of the Executive Board and the Supervisory Board of GSBE as of December 31, 2020, together with the positions and number of directorships they held at that date, including those with other Goldman Sachs affiliates.

Risk Committee

The Supervisory Board of GSBE has not formed its own risk committee, since the Supervisory Board consists of only four members and the tasks of a risk committee are performed by the entire Supervisory Board [9]. The Supervisory Board ordinarily meets at least once per calendar quarter.

Description of the information flow on risk to the management body

For a description of the information flow on risk to the management body please refer to Risk Management section on page 10.

[9] Risk Committee has been established as of May 26, 2021, as the Supervisory Board has been expanded with another independent Supervisory Board member in April 2021.

Table 29a: GSBE Executive Board of Directors

Name	Background	Directorships[10]
M. Bock	Matthias Bock joined the GSBE Executive Board in July 2011 and is general counsel of GSBE. Within the Executive Board Dr. Bock is also responsible on an interim basis for oversight of the Risk Division. In addition to his duties for GSBE he also oversees the Legal department in Moscow. He joined Goldman Sachs in 2000 in London and transferred to Frankfurt in 2007. He is deputy chairman of the Association of Banks in Hesse and holds different positions within the German Banking Association[11] (chairman of its Committee for Foreign Banks, member of its Legal Committee). He also serves on the board of the Civitas-Bernhard-Vogel foundation. Dr. Bock studied in Heidelberg (First State Exam 1992), Hamburg (Second State Exam and Dr. iur. 1995) and at the University of Chicago (LLM 1996). He is admitted to the New York Bar.	**1**
T. Degn-Petersen	Thomas Degn-Petersen is the chief operating officer of GSBE, having joined the GSBE Executive Board in March 2018. He is also a member of the Board of Goldman Sachs Poland Services Sp. z.o.o., and a non-executive director of Goldman Sachs Saudi Arabia. Mr. Degn-Petersen also serves as the co-branch manager of Goldman Sachs International Bank, Frankfurt. In addition, Mr. Degn-Petersen is a member of the EMEA Operational Risk and Resilience Committee, the Goldman Sachs Bank Europe Risk Committee and is member of the International Banking Committee of the German Banking Association. Previously, Mr. Degn-Petersen was co-head of Controllers in India and global head of the Shared Services Management office from 2014 to 2018. Before that, he relocated to Moscow in 2007 as head of Finance and was head of the Federation in Moscow from 2009 to 2013. He is a qualified accountant and member of the Chartered Institute of Management Accountants. Mr. Degn-Petersen earned a BSc (Hons) in Management Studies from the University of Surrey in 1996.	**1**
W. Fink	Wolfgang Fink is the chief executive officer of GSBE, having joined the GSBE Executive Board in April 2015. He is responsible for GSBE´s Investment Banking, Global Markets, Asset Management and Private Wealth Management Divisions. In addition, he is member of the firm´s EMEA Conduct Committee and the European Management Committee and head of Goldman Sachs in Germany and Austria[12] Dr. Fink joined Goldman Sachs in Mergers & Acquisitions in London in 1993 and later worked in the Principal Investment Area. He subsequently served as co-head of Investment Banking for Russia and Central and Eastern Europe before heading the European Industrials Group in Investment Banking. Dr. Fink was named managing director in 2004 and partner in 2008. Dr. Fink earned an MSc from Vienna University and a PhD in Economics from the European Business School.	**1**

[10] In accordance with Article 91(3), (4) and (5) of Directive 2013/36/EU, we counted directorships within the same group as a single directorship and did not count directorships in organisations which do not pursue predominantly commercial objectives. Taking into account such directorships, Dr. Bock holds five directorships, Mr. Degn-Petersen holds five directorships, and Dr. Fink holds three directorships.

[11] The Association of Banks in Hesse is renamed to Bankenverband Mitte e.V. as of January 1, 2021.

[12] In April 2021 Dr. Fink joined the Board of the Bundesverband Deutscher Banken e.V.

Table 29b: GSBE Supervisory Board of Directors[13]

Name	Background	Directorships[14]
S. A. Boyle	Ms. Boyle joined the GSBE Supervisory Board in July 2015. Ms. Boyle is also a director at GSI and a member of the Supervisory Boards of Goldman Sachs Group Europe SE and Goldman Sachs Europe SE. She is head of Human Capital Management (HCM) in EMEA and is responsible for HCM manager experience functions globally. She is a member of the European Management Committee, Firmwide Conduct and Operational Risk Committee, EMEA Culture and Conduct Risk Committee and the Vendor Management Operating Committee. Ms. Boyle joined Goldman Sachs in 1999, before which she was a partner at Mills & Reeve Solicitors. Ms. Boyle is also a non-executive director of the Royal Air Force.	**1**
D. W. McDonogh	Mr. McDonogh is the Chair of the Supervisory Board, having joined the GSBE Supervisory Board in February 2018. Mr. McDonogh is a director at GSI and Goldman Sachs (UK) L.L.C. and a non-executive director of Goldman Sachs Bank USA. He is the chief executive officer of GSIB and chief operating officer for EMEA. Mr. McDonogh chairs the Supervisory Boards of Goldman Sachs Group Europe SE and Goldman Sachs Europe SE. He serves on a number of the firm's committees including the European Management Committee, Firmwide Enterprise Risk Committee, Firmwide Risk Committee, Firmwide Conduct Committee and the Firmwide Asset Liability Committee. Additionally, Mr. McDonogh chairs the GSIB Management Committee, co-chairs the GSI Risk Committee, the GSIB Risk Committee and the EMEA Conduct Committee. He joined Goldman Sachs in 1994. Mr. McDonogh earned a degree in Finance from the University of Limerick in Ireland.	**1**
E. E. Stecher	Ms. Stecher is the Deputy Chair of the Supervisory Board, having joined the GSBE Supervisory Board in February 2018. She is a director at GSI and a member of the GSI Remuneration Committee. She also chairs the Goldman Sachs Bank USA Board of Directors and is the Deputy Chair of the Supervisory Boards of Goldman Sachs Group Europe SE and Goldman Sachs Europe SE and a chair of boards of directors of the Goldman Sachs Philanthropy Fund. She is chair of the Consent Order Oversight Sub-Committee, and a member of the Firmwide Reputational Risk Committee and Firmwide Enterprise Risk Committee. Ms. Stecher is a trustee emeritus of Columbia University and remains involved in other roles at Columbia University. Ms. Stecher joined Goldman Sachs in 1994, prior to which she was a partner at Sullivan & Cromwell. Ms. Stecher earned a BA from the University of Minnesota and a JD from Columbia Law School.	**1**
Dr. Feuring	Dr. Feuring joined the GSBE Supervisory Board as an independent Supervisory Board member in February 2020. Dr. Feuring is Of Counsel at Sullivan & Cromwell LLP. Before joining Sullivan & Cromwell as a partner in 2001, Dr. Feuring was a partner of Freshfields Bruckhaus Deringer and predecessor firms and worked in the legal department of Deutsche Bank AG. He was admitted to the bar in 1981.	

[13] The table reflects the members of the Supervisory Board as of December 31, 2020. Ulrich Pukropski joined the GSBE Supervisory Board as an independent member in April 2021.

[14] In accordance with Article 91(3), (4) and (5) of Directive 2013/36/EU, we counted directorships within the same group as a single directorship and did not count directorships in organisations which do not pursue predominantly commercial objectives. Taking into account such directorships, Ms. Boyle holds five directorships, Mr. McDonogh holds seven directorships and Ms. Stecher holds seven directorships.

Liquidity Risk Management

Introduction

Overview

The liquidity coverage ratio (LCR) is designed to ensure that a bank maintains an adequate amount of unencumbered high-quality liquid assets (HQLA) equal to or greater than the total net cash outflows (NCOs) over a prospective 30 calendar-day stress scenario. GSBE is subject to the liquidity requirements as set out in the European Commission Delegated Regulation 2018/1620 and Delegated Regulation 2015/61 to supplement Regulation No 575/2013 of the European Parliament and the Council with regard to liquidity coverage requirement for credit institutions. When we use the term "liquidity standards", we refer to the aforementioned regulations.

The EBA guidelines on LCR disclosure (EBA/GL/2017/01) require banks to disclose, on an annual basis, the average monthly LCR for the trailing twelve-months.

Liquidity Risk Management

Liquidity risk is the risk that the bank will be unable to fund itself or meet its liquidity needs in the event of bank-specific, broader industry, or market liquidity stress events. The bank has in place a comprehensive and conservative set of liquidity and funding policies. The bank'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.

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

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

Liquidity Coverage Ratio

GSBE's average monthly LCR for the trailing twelve-month period ended December 2020 was 240%. This ratio is based on our current interpretation and understanding of the liquidity standards and may evolve in the future.

The table below presents a breakdown of the bank's LCR calculated in accordance with the liquidity standards.

Table 30: Liquidity Coverage Ratio

	Twelve Months Ended December 2020
€ in millions	**Average Weighted**
Total high-quality liquid assets (HQLA)	**€ 2,382.45**
Net cash outflows	**€ 1,066.84**
Liquidity coverage ratio[15]	**240%**

We expect business-as-usual fluctuations in our client activity, business mix and overall market environment to affect our average LCR on an ongoing basis.

High-Quality Liquid Assets

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

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

GSBE's HQLA substantially consists of Level 1 assets.

Net Cash Outflows

Overview

The liquidity standards define NCOs as the net of cash outflows and inflows during a prospective stress period of 30 calendar days. The NCOs in GSBE are largely comprised of prospective outflows related to the company's unsecured funding and derivative positions and inflows related to short

[15] The ratio reported in this row is calculated as average of the monthly LCRs for the trailing twelve-month period and may not equal the calculation of ratio using component amounts reported in rows "Total high-quality liquid assets" and "Net cash outflows"

term placements with affiliates.

Unsecured and Secured Funding

Unsecured Net Cash Outflows

The company's sources of funding include

- Unsecured long-term borrowings, including registered bonds (Namensschuldverschreibungen), loan against borrower's notes (Schuldscheindarlehen) and funding from Group Inc. and affiliates.

- Time deposits and demand deposits from private bank clients, institutional clients and affiliates

The liquidity standards require that the NCOs calculation reflects a bank's upcoming maturities of unsecured long-term borrowing during a 30 calendar-day period, assuming no rollover of debt that matures. The liquidity standards also prescribe outflows related to a partial loss of deposits funding.

Secured Net Cash Outflows

GSBE funds inventory on a secured basis, through various secured funding transactions including repurchase agreements, securities loaned and other secured financings. In addition, we provide financing to our clients for their securities trading activities, as well as securities lending and other prime brokerage services.

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

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

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

Derivatives

Overview

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

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

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

GSBE enters into various types of derivatives, including futures, forwards, swaps and options.

Derivative Net Cash Outflows

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

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

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

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

Unfunded Commitments

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

Asset Encumbrance

Overview

Asset encumbrance refers to the pledging or use of an asset as a means to secure, collateralise or credit-enhance any on-balance-sheet or off-balance-sheet transaction from which it cannot be freely withdrawn. The majority of the encumbrance is driven by derivatives and secured funding activity. A portion of GSBE's assets are encumbered in currencies other than Euros. Asset encumbrance is an integral part of GSBE's liquidity, funding and collateral management process.

The tables in this section identify components of our encumbered and unencumbered assets for the period ended December 31, 2020. GSBE has migrated from German Generally Accepted Accounting Practices (GAAP) to International Financial Reporting Standards (IFRS) in 2020. The template results are based on reported metrics, which reflect accounting standards applied at the time. Median values are computed over the preceding 4 quarterly data points. This disclosure is being made in accordance with the format outlined in Commission Delegated Regulation (EU) 2017/2295 supplementing regulation (EU) No 575/2013 on the disclosure of encumbered and unencumbered assets.

Table 31: Encumbered and Unencumbered Assets

	Carrying Amount of Encumbered Assets		**Fair Value of Encumbered Assets**		**Carrying Amount of Unencumbered Assets**		**Fair Value of Unencumbered Assets**	
€ in thousands		**Of which notionally eligible EHQLA and HQLA**		**Of which notionally eligible EHQLA and HQLA**		**Of which notionally eligible EHQLA and HQLA**		**Of which notionally eligible EHQLA and HQLA**
Assets of the Reporting Institution [16]	**3,113**	**-**	**N/a[17]**	**N/a[17]**	**14,150**	**1,969**	**N/a[17]**	**N/a[17]**

[16] The figures in Table 32 are a subset of Assets of the Reporting Institution in Table 31

[17] Cells are marked N/A to indicate those components which are not reportable under EBA Guidelines

Table 32: Components of Encumbered and Unencumbered Assets[18]

€ in thousands	Carrying Amount of Encumbered Assets		Fair Value of Encumbered Assets		Carrying Amount of Unencumbered assets		Fair Value of Unencumbered Assets	
		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA
Equity Instruments	1	-	N/a[19]	N/a[19]	231	-	N/a[19]	N/a[19]
Debt Securities[20]	17	-	17	-	166	-	166	-
of which: covered bonds	-	-	-	-	-	-	-	-
of which: asset-backed securities	-	-	-	-	-	-	-	-
of which: issued by general governments	-	-	-	-	46	-	46	-
of which: issued by financial corporations	17	-	17	-	2	-	2	-
of which: issued by non-financial corporations	-	-	-	-	80	-	80	-
Other Assets	3,096	-	N/a[19]	N/a[19]	13,932[21]	1,969	N/a[19]	N/a[19]

[18] The figures in Table 32 are a subset of Assets of the Reporting Institution in Table 31
[19] Cells are marked N/A to indicate those components which are not reportable under EBA Guidelines
[20] Fair value is the same as carrying value for Debt Securities
[21] The majority of unencumbered Other Assets relate to derivative instrument

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

Table 33: Collateral Received

€ in thousands	Fair Value of Encumbered Collateral Received or Own Debt Securities Issued		Fair Value of Collateral Received or Own Debt Securities Issued Available for Encumbrance	
		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA
Collateral Received by the Reporting Institution[22,23]	660	628	831	630

[22]The figures shown in Table 34 are a subset of Collateral Received by the Reporting Institution in Table 33
[23]Collateral Received by the Reporting Institution does not include cash collateral which is included as an on-balance-sheet asset in Tables 31 and 32

Table 34: Components of Collateral Received[24]

€ in thousands	Fair Value of Encumbered Collateral Received or Own Debt Securities Issued		Fair Value of Collateral Received or Own Debt Securities Issued Available for Encumbrance	
		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA
Loans on Demand	-	-	-	-
Equity Instruments	2	-	202	55
Debt Securities	659	628	629	573
of which: covered bonds	-	-	3	-
of which: asset-backed securities	-	-	-	-
of which: issued by general governments	627	601	534	534
of which: issued by financial corporations[25]	1	-	38	9
of which: issued by non-financial corporations	32	27	26	8
Loans and advances other than loans on demand	-	-	-	-
Other Collateral Received	-	-	-	-
Own Debt Securities Issued other than Own Covered Bonds or ABSs	-	-	-	-
Own Covered Bonds and Asset-Backed Securities issued and not yet pledged	N/a[26]	N/a[26]	-	-
Total Assets, Collateral received and Own Debt Securities Issued	3,773	651	N/a[26]	N/a[26]

[24]The figures shown in Table 34 are a subset of Collateral Received by the Reporting Institution in Table 33

[25]HQLA balances reported in this row mainly comprise of securities issued by Multinational Development Banks and Public Sector Enterprises

[26]Cells are marked N/A to indicate those components which are not reportable under EBA Guidelines

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

Table 35: Sources of Encumbrance

€ in thousands	Matching Liabilities, Contingent Liabilities or Securities Lent	Assets, Collateral Received and Own Debt Securities Issued other than Covered Bonds and ABSs Encumbered
Carrying amount of selected financial liabilities[27]	11,173	3,741

[27]There may be a mismatch between liabilities and encumbered assets and collateral received driven by the accounting standard presentation of derivatives

Commentary

We view GSBE's level of asset encumbrance as being higher than the level of asset encumbrance implied in the preceding tables due to differences in the accounting standard presentation of derivatives and encumbrance methodology. In this disclosure, derivative instruments are reported in accordance with the applicable accounting standard. In addition, total assets include collateralised lending where the receivable is reported as a balance sheet asset in Tables 31 and 32 and the underlying collateral received is reported in Tables 33 and 34 resulting in double counting of these assets.

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

Remuneration Disclosures

Introduction

The following disclosures are made by Goldman Sachs Bank Europe SE ("GSBE") in accordance with Article 450 of the EU Capital Requirements Regulation No. 575/2013 ("CRR").

Remuneration Programme Philosophy

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

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

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

GS Group's Compensation Principles were approved by shareholders at the 2010 annual shareholders' meeting. In particular, effective remuneration practices should:

(i) Encourage a real sense of teamwork and communication, binding individual short-term interests to the institution's long-term interests;

(ii) Evaluate performance on a multi-year basis;

(iii) Discourage excessive or concentrated risk-taking;

(iv) Allow an institution to attract and retain proven talent; and

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

Remuneration Governance

The Compensation Committee

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

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

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

The Compensation Committee held 8 meetings in 2020 to discuss and make determinations regarding remuneration.

The members of the Compensation Committee at the end of 2020 were M. Michele Burns (Chair), Drew G. Faust, Ellen J. Kullman, Lakshmi N. Mittal and Adebayo O. Ogunlesi (ex-officio). None of the members of the Compensation Committee was an employee of the firm. All members of the Compensation Committee were "independent" within the meaning of the New York Stock Exchange Rules and the GS Group Board Policy on Director Independence.

GSBE Board Governance

The GSBE Executive Board ("Executive Board") is responsible for overseeing the development and implementation of the GSBE Compensation Policy. The GSBE Compensation Policy is designed to ensure alignment with GSBE's business and risk strategies. The Executive Board will ensure that the policy is subject to an independent internal review at least annually, and, as far as it applies to the compensation of the Executive Board, by the Supervisory Board of GSBE ("Supervisory Board"). The Executive Board will at least annually update the Supervisory Board on the GSBE Compensation Policy. In 2020, the Executive Board held 13 meetings.

Fixed and variable compensation for GSBE employees (including in its branches) is determined annually by the Executive Board or its delegate, based on proposals developed in the Firmwide global compensation process and in accordance with the Goldman Sachs Compensation Principles, the GSBE Compensation Policy and applicable statutory law. The Executive Board as a body approved at year-end the aggregate variable compensation spent across the entity, including GSBE branches.

Compensation of the members of the Executive Board is set each year by the Supervisory Board in accordance with the Goldman Sachs Compensation Principles, group-wide processes, the GSBE Compensation Policy and applicable statutory law.

Other Stakeholders

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

The GS Group's Chief Risk Officer ("CRO") presented an annual compensation-related risk assessment to the Compensation Committee, meeting jointly with the Risk Committee of the GS Board, to assist the Compensation Committee in its assessment of the effectiveness of the firm's remuneration programme, and particularly, whether the programme is consistent with the principle that variable remuneration does not encourage employees to expose the firm to imprudent risk. This assessment most recently occurred in December 2020.

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

External Consultants

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

For 2020, the Compensation Committee commissioned the advice of FW Cook.

Global Remuneration Determination Process

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

The process involves divisional compensation managers, divisional compensation committees, division heads, HCM, the Firmwide Management Committee (the firm's most senior leaders), as appropriate. In addition, as part of the remuneration determination process, members of the firm's Compliance, Risk, Employment Law Group and Employee Relations functions make arrangements for divisional management to take into consideration certain compliance, risk or control matters when determining remuneration of individuals. Before any individual remuneration decisions are finalised, Employee Relations and the Employment Law Group assess the recommended remuneration for relevant individuals in the context of overall performance and other factors, and recommendations are reviewed with respect to comparators.

Additionally, recommendations developed via the global remuneration determination process for GSBE employees are presented to the Executive Board for approval, and recommendations developed for Executive Board members are presented to the Supervisory Board for approval.

Link Between Pay and Performance

In 2020, annual remuneration for employees generally comprised fixed remuneration (including base salary) and variable remuneration. The firm's remuneration practices provide for variable remuneration determinations to be made on a discretionary basis. Variable remuneration is based on multiple factors and is not set as a fixed percentage of revenue or by reference to any other formula. Firmwide performance is a key factor in determining variable remuneration.

The firm is committed to aligning variable remuneration with performance. In order to do so, the performance of the firm, division and individual over the past year, as well as over prior years, are taken into account. The firm believes that the firm's senior leaders have responsibility for overall performance and, as a result, senior employees have experienced more volatility in their remuneration year-over-year, particularly in periods when the firm's performance declined significantly.

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

Performance Measurement

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

Firmwide performance

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

- Return on average common shareholders' equity;
- Diluted earnings per common share;
- Book value per share;
- Net revenues

Divisional performance

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

Individual performance

Employees are evaluated annually as part of the performance review feedback process. This process reflects input from a number of employees, including supervisors, peers and those who are junior to the employee, regarding an array of performance measures. The performance evaluations for 2020 included assessments of Teamwork and Collaboration (One GS); Compliance, Risk Management, Code of Conduct, and Firm Reputation; Sensitivity to Risk and Control (revenue-producing employees); Control Side Empowerment (control functions); and Culture.

Risk Adjustment

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

The firm takes risk, including conduct risk, into account both on an ex-ante and ex-post basis when setting the amount and form of variable remuneration for employees. Different lines of business have different risk profiles and these are taken into account when determining remuneration. These include credit, market, liquidity, operational, reputational, legal, compliance and conduct risks. Guidelines are provided to assist compensation managers when applying discretion during the remuneration process to promote consistent consideration of the different risks presented by the firm's businesses. Further, to ensure the independence of control function employees, remuneration for those employees is not determined by individuals in revenue-producing positions but rather by the management of the relevant control function.

Consistent with prior years, for 2020 certain employees receive a portion of their variable remuneration as an equity-based award that is subject to a number of terms and conditions that could result in forfeiture or recapture. For further details, see "Structure of Remuneration" below.

In the 2020 annual compensation-related risk assessment presented to the Compensation Committee, meeting jointly with the Risk Committee of the GS Board, GS Group's CRO confirmed that the various components of the firm's remuneration programmes and policies (for example, process, structure and governance) balanced risk and incentives in a manner that does not encourage imprudent risk-taking. In addition, the CRO stated that the firm has a risk management process that, among other things, is consistent with the safety and soundness of the firm and focuses on our:

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

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

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

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

Structure of Remuneration

In accordance with a resolution of the shareholders of GSBE, the variable component of remuneration paid to all employees identified under Article 92(3) of Directive 2013/36/EU as "Risk Taker" of GSBE shall not exceed 200% of the fixed component. Control functions shall not exceed 50% of the fixed component. The resolution concluded that the variable compensation ratio does not incentivise inappropriate risk taking and is consistent with the prudential management of fixed remuneration. Employees who meet the criteria set out in Section 25a(5b) Kreditwesengesetz ("KWG") and all Supervisory Board and Executive Board members of GSBE (Section 1(21) KWG) have been identified as Risk Takers.

Fixed Remuneration

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

For certain employees additional fixed remuneration is awarded in the form of an allowance generally paid in cash. The selection of recipients and the value of allowances awarded are determined as a result of an evaluation of professional experience, role and level of organisational responsibility.

Variable Remuneration

For employees with total remuneration and variable remuneration above specific thresholds, variable remuneration is generally paid in a combination of cash and equity-based remuneration. In general, the portion paid in the form of an equity-based award increases as variable remuneration increases.

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

Equity-Based Remuneration

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

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

- **Deferral Policy**: The deferred portion of fiscal year 2020 annual variable remuneration was generally awarded in the form of RSUs. An RSU is an unfunded, unsecured promise to deliver a share on a predetermined date. RSUs awarded in respect of fiscal year 2020 generally deliver in three equal instalments on or about each of the first, second and third anniversaries of the grant date, assuming the employee has satisfied the terms and conditions of the award at each such date.

- **Transfer Restrictions**: The firm generally requires all individuals to hold, until the expiration of a period of up to five years from grant, a material portion of the shares they receive in respect of RSUs granted as part of their year-end remuneration according to the firm's global deferral table. These transfer restrictions apply to the lower of 50% of the shares delivered before reduction for tax withholding, or the number of shares received after reduction for tax withholding.

  An employee generally cannot sell, exchange, transfer, assign, pledge, hedge or otherwise dispose of any RSUs or shares that are subject to transfer restrictions.

- **Forfeiture and Recapture Provisions:** The RSUs and shares delivered thereunder in relation to variable remuneration are subject to forfeiture or recapture if the Compensation Committee or its delegate(s) determine(s) that during 2020 the employee participated (or otherwise oversaw or was responsible for, depending on the circumstances, another individual's participation) in the structuring or marketing of any product or service, or participated on behalf of the firm or any of its clients in the purchase or sale of any security or other property, in any case without appropriate consideration of the risk to the firm or the broader financial system as a whole (for example, if the employee were to improperly analyse risk or fail sufficiently to raise concerns about such risk) and, as a result of such action or omission, the Compensation Committee or its delegate(s) determine(s) there has been, or reasonably could be expected to be, a material adverse impact on the firm, the employee's business unit or the broader financial system.

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

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

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

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

- **Hedging**: The firm's anti-hedging policy ensures employees maintain the intended exposure to the firm's stock performance. In particular, all employees are prohibited from hedging RSUs, shares that are subject to transfer restrictions, and, to the extent applicable, retention shares. In addition, executive officers of GS Group (as defined under the Securities Exchange Act of 1934) are prohibited from hedging any shares that they can freely sell. Employees, other than executive officers, may hedge only shares that they can otherwise sell. However, no employee may enter into uncovered hedging transactions or sell short any shares. Employees may only enter into transactions or otherwise make investment decisions with respect to shares during applicable "window periods".

- **Treatment upon Termination or Change-in-Control:** As a general matter, delivery schedules are not accelerated, and transfer restrictions are not removed, when an employee leaves the firm. The limited exceptions include death and "conflicted employment." A change in control alone is not sufficient to trigger acceleration of any deliveries or removal of transfer restrictions; only if the change in control is followed within 18 months by a termination of employment by the firm without "cause" or by the employee for "good reason" will delivery and release of transfer restrictions be accelerated.

Quantitative Disclosures

The following tables show aggregate quantitative remuneration information for 40 individuals, categorised as Risk Takers for the purposes of the KWG.

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

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

Remuneration paid or awarded for the financial year ended December 31, 2020 comprised fixed remuneration (salaries, allowances and director fees) and variable remuneration. The figures are split into two tables showing "Senior Management" and "Other Risk Takers" according to the following definitions:

- **Senior Management:** members of the Supervisory Board and Executive Board of GSBE, and employees of the management level directly below the Executive Board.
- **Other Risk Takers:** other employees whose activities have a material impact on the risk profile of the firm.

The quantitative information referred to in Article 450(1)(h) of CRR has been provided on an aggregate basis, due to data privacy considerations. The amounts relate only to those employees who were Risk Takers at the end of the fiscal year, December 31, 2020.

Table 36: Senior Management and Other Risk Takers

	Senior Management	Other Risk Takers – Investment Bank
Number of members of Senior Management	**24**	**16**
2020 Fixed Remuneration awarded in cash (€ in millions)	**12.97**	**5.44**
2020 Fixed Remuneration awarded in RSUs (number of RSUs in 000s)	**-**	**-**
2020 Variable Remuneration awarded in cash (€ in millions)	**4.91**	**3.03**
2020 Variable Remuneration awarded in RSUs (number of RSUs in 000s)	**36.33**	**11.56**
Variable to Fixed Remuneration Ratio	**1.09**	**1.10**
Outstanding unvested as at 1 January 2020 (number of RSUs in 000s)[28]	**-**	**-**
Awarded during 2020 (number of RSUs in 000s)	**30.25**	**9.79**
Paid out during 2020 (number of RSUs in 000s)	**-**	**-**
Reduced through performance adjustments during 2020 (number of RSUs in 000s)	**-**	**-**
Outstanding unvested as at 31 December 2020 (number of RSUs in 000s)[28]	**30.25**	**9.79**

[28]All elements of deferred remuneration are settled immediately when due, and so there are no amounts of outstanding vested deferred remuneration

Sign-on and Severance Payments

There were no sign-on payments or severance payments made to Risk Takers during 2020.

Risk Takers with Total Remuneration of One Million Euros or above

The following table shows the number of Risk Takers with total remuneration of EUR 1 million or above arranged by remuneration band for the remuneration period ended December 31, 2020.

Table 37: Remuneration Band

Total Remuneration Band (EUR)	Number of Individuals
≥ 1,000,000 to < 1,500,000	**3**
≥ 1,500,000 to < 2,000,000	**5**
≥ 2,000,000	**6**
Total	**14**

Cautionary Note on Forward-Looking Statements

We have included in these disclosures, and our management may make, statements that may constitute "forward-looking statements." Forward-looking statements are not historical facts or statements of current conditions, but instead represent only our beliefs regarding future events, many of which, by their nature, are inherently uncertain and outside our control. These statements include statements other than historical information or statements of current conditions.

It is possible that our actual results and financial condition may differ, possibly materially, from the anticipated results and financial condition indicated in these forward-looking statements. Important factors that could cause our actual results and financial condition to differ from those indicated in the forward-looking statements include, among others, those discussed in "Forecast and Opportunities Report" within "Management Report" of GSBE's 2020 Financial Statements.

Glossary

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

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

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

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

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

Default. A default is considered to have occurred when either or both of the two following events have taken place: (i) we consider that the obligor is unlikely to pay its credit obligations to us in full; or (ii) the obligor has defaulted on a payment and/or is past due more than 90 days.

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

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

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

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

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

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

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

Internal Models Methodology (IMM). The IMM establishes a methodology for entities to use their internal models to estimate exposures arising from OTC derivatives, securities financing transactions and cleared transactions, subject to qualitative and quantitative requirements and supervisory approval.

Loss Given Default (LGD). An estimate of the economic loss rate if a default occurs during economic downturn conditions.

Market Risk. The risk of loss in the value of our inventory, investments, loans and other financial assets and liabilities accounted for at fair value, due to changes in market conditions.

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

Other Systemically Important Institutions. Institutions identified by national regulators as those whose failure or malfunction could potentially lead to serious negative consequences for the domestic financial systems and real economy.

Prudent Valuation Adjustment (PVA). A deduction from CET1 capital where the prudent value of trading assets or other financial assets measured at fair value is materially lower than the fair value recognised in the financial information.

Probability of Default (PD). Estimate of the probability that an obligor will default over a one-year horizon.

Ratings Based Approach. Under the ratings based method, the risk weighted exposure amount of a rated securitisation position or resecuritisation position are calculated by applying to the exposure value the risk weight associated with the credit quality step as prescribed in CRR multiplied by 1.06.

Regulatory Value-at-Risk (VaR). The potential loss in value of trading positions due to adverse market movements over a 10-day time horizon with a 99% confidence level.

Regulatory VaR Backtesting. Comparison of daily positional loss results to the Regulatory VaR measure calculated as of the end of the prior business day.

Resecuritisation Position. Represents an on or off-balance-sheet transaction in which the risk associated with an underlying pool of exposures is tranched and at least one of the underlying exposures is a securitisation position.

Securitisation Position. Represents a transaction or scheme in which the credit risk associated with an exposure or pool of exposures is tranched and both payments in the transaction or scheme are dependent upon the performance of the exposure or pool of exposures and the subordination of tranches determines the distribution of losses during the ongoing life of the transaction or scheme.

Specific Risk. The risk of loss on a position that could result from factors other than broad market movements and includes event risk, default risk and idiosyncratic risk. The specific risk add-on is applicable for both securitisation positions and for certain non-securitised debt and equity positions, to supplement the model-based measures.

Stress Testing. Stress testing is a method of determining the effect of various hypothetical stress scenarios.

Stressed VaR (SVaR). The potential loss in value of trading assets and liabilities, as well as certain investments, loans, and other financial assets and liabilities, during a period of significant market stress. SVaR is calculated at a 99% confidence level over a 10-day horizon using market data inputs from a continuous 12-month period of stress.

Synthetic Securitisation. Defined as a securitisation transaction in which the tranching is achieved by the use of credit derivatives or guarantees, and the pool of exposures is not removed from the balance sheet of the originator.

Traditional Securitisation. Defined as a securitisation transaction which involves the economic transfer of the exposures being securitised to a securitisation special purpose entity which issues securities; and so that this must be accomplished by the transfer of ownership of the securitised exposures from the originator or through sub-participation; and the securities issued do not represent payment obligations of the originator.

Value-at-Risk (VaR). The potential loss in value of trading assets and liabilities, certain investments, loans, and other financial assets and liabilities accounted for at fair value, due to adverse market movements over a defined time horizon with a specified confidence level. Risk management VaR is calculated at a 95% confidence level over a one-day horizon.

Wholesale Exposure. A term used to refer collectively to credit exposures to companies, sovereigns or government entities (other than Securitisation, Retail or Equity exposures).

Appendix I: Scope of Consolidation Tables

Consolidated Balance Sheet under the Regulatory Scope of Consolidation

The following table provides a reconciliation of GSBE's balance sheet as of December 31, 2020 on an accounting consolidation basis to the GSBE's balance sheet under the regulatory scope of consolidation. It also breaks down how carrying values under the scope of regulatory consolidation are allocated to the different risk frameworks laid out in Part Three of the CRR.

Table 38: Differences Between Accounting and Regulatory Scopes of Consolidation and Mapping of Financial Statement Categories with Regulatory Risk Categories[29]

€ in thousands **As of December 2020**

	Carrying values as reported in published financial statements and under the scope of regulatory consolidation	Carrying values of items:				
		Subject to the credit risk framework	Subject to the CCR framework	Subject to the securitisation framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from capital
Assets						
Cash and cash equivalents	€ 2,736,262	€ 2,736,262	-	-	-	-
Collateralised agreements	3,253,743	-	3,253,743	-	-	-
Customer and other receivables	12,236,462	446,638	11,789,824	-	-	-
Trading Assets	38,292,892	-	36,362,666	-	38,292,892	-
Investments	17,401	-	-	17,401	-	-
Other assets	259,103	218,519	-	-	-	40,585
Total assets	**€ 56,795,863**	**€ 3,401,418**	**€ 51,406,234**	**€ 17,401**	**€ 38,292,892**	**€ 40,585**
Liabilities						
Collateralised financings	€ 2,699,558	-	€ 2,699,558	-	-	-
Customer and other payables	10,333,075	-	6,576,113	-	-	3,756,962
Trading liabilities	37,462,742	-	36,337,824	-	37,462,742	-
Deposits	1,221,377	-	-	-	-	1,221,377
Unsecured borrowings	1,262,349	-	-	-	-	1,262,349
Other liabilities	461,233	-	-	-	-	461,233
Total liabilities	**€ 53,440,334**	**-**	**€ 45,613,496**	**-**	**€ 37,462,742**	**€ 6,701,920**

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

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

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

Table 39: Main Sources of Differences Between Regulatory Exposures Amounts and Carrying Values in Financial Statements

€ in thousands			As of December 2020
	Items subject to		
	Credit risk framework	**CCR framework**	**Securitisation framework**
1 Assets carrying value amount under the scope of regulatory consolidation (as per template EU LI1)	**€ 3,401,418**	**€ 51,408,412**	**€ 17,401**
2 Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	-	(45,613,496)	-
3 Total net amount under the regulatory scope of consolidation	3,401,418	5,794,916	17,401
4 Off-balance-sheet amounts[30]	564,180	-	-
5 *Differences due to credit conversion factor*	(259,350)	-	-
6 *Differences due to netting of collateral, haircut and EAD modelling*	(45,480)	4,451,489	-
7 Exposure amounts considered for regulatory purposes	**€ 3,660,768**	**€ 10,246,406**	**€ 17,401**

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

Explanations of differences between accounting and regulatory exposure amounts

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

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

Appendix II: Credit Risk Tables

The following three tables present GSBE's net values of on-balance-sheet and off-balance-sheet exposures by geographical areas and exposure classes as of December 31, 2020.

Table 40: Geographical Breakdown of Exposures

€ in thousands													**As of December 2020**
		Net value											
		EMEA	Germany	France	United Kingdom	Other countries	**Americas**	United States	Other countries	**Asia**	Thailand	Other countries	**Total**
6	***Total IRB approach***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
7	Central governments or central banks	2,635,011	2,587,815	-	-	47,196	-	-	-	-	-	-	2,635,011
8	Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-
9	Public sector entities	112	112	-	-	-	-	-	-	-	-	-	112
10	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-
11	International organisations	-	-	-	-	-	-	-	-	-	-	-	-
12	Institutions	421,831	226,295	6,876	67,997	120,663	83,898	83,564	334	12,788	-	12,788	518,517
13	Corporates	377,326	71,706	181,251	25,273	99,097	324,041	303,358	20,682	4,966	3,736	1,230	706,333
14	Retail	-	-	-	-	-	-	-	-	-	-	-	-
16	Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-
17	Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-
21	Equity exposures	2,092	2,092	-	-	-	-	-	-	-	-	-	2,092
22	Other exposures	103,154	103,154	-	-	-	-	-	-	-	-	-	103,154
23	***Total standardised approach***	**€ 3,539,525**	**€ 2,991,173**	**€ 188,127**	**€ 93,270**	**€ 266,955**	**€ 407,939**	**€ 386,922**	**€ 21,017**	**€ 17,754**	**€ 3,736**	**€ 14,018**	**€ 3,965,218**
24	***Total***	**€ 3,539,525**	**€ 2,991,173**	**€ 188,127**	**€ 93,270**	**€ 266,955**	**€ 407,939**	**€ 386,922**	**€ 21,017**	**€ 17,754**	**€ 3,736**	**€ 14,018**	**€ 3,965,218**

The following table presents GSBE's net values of on-balance-sheet and off-balance-sheet exposures by industry or counterparty types and exposure classes as of December 31, 2020.

Table 41: Concentration of Exposures by Industry or Counterparty Types

€ in thousands — **As of December 2020**

		Sovereigns (including Central Banks)	Banks	CCPs and Exchanges	Other Financials	Real Estate	Manufacturing	Transport, Utilities & Storage	Retail / Wholesale trade	Services and other Industries	Total
6	***Total IRB approach***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
7	Central governments or central banks	2,633,131	-	-	-	-	-	-	-	1,880	2,635,011
8	Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-
9	Public sector entities	-	112	-	-	-	-	-	-	-	112
10	Multilateral development banks	-	-	-	-	-	-	-	-	-	-
11	International organisations	-	-	-	-	-	-	-	-	-	-
12	Institutions	-	154,951	7,588	355,978	-	-	-	-	-	518,517
13	Corporates	1,570	13,468	158	426,215	12	48,285	128,757	183	87,685	706,333
14	Retail	-	-	-	-	-	-	-	-	-	-
16	Exposures in default	-	-	-	-	-	-	-	-	-	-
17	Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-
21	Equity exposures	-	-	-	2,067	-	-	-	-	25	2,092
22	Other exposures	-	-	-	-	-	-	-	-	103,154	103,154
23	***Total standardised approach***	**€ 2,634,701**	**€ 168,531**	**€ 7,746**	**€ 784,259**	**€ 12**	**€ 48,285**	**€ 128,757**	**€ 183**	**€ 192,744**	**€ 3,965,218**
24	***Total***	**€ 2,634,701**	**€ 168,531**	**€ 7,746**	**€ 784,259**	**€ 12**	**€ 48,285**	**€ 128,757**	**€ 183**	**€ 192,744**	**€ 3,965,218**

The following table presents GSBE's net values of on-balance-sheet and off-balance-sheet exposures by industry or counterparty types and exposure classes as of December 31, 2020.

Table 42: Maturity of Exposures

€ in thousands — As of December 2020

		On demand	< = 1 year	> 1 year < = 5 years	> 5 years	No stated maturity	Total
6	***Total IRB approach***	**-**	**-**	**-**	**-**	**-**	**-**
7	Central governments or central banks	2,594,759	-	-	40,252	-	2,635,011
8	Regional governments or local authorities	-	-	-	-	-	-
9	Public sector entities	-	112	-	-	-	112
10	Multilateral development banks	-	-	-	-	-	-
11	International organisations	-	-	-	-	-	-
12	Institutions	168,888	344,085	-	5,543	-	518,517
13	Corporates	106,317	199,185	314,118	86,713	-	706,333
14	Retail	-	-	-	-	-	-
16	Exposures in default	-	-	-	-	-	-
17	Items associated with particularly high risk	-	-	-	-	-	-
21	Equity exposures	-	-	-	-	2,092	2,092
22	Other exposures	-	-	-	-	103,154	103,154
23	***Total standardised approach***	**€ 2,869,965**	**€ 543,382**	**€ 314,118**	**€ 132,508**	**€ 105,246**	**€ 3,965,218**
24	***Total***	**€ 2,869,965**	**€ 543,382**	**€ 314,118**	**€ 132,508**	**€ 105,246**	**€ 3,965,218**

Table 43: Credit Quality of Exposures by Exposure Class and Instrument

€ in thousands								As of December 2020
		Gross carrying values of						
		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
15	***Total IRB approach***	**-**	**-**	**-**	**-**	**-**	**-**	**-**
16	Central governments or central banks	-	2,635,011	-	-	-	-	2,635,011
17	Regional governments or local authorities	-	-	-	-	-	-	-
18	Public sector entities	-	112	-	-	-	-	112
19	Multilateral development banks	-	-	-	-	-	-	-
20	International organisations	-	-	-	-	-	-	-
21	Institutions	-	518,517	-	-	-	-	518,517
22	Corporates	-	706,713	(380)	-	-	-	706,333
24	Retail	-	-	-	-	-	-	-
28	Exposures in default	-	-	-	-	-	-	-
29	Items associated with particularly high risk	-	-	-	-	-	-	-
33	Equity exposures	-	2,092	-	-	-	-	2,092
34	Other exposures	-	103,154	-	-	-	-	103,154
35	***Total standardised approach***	**-**	**€ 3,965,598**	**€ (380)**	**-**	**-**	**-**	**€ 3,965,218**
36	***Total***	**-**	**€ 3,965,598**	**€ (380)**	**-**	**-**	**-**	**€ 3,965,218**
37	Of which: Loans	-	-	-	-	-	-	-
38	Of which: Debt securities	-	-	-	-	-	-	-
39	Of which: Off- balance-sheet exposures	-	564,560	(380)	-	-	-	564,180

Table 44: Credit Quality of Exposures by Industry or Counterparty Types

€ in thousands								As of December 2020
		Gross carrying values of		Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
		Defaulted exposures	Non-defaulted exposures					
1	Central governments or central banks	-	2,634,701	-	-	-	-	2,634,701
2	Services and other Industries	-	192,747	(3)	-	-	-	192,744
3	Banks	-	168,531	-	-	-	-	168,531
4	Other Financials	-	784,587	(328)	-	-	-	784,259
5	CCPs and Exchanges	-	7,746	-	-	-	-	7,746
6	Manufacturing	-	48,291	(5)	-	-	-	48,285
7	Transport, Utilities & Storage	-	128,800	(44)	-	-	-	128,757
8	Retail / Wholesale trade	-	183	-	-	-	-	183
9	Real Estate	-	12	-	-	-	-	12
	Total	**-**	**€ 3,965,598**	**€ (380)**	**-**	**-**	**-**	**€ 3,965,218**

Table 45: Credit Quality of Exposures by Geography

€ in thousands								As of December 2020
		Gross carrying values of		Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
		Defaulted exposures	Non-defaulted exposures					
1	EMEA	-	€ 3,539,905	€ (380)	-	-	-	€ 3,539,525
2	Germany	-	2,991,178	(5)	-	-	-	2,991,173
3	France	-	188,174	(47)	-	-	-	188,127
4	United Kingdom	-	93,598	(328)	-	-	-	93,270
5	Other Countries	-	266,955	-	-	-	-	266,955
6	Americas	-	407,939	-	-	-	-	407,939
7	United States	-	386,922	-	-	-	-	386,922
8	Other Countries	-	21,017	-	-	-	-	21,017
9	Asia	-	17,754	-	-	-	-	17,754
	Total	**-**	**€ 3,965,598**	**€ (380)**	**-**	**-**	**-**	**€ 3,965,218**

Table 46: Standardised Approach - Credit Risk Exposure and CRM Effects

€ in thousands — As of December 2020

		Exposures before CCF and CRM		Exposures post CCF and CRM		RWAs and RWA density	
	Exposure classes	**On-balance-sheet amount**	**Off-balance-sheet amount**	**On-balance-sheet amount**	**Off-balance-sheet amount**	**RWAs**	**RWA density**
1	Central governments or central banks	2,635,011	-	2,635,011	-	100,629	3.82%
2	Regional government or local authorities	-	-	-	-	-	-
3	Public sector entities	112	-	112	-	-	-
4	Multilateral development banks	-	-	-	-	-	-
5	International organisations	-	-	-	-	-	-
6	Institutions	518,517	-	518,517	-	104,991	20.25%
7	Corporates	142,154	564,180	142,154	259,350	341,682	85.10%
8	Retail	-	-	-	-	-	-
10	Exposures in default	-	-	-	-	-	-
11	Higher-risk categories	-	-	-	-	-	-
15	Equity	2,092	-	2,092	-	4,707	225.07%
16	Other items	103,154	-	103,154	-	103,154	100.00%
17	**Total**	**€ 3,401,038**	**€ 564,180**	**€ 3,401,038**	**€ 259,350**	**€ 655,163**	**17.90%**

Table 47: Standardised Approach

€ in thousands — **As of December 2020**

	Exposure classes	**Risk weight**									**Total**	**Of which unrated**
		0%	**2%**	**20%**	**35%**	**50%**	**100%**	**150%**	**250%**	**1250%**		
1	Central governments or central banks	2,594,759	-	-	-	-	-	-	40,252	-	2,635,011	-
2	Regional government or local authorities	-	-	-	-	-	-	-	-	-	-	-
3	Public sector entities	112	-	-	-	-	-	-	-	-	112	-
4	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-
5	International organisations	-	-	-	-	-	-	-	-	-	-	-
6	Institutions	-	3,696	513,245	-	1,453	-	-	-	123	518,517	291,541
7	Corporates	-	-	28,669	-	73,773	299,062	-	-	-	401,504	259,272
8	Retail	-	-	-	-	-	-	-	-	-	-	-
10	Exposures in default	-	-	-	-	-	-	-	-	-	-	-
11	Higher-risk categories	-	-	-	-	-	-	-	-	-	-	-
15	Equity	-	-	-	-	-	348	-	1,744	-	2,092	2,092
16	Other items	-	-	-	-	-	103,154	-	-	-	103,154	103,154
17	**Total**	**€ 2,594,871**	**€ 3,696**	**€ 541,913**	**-**	**€ 75,226**	**€ 402,563**	**-**	**€ 41,995**	**€ 123**	**€ 3,660,388**	**€ 656,058**

Table 48: Credit quality of performing and non-performing exposures by past due days

€ in thousands — As of December 2020

		Gross carrying amount / Nominal amount											
		Performing exposures			Non-performing exposures								
			Not past due or Past due <= 30 days	Past due > 30 days <= 90 days		Unlikely to pay that are not past-due or past-due <= 90 days	Past due > 90 days <= 180 days	Past due > 180 days <= 1 year	Past due > 1 year <= 2 years	Past due > 2 year <= 5 years	Past due > 5 year <= 7 years	Past due > 7 years	Of which defaulted
010	Loans and advances	€ 15,568,127	€ 15,568,127	-	-	-	-	-	-	-	-	-	-
020	*Central banks*	168	168	-	-	-	-	-	-	-	-	-	-
030	*General governments*	11,980	11,980	-	-	-	-	-	-	-	-	-	-
040	*Credit institutions*	2,809,310	2,809,310	-	-	-	-	-	-	-	-	-	-
050	*Other financial corporations*	12,354,906	12,354,906	-	-	-	-	-	-	-	-	-	-
060	*Non-financial corporations*	344,124	344,124	-	-	-	-	-	-	-	-	-	-
070	*Of which SMEs*	-	-	-	-	-	-	-	-	-	-	-	-
080	*Households*	47,639	47,639	-	-	-	-	-	-	-	-	-	-
090	Debt Securities	17,401	17,401	-	-	-	-	-	-	-	-	-	-
100	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-
110	*General governments*	-	-	-	-	-	-	-	-	-	-	-	-
120	*Credit institutions*	-	-	-	-	-	-	-	-	-	-	-	-
130	*Other financial corporations*	17,401	17,401	-	-	-	-	-	-	-	-	-	-
140	*Non-financial corporations*	-	-	-	-	-	-	-	-	-	-	-	-
150	Off-balance sheet exposures	519,080			-								-
160	*Central banks*	-			-								-
170	*General governments*	-			-								-
180	*Credit institutions*	-			-								-
190	*Other financial corporations*	64,962			-								-
200	*Non-financial corporations*	454,118			-								-
210	*Households*	-			-								-
220	**Total**	**€ 16,104,608**	**€ 15,585,528**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table 49: Performing and non-performing exposures and related provisions

€ in thousands | As of December 2020

		Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Accumulated partial write-off	Collateral and financial guarantees received	
		Performing exposures			Non-performing exposures			Performing exposures – accumulated impairment and provisions			Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions				On performing exposures	On non-performing exposures
			Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3		Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3			
1	Loans and advances	€ 15,568,127	€ 15,568,127	-	-	-	-	-	-	-	-	-	-	-	€ 3,871,533	-
2	*Central banks*	168	168	-	-	-	-	-	-	-	-	-	-	-	-	-
3	*General governments*	11,980	11,980	-	-	-	-	-	-	-	-	-	-	-	-	-
4	*Credit institutions*	2,809,310	2,809,310	-	-	-	-	-	-	-	-	-	-	-	130,041	-
5	*Other financial corporations*	12,354,906	12,354,906	-	-	-	-	-	-	-	-	-	-	-	3,683,664	-
6	*Non-financial corporations*	344,124	344,124	-	-	-	-	-	-	-	-	-	-	-	18,215	-
7	*Of which SMEs*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	*Households*	47,639	47,639	-	-	-	-	-	-	-	-	-	-	-	39,613	-
9	Debt securities	17,401	17,401	-	-	-	-	-	-	-	-	-	-	-	-	-
10	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	*General governments*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	*Credit institutions*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	*Other financial corporations*	17,401	17,401	-	-	-	-	-	-	-	-	-	-	-	-	-
14	*Non-financial corporations*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Off-balance-sheet exposures	519,080	519,080	-	-	-	-	380	380	-	-	-	-		-	-
16	*Central banks*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
17	*General governments*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
18	*Credit institutions*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
19	*Other financial corporations*	64,962	64,962	-	-	-	-	328	328	-	-	-	-		-	-
20	*Non-financial corporations*	454,118	454,118	-	-	-	-	52	52	-	-	-	-		-	-
21	*Households*	-	-	-	-	-	-	-	-	-	-	-	-		-	-
22	**Total**	**€ 16,104,608**	**€ 16,104,608**	**-**	**-**	**-**	**-**	**€ 380**	**€ 380**	**-**	**-**	**-**	**-**	**-**	**€ 3,871,533**	**-**

Appendix III: Counterparty Credit Risk Tables

Table 50: Impact of Netting and Collateral Held on Exposure Values[31]

€ in thousands — As of December 2020

		Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure[32]
1	Derivatives	€ 36,362,666	€ (27,656,463)	€ 8,706,203	€ 11,549,608	€ 1,905,406
2	SFTs	5,055,982	(1,276,241)	3,779,741	4,521,268	46,343
3	Cross-product netting	-	-	-	-	-
4	**Total**	**€ 41,418,648**	**€ (28,932,704)**	**€ 12,485,944**	**€ 16,070,876**	**€ 1,951,749**

[31] GSBE does not have cross-product netting where both derivatives and SFTs are netted at a counterparty level.

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

Table 51: Composition of Collateral for Exposures to CCR

€ in thousands — As of December 2020

	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
	Segregated	Unsegregated	Segregated	Unsegregated		
Sovereign	€ 2,436,281	€ 188,184	€ 450,103	-	€ 3,599,568	€ 1,381,754
Equities	51	-	165	-	657,916	1,109,236
Corporate Bonds	605,912	-	-	-	248,393	299,245
Cash	81,016	8,238,165	793,569	8	15,390	-
Other	-	1	-	-	-	-
Total	**€ 3,123,258**	**€ 8,426,350**	**€ 1,243,837**	**€ 8**	**€ 4,521,268**	**€ 2,790,236**

Table 52: Standardised approach – CCR exposures by regulatory portfolio and risk

€ in thousands **As of December 2020**

	Exposure classes	Risk weight											Total	Of which unrated
		0%	**2%**	**4%**	**10%**	**20%**	**50%**	**70%**	**75%**	**100%**	**150%**	**Others**		
1	Central governments or central banks	€ 78,853	-	-	-	-	-	-	-	€ 1,511	-	-	€ 80,364	€ 72,553
2	Regional government or local authorities	1,839,507	-	-	-	-	-	-	-	-	-	-	1,839,507	1,441,453
3	Public sector entities	138,537	-	-	-	242	-	-	-	-	-	-	138,779	138,779
4	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-
5	International organisations	2,616	-	-	-	-	-	-	-	-	-	-	2,616	2,616
6	Institutions	-	1,568,518	-	-	2,218,626	1,988,888	-	-	78,304	8,766	-	5,863,102	3,185,551
7	Corporates	-	-	-	-	53,640	40,223	-	-	2,228,175	-	-	2,322,038	1,947,715
8	Retail	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Exposures in Default	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Higher Risk Categories	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Equity	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Other items	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Total	**€ 2,059,513**	**€ 1,568,518**	**-**	**-**	**€ 2,272,508**	**€ 2,029,111**	**-**	**-**	**€ 2,307,990**	**€ 8,766**	**-**	**€ 10,246,406**	**€ 6,788,668**

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

Table 53: Changes in the Stock of General and Specific Credit Risk Adjustments[33]

€ in thousands			**As of December 2020**
		Accumulated specific credit risk adjustment	**Accumulated general credit risk adjustment**
1	**Opening balance as of 31 December 2019**	**€ 19**	**-**
2	Increases due to amounts set aside for estimated loan losses during the period	-	-
3	Decreases due to amounts reversed for estimated loan losses during the period	(16)	-
6	Impact of exchange rate differences	-	-
8a	Position and valuation changes	376	-
9	**Closing balance as of 31 December 2020**	**€ 380**	**-**

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

Appendix V: Index of Tables to EBA Templates

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

[35] Templates 5, 21, 22, 23, 24 and 29 (Disclosures pertaining to IRB) have not been disclosed as GSBE does not have permission to use IRB

[36] Template 6 (Non-deducted participation in insurance undertakings) and Template 17 (Changes in the stock of defaulted and impaired loans and debt securities) has not been disclosed as GSBE do not have material exposures