Goldman Sachs Bank Europe SE

Pillar 3 Disclosures

For the period ended December 31, 2019

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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 Dublin, Copenhagen, London, Madrid and Paris.

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. GS Group has a presence in Europe, Middle East and Africa (EMEA) through a number of subsidiaries, including GSBE. The shareholders of GSBE are Goldman, Sachs & Co. Finanz GmbH with its registered office in Frankfurt am Main (1%), and Goldman Sachs (Cayman) Holding Company with its registered office in George Town, Cayman Islands (99%). The bank is registered 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 "2019 Form 10-K" are to the firm's Annual Report on Form 10-K for the year ended December 31, 2019.

https://www.goldmansachs.com/investor-relations/financials/current/other-information/4q-pillar3-2019.pdf

https://www.goldmansachs.com/investor-relations/financials/current/10k/2019-10-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's final capital framework for strengthening international capital standards (Basel III), which is structured around three pillars: Pillar 1 "minimum capital requirements", Pillar 2 "supervisory review process" and Pillar 3 "market discipline".

GSBE's Pillar 3 disclosures published for December 31, 2019 have been prepared in accordance with the EBA Guidelines on disclosure requirements under Part 8 of the CRR published in December 2016.

For the financial year 2019, GSBE has not been designated as significant for remuneration purposes and hence disclosure requirements under article 450 of CRR on Remuneration Policy do not apply.

The Pillar 3 disclosures have been published both in English and German languages following the publication of the financial statement information for GSBE for December 2019. GSBE's 2019 Financial Statements can be accessed via the following link:

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

Measures of exposures and other metrics disclosed in this report may not be based on German Generally Accepted Accounting Practices (DE GAAP), 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), German Commercial Code (HGB), GSBE waives its obligation from preparing consolidated financial statements.

The non-consolidating 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 2019 Financial Statements under the section of "Branches of the Bank" within Note 22.

GSBE is considered the parent company of a group of institutions 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 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.

For information regarding the capital adequacy of GSBE, see "Risk Report - Capital Adequacy" within "Management Report" of GSBE's 2019 Financial Statements.

For information about restrictions on the transfer of funds within Group Inc. and its subsidiaries, see "Note 20. Regulation and Capital Adequacy" in Part II, Item 8 "Financial Statements and Supplementary Data" and "Risk Management - Liquidity Risk Management" and "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 2019 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. In this document, minimum capital ratios set out in Table 1 are expressed including the impact of additional buffers.

Unless otherwise stated minimum capital requirements in subsequent tables are computed by multiplying the regulatory Pillar 1 minimum by 8% to Risk-Weighted Assets.

Fair Value

Financial instruments which are held with a trading intent are recognized at fair value less risk adjustment. The fair value of a financial instrument is the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Financial assets are marked to bid prices and financial liabilities are marked to offer prices. Fair value measurements do not include transaction costs. Fair value gains or losses are included in the net trading result.

For additional information regarding the fair value measurement of GSBE's trading assets and liabilities, see "Note 2. Accounting and Valuation Methods. Trading Assets and Liabilities" in GSBE's 2019 Financial Statements.

The firm has documented policies and maintains systems and controls for the calculation of Prudent Valuation Adjustment (PVA) as required by the Commission Delegated Regulation (EU) No. 2016/101. PVA represents the excess of valuation adjustments required to achieve prudent value, over any adjustment applied in the firm's fair value that addresses the same source of valuation uncertainty. GSBE applies the Simplified Approach where fair-valued assets and liabilities for which a change in accounting valuation has a partial or zero impact on Common Equity Tier 1 (CET1) capital, shall only be included in proportion to the impact of the relevant valuation change on 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 variations[1]. 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 firm's businesses are subject to significant and evolving regulation. Reforms have been adopted or are being considered by regulators and policy-makers worldwide. The expectation is that the principal areas of impact from regulatory reform for the firm will be increased regulatory capital requirements and increased regulation and restriction on certain activities. However, given that many of the new and proposed rules are highly complex, the full impact of regulatory reform will not be known until the rules are implemented and market practices develop under the final E.U. regulations.

GSBE is currently subject to E.U. legal and regulatory requirements, based on directly binding regulations of the E.U. and the implementation of E.U. directives by Germany. It currently benefits from non-discriminatory access to E.U. clients and infrastructure based on E.U. treaties and E.U. legislation, including cross-border "passporting" arrangements and specific arrangements for the establishment of E.U. branches.

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 the amendments to the CRR will apply from June 28, 2021. The requirements for MREL are already effective, however GSBE is currently not in scope as it does not meet the criteria to be considered a material subsidiary of GS Group. The implementation timing of the market risk revisions is dependent on technical standards, which have yet to be finalised. The firm expects that binding market risk rules will not apply before 2023.

The amendments to the CRD include provisions on financial holding companies, remuneration, interest rate risk management, supervisory powers and macro-prudential capital requirements. Germany, as an E.U. member state at the time of publication in the Official Journal, is required to adopt the amendments to the CRD. The amendments to the CRD will be phased in over time with most changes applicable from June 28, 2021, some macro prudential measures applicable from January 1, 2022 and the requirement to have an intermediate E.U. parent holding company applicable from December 30, 2023.

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

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

these standards beginning January 1, 2023, and that the new output 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 regulators in such jurisdiction.

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

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. 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

Climate change concerns could disrupt the firm's business, affect client activity levels and creditworthiness and damage the firm's reputation. Climate change may cause extreme weather events that disrupt operations at one or more of the firm's primary locations, which may negatively affect 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.

Brexit

The bank continues to execute its Brexit strategy and is preparing for a scenario where the U.K. financial services firms will lose access to E.U. markets on December 31, 2020. For more information on this, please refer to the "Brexit" section of the "Forecast and Opportunities Report" within "Management Report" of GSBE's 2019 Financial Statements.

Other Developments

In response to the global outbreak of the coronavirus (COVID-19) pandemic, the company is harnessing its resources, experience and network to help where it can, working with public and private clients to partner on initiatives with a focus on community assistance, economic support for businesses, and serving its clients and customers. GS Group announced a number of important initiatives to support its employees, clients and the broader public during this crisis, reinforcing its core values of partnership, client service, integrity and excellence and successfully executed on its Business Continuity Planning (BCP) strategy amid the COVID-19 pandemic, providing clients with advice, execution and liquidity.

The emergence of the global outbreak of the COVID-19 pandemic has created economic and financial disruptions that have adversely affected, and are likely to continue to adversely affect, the company's business, financial condition, liquidity and results of operations. The extent to which the COVID-19 pandemic will continue to negatively affect the company's businesses, financial condition, liquidity and results of operations will depend on future developments, which are highly uncertain and cannot be predicted.

On April 28, 2020, the European Commission published a legislative proposal of amendments to the CRR to ease prudential constraints for banks and encourage lending to the economy during the COVID-19 pandemic. We expect these changes to not have a material impact on its binding capital constraints.

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 business objectives, while remaining in compliance with regulatory requirements. 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 entity's risk appetite.

The bank's revenue-producing units, as well as Treasury, Technology, Human Capital Management, Operations, and Services, 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 Operating Officer (COO), Credit Risk, Liquidity Risk, Market Risk, Model Risk Management, Operational Risk, and Risk Engineering that directly report to the bank's 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. 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, price verification and stress tests. Within its mandate, the GSBE Risk Committee approves market risk, credit risk, liquidity and regulatory capital limits or articulate recommendations with regard to those risk limits which require Executive Board approval. Its membership includes senior managers from the revenue-producing divisions and independent control and support 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 counterparty 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 for 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 oversight of matters relevant for GSBE, see "Risk Report - Overview and Structure of Risk Management" within "Management Report" of GSBE's 2019 Financial Statements.

Risk Profile and Strategy

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

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 constituencies, 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 2019 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 company's total available capital has the following components:

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

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

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

- A capital conservation buffer of 2.5%, consisting entirely of capital that qualifies as CET1.
- 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 2019, the buffer increases the minimum CET1 ratio by 0.2%. During the COVID-19 pandemic many central banks and national governments set countercyclical capital buffers to zero to maintain lending to businesses and individuals. This led to the buffer requirement decreasing to 0.1% as of March 2020.
- In addition to the existing capital requirement resulting from Pillar 1, GSBE is subject to Supervisory Review and Evaluation Process (SREP) add-on arising from periodic supervisory review of GSBE's ICAAP by the regulators. The current SREP add-on for GSBE was set by the BaFin and is expected to be replaced by ECB's Pillar 2R and Pillar 2G requirements.

Minimum Regulatory Capital Ratios

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

The following table presents GSBE's minimum required ratios as of December 2019.

Table 1: Minimum Regulatory Capital Ratios

	December 2019
	Minimum ratio[2,3]
CET1 ratio	7.2%
Tier 1 capital ratio	8.7%
Total capital ratio	10.7%

[2] Includes the capital conservation buffer and countercyclical capital buffer described above
[3] Excludes SREP add-on

Compliance with Capital Requirements

As of December 31, 2019, GSBE had capital levels in excess of its minimum regulatory capital requirements including capital conservation buffer, countercyclical capital buffer and SREP add-on.

Regulatory Capital

Overview

The following table presents a breakdown of GSBE's capital ratios under CRR as of December 31, 2019.

Table 2: Regulatory Capital Ratios[4]

€ in thousands	**As of December 2019**
CET1 Capital	€ 686,652
Tier 1 Capital	686,652
Tier 2 Capital	20,000
Total Capital	**€ 706,652**
RWAs	**€ 1,221,755**
CET1 Ratio	**56.2%**
Tier 1 Capital Ratio	**56.2%**
Total Capital Ratio	**57.8%**

Transitional Impact of IFRS 9

IFRS9 addresses the classification, measurement and recognition of financial assets and financial liabilities. It replaces the guidance in IAS 39 – Financial Instruments: Recognition and Measurement that relates to the classification and measurement of financial instruments. Based on the fact that GSBE's 2019 financial statements are prepared based on DE GAAP, no further disclosures for the transitional impact of IFRS 9 are made in this document.

[4] Ratios are calculated using the regulatory capital resources as of December 31, 2019 excluding 2019 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 60.6%, 60.6% and 62.3% respectively

Capital Structure

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

The following tables contain information on the components of our regulatory capital structure. The capital resources of GSBE are based on audited, statutory financial statements.

Table 3: Regulatory Capital Resources

€ in thousands	**As of December 2019**
Ordinary Share Capital	€ 310,000
Statutory Reserves	86,307
Retained Earnings	344,659
2019 Year-end Profits[5]	(54,314)
CET1 Capital Before Deductions	**€ 686,652**
CET1 Deductions	-
CET1 Capital After Deductions	**€ 686,652**
Additional Tier 1 capital	**-**
Tier 1 Capital After Deductions	**€ 686,652**
Tier 2 Capital Before Deductions	20,000
Other Adjustments	-
Tier 2 Capital After Deductions	**€ 20,000**
Total Capital Resources	**€ 706,652**

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 2019**
Total Shareholders' Funds per audited Balance Sheet	€ 740,966
2019 Year-end Profits[5]	(54,314)
Regulatory deductions	-
Additional Tier 1 Capital	-
Tier 2 Capital	20,000
Total Capital Resources	**€ 706,652**

[5] Exclusion of 2019 year-end profits in accordance with Article 26(2) of the regulation 575/2013

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, 2019 and December 31, 2018.

Table 5: Overview of RWAs

€ in thousands

		RWAs		Minimum capital requirements
		December 2019	December 2018	
1	**Credit risk (excluding CCR)**	**€ 168,226**	**€ 111,695**	**€ 13,458**
2	Of which the standardised approach	168,226	111,695	13,458
6	**CCR**	**€ 744,899**	**€ 363**	**€ 59,592**
7	Of which mark to market	22,486	-	1,799
9	Of which the standardised approach	-	363	-
10	Of which internal model method (IMM)	531,198	-	42,496
11	Of which risk exposure amount for contributions to the default fund of a CCP	45,626	-	3,650
12	Of which CVA	145,589	-	11,647
13	**Settlement risk**	**€ 19,133**	**-**	**€ 1,531**
14	**Securitisation exposures in the banking book (after the cap)**	**€ 14,274**	**-**	**€ 1,142**
17	Of which External Ratings Based Approach (SEC-ERBA)	1,161	-	93
18	Of which Standardised Approach (SEC-SA)	13,113	-	1,049
19	**Market risk**	**€ 5,438**	**€ 15,756**	**€ 435**
20	Of which the standardised approach	5,438	15,756	435
21	Of which IMA	-	-	-
22	**Large exposures**	-	-	-
23	**Operational risk**	**€ 269,784**	**€ 253,891**	**€ 21,583**
24	Of which basic indicator approach	269,784	253,891	21,583
29	**Total**	**€ 1,221,755**	**€ 381,705**	**€ 97,740**

Total RWA increased by € 840 million mainly due to Counterparty Credit Risk and CVA RWAs driven by higher trading volumes as a result of business growth in 2019, decreasing the total capital ratio from 95.0% in December 2018 to 57.8% in December 2019.

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 with banks. Credit risk also comes from securities financing transactions (i.e., resale and repurchase agreements and securities borrowing and lending activities), loans and lending commitments, and other receivables.

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

In addition, we hold other positions that give rise to credit risk (e.g., bonds held in our inventory). These risks are captured as a component of market risk measures, which are monitored and managed by Market Risk.

Credit Risk Management Process

The firm's process for managing credit risk includes the critical components of the risk management framework described in the "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 2019 Form 10-K, as well as the following:

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

Credit Risk also performs credit reviews, which include initial and ongoing analyses of the firm's counterparties. For substantially all credit exposures, the core of the process is an annual counterparty credit review. A credit review is an independent analysis of the capacity and willingness of a counterparty to meet its financial obligations, resulting in an internal credit rating. The determination of internal credit ratings also incorporates assumptions with respect to the nature of and outlook for the counterparty's industry, and the economic environment. Personnel, with expertise in specific industries, inspect and approve credit reviews and internal credit ratings.

The firm's risk assessment process may also include, where applicable, reviewing certain key metrics, including, but not limited to, delinquency status, collateral values, credit scores and other risk factors.

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

Risk Measures

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

Limits

Credit limits 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) approves 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 regularly reviewing and, as required, revising these limits to reflect changing risk appetites as well as for monitoring these limits and identifying and escalating to senior management and/or the appropriate risk committee, on a timely basis, instances where limits have been exceeded.

Credit Exposures

For information on the firm's credit exposures, including the gross fair value, netting benefits and current exposure of the firm's derivative exposures and the firm's securities financing transactions, see "Note 7. Derivatives and Hedging Activities" and "Note 11. Collateralized Agreements and Financings" in Part II, Item 8 "Financial Statements and Supplementary Data" and "Credit Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2019 Form 10-K.

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 regulatory non-objection permission 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, 2019 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 used for regulatory capital 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, 2019.

Table 6: Analysis of CCR Exposure by Approach

€ in thousands — **As of December 2019**

		Notional	Replacement cost/current market value	Potential future credit exposure	EEPE	Multiplier	EAD post CRM	RWAs
1	Mark to market		€ 63,789	€ 18,453			€ 82,242	€ 22,486
4	IMM (for derivatives and SFTs)				1,111,200	1.40	1,555,679	524,581
5	*Of which securities financing transactions*				14,799	1.40	20,718	4,243
6	*Of which derivatives and long settlement transactions*				1,096,401	1.40	1,534,961	520,339
11	**Total**							**€ 547,067**

The following table presents GSBE's EAD after credit risk mitigation and RWAs on exposures to CCPs as of December 31, 2019.

Table 7: Exposures to CCPs

€ in thousands — **As of December 2019**

		EAD post CRM	RWAs
1	**Exposures to QCCPs (total)**		**€ 52,427**
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	44,721	894
3	(i) OTC derivatives	44,721	894
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	295,328	5,907
9	Prefunded default fund contributions	56,633	45,626
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, 2019.

Table 8: CVA VaR Capital Charge

€ in thousands			**As of December 2019**
		Exposure value	**RWAs**
1	Total portfolios subject to the advanced method	€ 769,514	€ 137,283
2	(i) VaR component (including the 3× multiplier)		32,962
3	(ii) SVaR component (including the 3× multiplier)		104,321
4	All portfolios subject to the standardised method	4,379	8,306
5	**Total subject to the CVA capital charge**	**€ 773,893**	**€ 145,589**

The following table presents GSBE's total and average amount of net balance sheet Credit Risk exposures over the twelve month period by exposure class as of December 31, 2019.

Table 9: Total and Average Net Amount of Exposures

€ in thousands			**As of December 2019**
		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	1,010,295	928,803
21	Institutions	92,860	172,325
22	Corporates	206,066	198,310
33	Equity exposures	428	434
34	Other exposures	37,181	25,213
35	***Total standardised approach***	**€ 1,346,830**	**€ 1,325,086**
36	***Total***	**€ 1,346,830**	**€ 1,325,086**

Credit Risk Mitigation

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

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

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

As of December 2019, 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 employ a variety of potential risk mitigants. Risk mitigants include: collateral provisions, guarantees, covenants, structural seniority of the bank loan claims and, for certain lending commitments, provisions in the legal documentation that allow us to adjust loan amounts, pricing, structure and other terms as market conditions change. The type and structure of risk mitigants employed can significantly influence the degree of credit risk involved in a loan or lending commitment.

When we do not have sufficient visibility into a counterparty's financial strength or when we believe a counterparty requires support from its parent or another third-party, we 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. We may also mitigate our credit risk using credit derivatives or participation agreements.

The following table presents GSBE's net carrying values of credit risk exposures secured by different CRM techniques as of December 31, 2019.

Table 10: CRM Techniques

€ in thousands **As of December 2019**

		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	€ 167,667	€ 10,419	€ 10,419	-	-
2	Total debt securities	-	-	-	-	-
3	**Total exposures**	**€ 167,667**	**€ 10,419**	**€ 10,419**	**-**	**-**
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 2019 Financial Statements.

The following table presents GSBE's exposure to credit derivatives based on notional and fair values as of December 31, 2019.

Table 11: Credit Derivatives Exposures

€ in thousands **As of December 2019**

	Credit derivative hedges		Other credit derivatives
	Protection bought	Protection sold	
Notionals			
Index credit default swaps	€ 9,688,526	€ 9,688,526	-
Total return swaps	-	-	-
Other credit default swaps	2,437,705	2,437,705	-
Other credit derivatives	-	-	16,896,707
Total notionals	**€ 12,126,231**	**€ 12,126,231**	**€ 16,896,707**
Fair values	**-**	**-**	**-**
Positive fair value (asset)	**€ 63,937**	**€ 344,165**	**€ 7,046**
Negative fair value (liability)	**€ 344,165**	**€ 63,937**	**€ 7,046**

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.

Allowance for Losses on Loans and Lending Commitments

For information on GSBE's impaired loans, past due loans, loans on non-accrual status, and allowance for losses on loans and lending commitments, see GSBE's 2019 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).

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.

Banking Book Activity

All securitisation exposures as of December 31, 2019 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 EU 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.

Calculation of Risk-Weighted Assets

Securitisations issued during the year are capitalised under the new securitisation framework that came into effect in 2019, which follows the new hierarchy of approaches.

The hierarchy introduces three primary methods, the SEC-IRBA (Internal Ratings Based Approach), SEC-SA (Standardized Approach), and SEC-ERBA (External Ratings Based Approach).

The following tables show our securitisation exposures in the banking book by type of exposure and risk weight band as of December 31, 2019.

Table 12: Securitisation Exposures by Type

€ in thousands	As of December 2019		
	On-balance-sheet Exposures	Off-balance-sheet Exposures	Total Exposure Amount
	Traditional	Synthetic	
Residential mortgages	€ 18,114	-	€ 18,114
Commercial mortgages	-	-	-
Corporates	-	-	-
Asset-backed and other	-	-	-
Total	**€ 18,114**	**-**	**€ 18,114**

Table 13: Securitisation Exposures and Related RWAs by Risk Weight Bands

€ in thousands	As of December 2019	
	Exposure Amount	RWAs
0% - 25%	€ 15,845	€ 1,584
26% - 100%	1,132	682
101% - 250%	215	479
251% - 650%	-	-
651% - 1,250%	922	11,529
Total	**€ 18,114**	**€ 14,274**

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 firm's process for managing market risk includes the critical components of the risk management framework described in the "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 2019 Form 10-K, as well as the following:

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

Market Risk produces risk measures and monitors them against established market risk limits. These measures reflect an extensive range of scenarios and the results are aggregated at product, business and firmwide levels. For additional information regarding the firm's market risk measures and risk limits, see "Risk Management – Market Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2019 Form 10-K.

Market Risk-Weighted Assets

Trading book positions are subject to market risk capital requirements which are designed to cover the risk of loss in value of these positions due to changes in market conditions. These capital requirements are determined either by applying prescribed risk weighting factors, 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 regulatory non-objection permission 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.

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.

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, liquidity horizons and correlation of default and migration risk. The liquidity horizon is calculated based upon the size of exposures and the speed at which we can reduce risk by hedging or unwinding positions, given our experience during a historical stress period, and is subject to the prescribed regulatory minimum.

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.

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

Regulatory VaR Backtesting Results

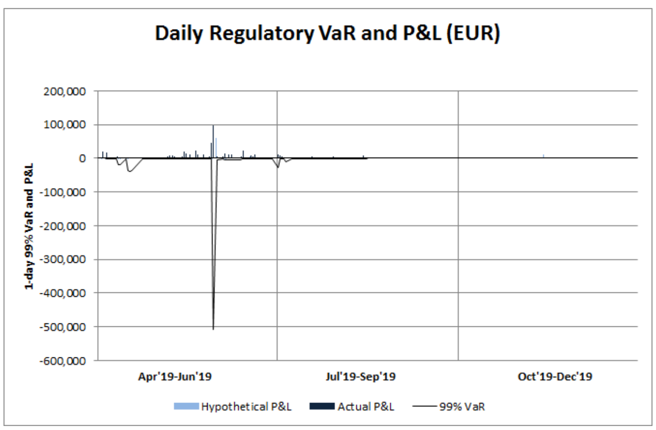
As required by the CRR market risk capital rules, we validate the accuracy of our Regulatory VaR models by backtesting the output of such models against daily loss results. The number of exceptions (that is, the number of overshootings based on comparing the higher of positional or actual losses to the 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. See "Risk Management — Market Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2019 Form 10-K.

GSBE's hypothetical losses observed on a single day exceeded our 99% one-day Regulatory VaR twice during the three quarters[6] preceding December 2019, driven by volatility in JPY/EUR Fx rate. GSBE actual losses observed on a single day did not exceed our 99% one-day Regulatory VaR during the three quarters preceding December 2019. 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 14: Comparison of VaR estimates with gains/losses



[6] GSBE VaR Backtesting Started in Q2 2019

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

	Multiplier	Number of reported excesses: Hypothetical	Actual
Backtesting			
GSBE	**3.00**	**2**	**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 firm's stress testing practices, see "Risk Management – Market Risk Management – Risk Measures – Stress Testing" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2019 10-K.

The GSBE VaR in the entity was zero as of 31 December 2019 due to back to back hedging with GS affiliates. Market risk weighted assets of GSBE as of 31 December 2019 represents risk weighted assets under standardised approach.

The table below presents the components of own funds requirements as of December 31, 2019.

Table 15: Market Risk under the Standardised Approach

€ in thousands — **As of December 2019**

		RWAs	Capital requirements
	Outright products		
1	Interest rate risk (general and specific)	-	-
2	Equity risk (general and specific)	-	-
3	Foreign exchange risk	5,438	435
4	Commodity risk	-	-
4a	Collective investment undertakings	-	-
	Options		
5	Simplified approach	-	-
8	Securitisation (specific risk)	-	-
9	**Total**	**€ 5,438**	**€ 435**

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.

For further information regarding asset-liability management, see “Risk Management – Interest Rate Risk in the banking Book (IRRBB)” within “Management Report” of GSBE’s 2019 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 Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2019 Form 10-K.

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 in part 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.

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

Capital Requirements

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

Table 16: Operational Risk Capital Requirement

€ in thousands	**As of December 2019**
Basic Indicator Approach	€ 21,583

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 financial liabilities, to monitor and manage risk, and to measure and monitor regulatory capital.

Model Risk, which is independent of revenue-producing units, model developers, model owners and model users, and reports to the firm's chief risk officer and locally into GSBE's chief risk officer, has primary responsibility for assessing, monitoring and managing model risk through firmwide 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

Model Risk consists of quantitative professionals who perform an independent review, validation and approval of the firm's models. This review includes an analysis of the model documentation, independent testing, an assessment of the appropriateness of the methodology used, and verification of compliance with model development and implementation standards.

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 trade and risk parameters across a broad range of scenarios (including extreme conditions) in order to critically evaluate and verify:

- The model's conceptual soundness, including the reasonableness of model assumptions, and suitability for intended use;
- The testing strategy utilised by the model developers to ensure that the models function as intended;
- The suitability of the calculation techniques incorporated in the model;
- The model's accuracy in reflecting the characteristics of the related product and its significant risks;
- The model's consistency with models for similar products; and
- The model's sensitivity to input parameters and assumptions.

For more information regarding the use of models within these areas, see "Critical Accounting Policies – Fair Value – Review of Valuation Models," "Risk Management – Liquidity Risk Management," "Risk Management – Market Risk Management," "Risk Management – Credit Risk Management" and "Risk Management – Operational Risk Management" in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the firm's 2019 Form 10-K and "Credit Risk", "Market Risk", and "Operational Risk" in this document.

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 will become effective for GSBE on 27 June 2021. This leverage ratio is based on our current interpretation and understanding of this rule and may evolve as the interpretation and application of this rule is discussed with our regulators.

Table 17: Leverage Ratio[7]

€ in thousands	**As of December 2019**
Tier 1 Capital	€ 686,652
Leverage Ratio Exposure	€ 7,027,024
Leverage Ratio	9.8%

[7] The ratio is calculated using the regulatory capital resources as of December 31, 2019 excluding 2019 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 10.5%.

The following tables present further information on the leverage ratio. Table 18 reconciles the exposure measure to the balance sheet of GSBE. Table 19 breaks down the exposures from on-balance sheet assets by trading and banking book. Table 20 gives further details on the adjustments and drivers of the leverage ratio.

Table 18: Summary Reconciliation of Accounting Assets and Leverage Ratio Exposures

€ in thousands	**As of December 2019**
Total assets as per published financial statements	**€ 3,372,097**
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[8]	3,517,555
Adjustments for securities financing transactions[8]	8,570
Adjustment for off-balance sheet items[8]	116,822
Adjustment for intragroup exposures excluded from the leverage ratio exposure measure in accordance with Article 429(7) of Regulation (EU) No 575/2013	-
Adjustment for exposures excluded from the leverage ratio exposure measure in accordance with Article 429(14) of Regulation (EU) No 575/2013	-
Other adjustments	11,980
Total leverage ratio exposure	**€ 7,027,024**

[8] 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 20.

Table 19: On-Balance Sheet Exposures

€ in thousands	**As of December 2019**
Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	**€ 2,159,122**
Trading book exposures	**€ 915,631**
Banking book exposures, of which:	**€ 1,243,491**
Covered bonds	-
Exposures treated as sovereigns	1,010,295
Exposures to regional governments, MDB, international organisations and PSE not treated as sovereigns	-
Institutions	149,493
Secured by mortgages of immovable properties	-
Retail exposures	-
Corporate	27,979
Exposures in default	-
Other exposures	55,724

Table 20: Leverage Ratio Common Disclosure

€ in thousands	**As of December 2019**
On-balance sheet exposures (excluding derivatives and SFTs)	
On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	€ 2,159,122
Asset amounts deducted in determining Tier 1 capital	-
Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	**€ 2,159,122**
Derivative exposures	
Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	926,622
Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	3,774,156
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	-
Exempted CCP leg of client-cleared trade exposures	(256,601)
Adjusted effective notional amount of written credit derivatives	20,559,159
Adjusted effective notional offsets and add-on deductions for written credit derivatives	(20,559,159)
Total derivative exposures	**€ 4,444,177**
SFT exposures	
Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	298,333
Netted amounts of cash payables and cash receivables of gross SFT assets	-
Counterparty credit risk exposure for SFT assets	8,570
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	**€ 306,903**
Other off-balance sheet exposures	
Off-balance sheet exposures at gross notional amount	316,951
Adjustments for conversion to credit equivalent amounts	(200,130)
Other off-balance sheet exposures	**€ 116,822**
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)	-
Capital and total exposures	
Tier 1 capital	€ 686,652
Total leverage ratio exposures	**€ 7,027,024**
Leverage ratio	
Leverage ratio	**9.8%**
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 decreased from 46.0% in December 2018 to 9.8% in December 2019 due to increases in On and Off Balance Sheet exposures reflecting an increase in Balance Sheet size and business activity throughout the year as a part of the bank's Brexit strategy.

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 as calculated above and have processes in place to dynamically manage our assets and liabilities. These processes include:

- Monthly leverage ratio monitoring is conducted for 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 21: Own Funds Disclosure

€ in thousands	**As of December 2019**
Capital instruments and the related share premium accounts	€ 310,000
Paid up capital instruments	310,000
Share premium	-
Retained earnings	344,659
Statutory Reserves	86,307
Common Equity Tier 1 (CET1) capital before regulatory adjustments	**€ 740,966**
CET1 Regulatory Deductions	-
Adjustment for Unaudited Profits as of December 31, 2019	(54,314)
Total regulatory adjustments to Common equity Tier 1 (CET1)	**€ (54,314)**
Common Equity Tier 1 (CET1) capital	**€ 686,652**
Additional Tier 1 (AT1) capital	**-**
Tier 1 capital (T1 = CET1 + AT1)	**€ 686,652**
Tier 2 Long Term Sub-Debt	20,000
Tier 2 (T2) capital	**€ 20,000**
Total capital (TC = T1 + T2)	**€ 706,652**
Total risk weighted assets	**€ 1,221,755**
Common Equity Tier 1 (as a percentage of risk exposure amount)	56.2%
Tier 1 (as a percentage of risk exposure amount)	56.2%
Total capital (as a percentage of risk exposure amount)	57.8%
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)	8.0%
Of which: Capital conservation buffer requirement	2.5%
Of which: Counter cyclical buffer requirement	0.2%
Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	51.7%
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)	**-**
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)	0.0%

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 22: Countercyclical Capital Buffer

€ in thousands	As of December 2019
Total risk exposure amount	**€ 1,221,755**
Countercyclical buffer rate	**0.2%**
Countercyclical buffer requirement	**2,744**

The geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer is broken down in Table 29.

As of December 31, 2019 GSBE had recognised exposures to counterparties from France, Hong Kong, Czech Republic, Ireland and UK 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 23: Geographical Distribution of Credit Exposures Relevant for the Calculation of the Buffer

€ in thousands — As of December 2019

	General credit		Trading book exposure		Securitisation		Own funds requirements					
Breakdown by Country	Exposure value for SA	Exposure value for IRB	Sum of long and short position of trading book	Value of trading book exposure for internal models	Exposure value for SA	Exposure value for IRB	Of which: General credit exposures	Of which: Trading book exposures	Of which: Securitisation exposures	Total	Own funds requirement weights	Counter-cyclical capital buffer rate
France	€ 62,319	-	-	€ 26,253	-	-	€ 499	€ 1,390	-	€ 1,889	6.7%	0.25%
Hong Kong	-	-	-	26,916	-	-	-	2,153	-	2,153	7.7%	2.00%
Czech Republic	-	-	-	11,312	-	-	-	905	-	905	3.2%	1.50%
Ireland	-	-	-	1,918	-	-	-	153	-	153	0.5%	1.00%
United Kingdom	11	-	-	-	-	-	1	-	-	1	0.0%	1.00%
Other	181,345	-	-	252,882	18,114	-	9,505	12,258	1,142	22,905	81.8%	0.00%
Total	**€ 243,675**	**-**	**-**	**€ 319,280**	**€ 18,114**	**-**	**€ 10,004**	**€ 16,860**	**€ 1,142**	**€ 28,007**	**100.0%**	**0.22%**

Capital Instruments

The following table summarises the main features of capital instruments for GSBE as of December 2019

Table 24: GSBE Capital Instruments' Main Features Template

€ in thousands		**As of December 2019**
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	€ 310,000	€ 20,000
Nominal amount of instrument	€ 310,000	€ 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[9]	01/07/2011; 25/02/2019	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

[9] First date of ordinary share issuance

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 25 February 2019, the shareholders of GSBE injected a total of €300 million of equity into the entity in the form of 300 million new shares

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, 2019, female members comprised two thirds 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, 2019, 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 three[10] members and the tasks of a risk committee are performed by the entire Supervisory Board. 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 7.

[10] Since February 2020, the Supervisory Board consists of four members. See fn. 13 below

Table 25a: GSBE Executive Board of Directors

Name	Background	Directorships[11]
M. Bock	Matthias Bock joined the GSBE Executive Board in July 2011 and is general counsel of GSBE. He oversees the Legal departments in Frankfurt and Moscow and chairs the EMEA Legal Regulatory Working Group. Dr. Bock also serves as branch manager of Goldman Sachs International Bank, Frankfurt. He joined Goldman Sachs in 2000. He is deputy chairman of the Association of Banks in Hesse and a member of the Committee for Foreign Banks and of the Legal Committee of the German Banking Association. 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**
P. Chavenon	As of December 31, 2019, Pierre Chavenon was the chief risk officer of GSBE, having joined the Executive Board in February 2019. Previously, Mr. Chavenon was global head of the Credit Rating Advisory Group. Earlier in his career, he had oversight of the lending, underwriting, debt investing and credit rating advisory activities in CRMA for EMEA. In this role, Mr. Chavenon served on the Credit Markets Capital Committee and the Asia Pacific Capital Committee. He joined Goldman Sachs in 1999. Pierre graduated from ESSEC Business School in France in 1999.[12]	**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. In addition, Mr. Degn-Petersen is a member of the EMEA Operational Risk 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. In this role, he has overall responsibility for the firm's business across this region. In addition, he is head of Investment Banking in Germany and Austria. Dr. Fink is a member of the Partnership Committee and the European Management Committee. He 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**

[11] 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 six directorships, Mr. Degn-Petersen holds four directorships, Mr. Chavenon held two directorships and Dr. Fink holds two directorships.

[12] Mr. Chavenon left GSBE on March 30, 2020. His position is currently vacant. At present, the role of the chief risk officer is exercised by the Executive Board in its entirety.

Table 25b: 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, GSIB, Goldman Sachs Ireland Holdings Limited and Goldman Sachs (UK) L.L.C. and chief operating officer for EMEA. He is also the Chair of the Supervisory Boards of Goldman Sachs Group Europe SE and Goldman Sachs Europe SE and a non-executive director of Goldman Sachs Bank USA, since August 2019. He serves on a number of the firm's committees including the European Management Committee, Firmwide Enterprise Risk Committee, Global Business and Operational Resilience Committee, Firmwide Risk Committee and the Firmwide Asset and Liability Committee. Additionally, Dermot co-chairs the GSI Risk Committee and the EMEA Culture and Conduct Risk 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 director 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**

[13] The table reflects the members of the Supervisory Board as of December 31, 2019. Dr. Wolfgang Feuring joined the GSBE Supervisory Board as an independent member in February 2020.

[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 eight directorships and Ms. Stecher holds six 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 LCR requirements as set out in the European Commission Delegated Regulation 2015/61 (LCR Delegated Act) effective October 1, 2015.

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 operating 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 2019 was 10,067%. This ratio is based on our current interpretation and understanding of the LCR Delegated Act and may evolve as its interpretation and application is discussed with our regulators.

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

Table 26: Liquidity Coverage Ratio

	Twelve Months Ended December 2019
€ in millions	**Average Weighted**
Total high-quality liquid assets (HQLA)	**€ 956.0**
Net cash outflows	**€ 168.6**
Liquidity coverage ratio[15]	**10,067%**

[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"

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 LCR Delegated Act defines 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.

Our HQLA substantially consists of Level 1 assets.

Net Cash Outflows

Overview

The LCR Delegated Act defines 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 term placements with affiliates.

Unsecured and Secured Funding

Unsecured Funding

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 from institutional clients and affiliates

The LCR Delegated Act requires 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 LCR Delegated Act also prescribes outflows related to a partial loss of deposits funding.

Secured Funding

GSBE funds the inventory on a secured basis, through various secured funding transactions including repurchase agreements, securities loaned and other secured financings. The LCR delegated act prescribes outflows that may arise from the bank's inability to secure refinancing for such inventory as the secured funding transactions mature.

GSBE also provides financing on a secured basis against Government and non-Government collateral, which may help offset such outflows.

Derivatives

Overview

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

GSBE engages in securities and derivatives sales and trading and other securities/derivatives activities. As part of GS Group, the bank also enters into transactions with affiliates in normal course of business as part of its market-making activities and general operations.

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

Derivative Net Cash Outflows

The LCR Delegated Act requires 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 LCR Delegated Act requires that NCOs reflect certain contingent outflows related to a bank's derivative positions that may arise during a 30 calendar-day stress scenario, including:

- 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 LCR Delegated Act applies 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, 2019. All numbers in the tables are based on German Generally Accepted Accounting Practices (GAAP) Handelsgesetzbuch (HGB) and 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 27: Encumbered and Unencumbered Assets

€ 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
Assets of the Reporting Institution [16]	**287,917**	**-**	**N/A**[17]	**N/A**[17]	**2,218,231**	**933,824**	**N/A**[17]	**N/A**[17]

16 The figures in Table 28 are a subset of Assets of the Reporting Institution in Table 27

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

Table 28: 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	-	-	**N/A**[19]	**N/A**[19]	**25,710**	-	**N/A**[19]	**N/A**[19]
Debt Securities[20]	-	-	-	-	-	-	-	-
of which: covered bonds	-	-	-	-	-	-	-	-
of which: asset-backed securities	-	-	-	-	-	-	-	-
of which: issued by general governments	-	-	-	-	-	-	-	-
of which: issued by financial corporations	-	-	-	-	-	-	-	-
of which: issued by non-financial corporations	-	-	-	-	-	-	-	-
Other Assets	**287,917**	-	**N/A**[19]	**N/A**[19]	**2,139,619**[21]	**933,824**	**N/A**[19]	**N/A**[19]

18 The figures in Table 28 are a subset of Assets of the Reporting Institution in Table 27

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 29: 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]	**379,721**	**375,898**	**408,554**	**195,737**

22 The figures shown in Table 30 are a subset of Collateral Received by the Reporting Institution in Table 29

23 Collateral Received by the Reporting Institution does not include cash collateral which is included as an on-balance-sheet asset in Tables 27 and 28

Table 30: 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	**1,821**	**-**	**128,422**	**16,360**
Debt Securities	**376,063**	**375,888**	**265,135**	**140,191**
of which: covered bonds	**48**	**-**	**36,922**	**-**
of which: asset-backed securities	-	-	-	-
of which: issued by general governments	361,497	361,497	132,645	119,098
of which: issued by financial corporations[26]	6	-	31,080	2,469
of which: issued by non-financial corporations	5,250	5,228	10,687	1,562
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[25]**	**N/A[25]**	**-**	**-**
Total Assets, Collateral received and Own Debt Securities Issued	**723,905**	**375,898**	**N/A[25]**	**N/A[25]**

24 The figures shown in Table 30 are a subset of Collateral Received by the Reporting Institution in Table 29

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

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

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

Table 31: 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]	**260,431**	**578,254**

27 There may be a mismatch between liabilities and encumbered assets and collateral received driven by the GAAP 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 GAAP presentation of derivatives and encumbrance methodology. In this disclosure, derivative instruments are reported in accordance with German GAAP. In addition, total assets include collateralised lending where the receivable is reported as a balance sheet asset in Tables 27 and 28 and the underlying collateral received is reported in Tables 29 and 30 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), Global Master Repurchase Agreements (GMRAs) and Deutscher Rahmenvertrag für Finanztermingeschäfte (DRV)). 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.

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 2019 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, 2019 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 32: Differences Between Accounting and Regulatory Scopes of Consolidation and Mapping of Financial Statement Categories with Regulatory Risk Categories

€ in thousands **As of December 2019**

	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 reserve	€ 1,010,296	€ 1,010,296	-	-	-	-
Receivables from banks	58,473	58,473	-	-	-	-
Receivables from customers	223,022	69,539	153,483	-	-	-
Bonds and other fixed-income securities	18,118	-	-	18,118	-	-
Trading assets	1,202,073	-	1,065,514	-	1,070,214	-
Investments in affiliated companies	428	428	-	-	-	-
Fixed assets	23,064	23,064	-	-	-	-
Other Assets	836,572	6,893	829,679	-	-	-
Prepaid Expenses	51	51	-	-	-	-
Total assets	**€ 3,372,097**	**€ 1,168,743**	**€ 2,048,676**	**€ 18,118**	**€ 1,070,214**	**-**
Liabilities						
Liabilities to banks	€ 12,009	-	-	-	-	€ 12,009
Liabilities to customers	648,065	-	-	-	-	648,065
Trading Liabilities	902,478	-	759,215	-	771,933	-
Other liabilities	914,464	-	887,843	-	-	26,621
Subordinated debt	20,000	-	-	-	-	20,000
Total liabilities	**€ 2,497,015**	**-**	**€ 1,647,058**	**-**	**€ 771,933**	**€ 706,694**

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

€ in thousands		As of December 2019		
		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)**	**€ 1,168,743**	**€ 2,048,676**	**€ 18,118**
2	Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	-	(1,647,058)	-
3	Total net amount under the regulatory scope of consolidation	1,168,743	401,618	18,118
4	Off-balance-sheet amounts[28]	178,086	-	-
5	*Differences due to credit conversion factor*	(83,834)	-	-
6	*Differences due netting of collateral, haircut and EAD modelling*	(10,419)	1,286,304	(4)
7	**Exposure amounts considered for regulatory purposes**	**€ 1,252,577**	**€ 1,687,922**	**€ 18,114**

[28]**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 DE GAAP, netting is only permitted 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, 2019.

Table 34: Geographical Breakdown of Exposures

€ in thousands | **As of December 2019**

		Net value									
		EMEA	Germany	France	United Kingdom	Other countries	**Americas**	United States	Other countries	**Asia**	**Total**
6	***Total IRB approach***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
7	Central governments or central banks	1,010,295	1,000,255	-	-	10,040	-	-	-	-	1,010,295
8	Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-
9	Public sector entities	-	-	-	-	-	-	-	-	-	-
10	Multilateral development banks	-	-	-	-	-	-	-	-	-	-
11	International organisations	-	-	-	-	-	-	-	-	-	-
12	Institutions	54,724	14,940	7,088	23,941	8,754	29,338	16,539	12,799	8,798	92,860
13	Corporates	82,770	11,626	62,319	11	8,814	115,768	115,768	-	7,528	206,066
14	Retail	-	-	-	-	-	-	-	-	-	-
16	Exposures in default	-	-	-	-	-	-	-	-	-	-
17	Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-
21	Equity exposures	428	428	-	-	-	-	-	-	-	428
22	Other exposures	37,181	37,181	-	-	-	-	-	-	-	37,181
23	***Total standardised approach***	**€ 1,185,398**	**€ 1,064,430**	**€ 69,407**	**€ 23,953**	**€ 27,608**	**€ 145,106**	**€ 132,307**	**€ 12,799**	**€ 16,326**	**€ 1,346,830**
24	***Total***	**€ 1,185,398**	**€ 1,064,430**	**€ 69,407**	**€ 23,953**	**€ 27,608**	**€ 145,106**	**€ 132,307**	**€ 12,799**	**€ 16,326**	**€ 1,346,830**

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, 2019.

Table 35: Concentration of Exposures by Industry or Counterparty Types

€ in thousands — **As of December 2019**

		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	1,010,295	-	-	-	-	-	-	-	-	1,010,295
8	Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-
9	Public sector entities	-	-	-	-	-	-	-	-	-	-
10	Multilateral development banks	-	-	-	-	-	-	-	-	-	-
11	International organisations	-	-	-	-	-	-	-	-	-	-
12	Institutions	-	60,273	4,830	27,757	-	-	-	-	-	92,860
13	Corporates	-	7,932	5,904	119,399	0	1,732	4,000	-	67,099	206,066
14	Retail	-	-	-	-	-	-	-	-	-	-
16	Exposures in default	-	-	-	-	-	-	-	-	-	-
17	Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-
21	Equity exposures	-	-	-	400	-	-	-	-	28	428
22	Other exposures	-	-	-	-	-	-	-	-	37,181	37,181
23	***Total standardised approach***	**€ 1,010,295**	**€ 68,205**	**€ 10,734**	**€ 147,557**	**€ 0**	**€ 1,732**	**€ 4,000**	**-**	**€ 104,308**	**€ 1,346,830**
24	***Total***	**€ 1,010,295**	**€ 68,205**	**€ 10,734**	**€ 147,557**	**€ 0**	**€ 1,732**	**€ 4,000**	**-**	**€ 104,308**	**€ 1,346,830**

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, 2019.

Table 36: Maturity of Exposures

€ in thousands							As of December 2019
		On demand	**< = 1 year**	**> 1 year < = 5 years**	**> 5 years**	**No stated maturity**	**Total**
6	***Total IRB approach***	**-**	**-**	**-**	**-**	**-**	**-**
7	Central governments or central banks	1,010,295	-	-	-	-	1,010,295
8	Regional governments or local authorities	-	-	-	-	-	-
9	Public sector entities	-	-	-	-	-	-
10	Multilateral development banks	-	-	-	-	-	-
11	International organisations	-	-	-	-	-	-
12	Institutions	87,446	-	-	5,414	-	92,860
13	Corporates	27,979	-	178,086	-	-	206,066
14	Retail	-	-	-	-	-	-
16	Exposures in default	-	-	-	-	-	-
17	Items associated with particularly high risk	-	-	-	-	-	-
21	Equity exposures	-	-	-	-	428	428
22	Other exposures	-	-	-	-	37,181	37,181
23	***Total standardised approach***	**€ 1,125,720**	**-**	**€ 178,086**	**€ 5,414**	**€ 37,609**	**€ 1,346,830**
24	***Total***	**€ 1,125,720**	**-**	**€ 178,086**	**€ 5,414**	**€ 37,609**	**€ 1,346,830**

Table 37: Credit Quality of Exposures by Exposure Class and Instrument

€ in thousands								As of December 2019
		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	-	1,010,295	-	-	-	-	1,010,295
17	Regional governments or local authorities	-	-	-	-	-	-	-
18	Public sector entities	-	-	-	-	-	-	-
19	Multilateral development banks	-	-	-	-	-	-	-
20	International organisations	-	-	-	-	-	-	-
21	Institutions	-	92,860	-	-	-	-	92,860
22	Corporates	-	206,085	(19)	-	-	-	206,066
24	Retail	-	-	-	-	-	-	-
28	Exposures in default	-	-	-	-	-	-	-
29	Items associated with particularly high risk	-	-	-	-	-	-	-
33	Equity exposures	-	428	-	-	-	-	428
34	Other exposures	-	37,181	-	-	-	-	37,181
35	***Total standardised approach***	**-**	**€ 1,346,849**	**€ (19)**	**-**	**-**	**-**	**€ 1,346,830**
36	***Total***	**-**	**€ 1,346,849**	**€ (19)**	**-**	**-**	**-**	**€ 1,346,830**
37	Of which: Loans	-	-	-	-	-	-	-
38	Of which: Debt securities	-	-	-	-	-	-	-
39	Of which: Off- balance-sheet exposures	-	178,105	(19)	-	-	-	178,086

Table 38: Credit Quality of Exposures by Industry or Counterparty Types

€ in thousands								As of December 2019
		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
1	Central governments or central banks	-	1,010,295	-	-	-	-	1,010,295
2	Services and other Industries	-	104,327	(19)	-	-	-	104,308
3	Banks	-	68,205	-	-	-	-	68,205
4	Other Financials	-	147,557	-	-	-	-	147,557
5	CCPs and Exchanges	-	10,734	-	-	-	-	10,734
6	Manufacturing	-	1,732	-	-	-	-	1,732
7	Transport, Utilities & Storage	-	4,000	-	-	-	-	4,000
8	Retail / Wholesale trade	-	-	-	-	-	-	-
9	Real Estate	-	0	-	-	-	-	0
	Total	**-**	**€ 1,346,849**	**€ (19)**	**-**	**-**	**-**	**€ 1,346,830**

Table 39: Credit Quality of Exposures by Geography

€ in thousands								As of December 2019
		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
1	EMEA	-	€ 1,185,418	€ (19)	-	-	-	€ 1,185,398
2	Germany	-	1,064,430	-	-	-	-	1,064,430
3	France	-	69,426	(19)	-	-	-	69,407
4	United Kingdom	-	23,953	-	-	-	-	23,953
5	Other Countries	-	27,608	-	-	-	-	27,608
6	Americas	-	145,106	-	-	-	-	145,106
7	United States	-	132,307	-	-	-	-	132,307
8	Other Countries	-	12,799	-	-	-	-	12,799
9	Asia	-	16,326	-	-	-	-	16,326
	Total	**-**	**€ 1,346,849**	**€ (19)**	**-**	**-**	**-**	**€ 1,346,830**

Table 40: Standardised Approach - Credit Risk Exposure and CRM Effects

€ in thousands — **As of December 2019**

	Exposure classes	Exposures before CCF and CRM: On-balance-sheet amount	Exposures before CCF and CRM: Off-balance-sheet amount	Exposures post CCF and CRM: On-balance-sheet amount	Exposures post CCF and CRM: Off-balance-sheet amount	RWAs and RWA density: RWAs	RWAs and RWA density: RWA density
1	Central governments or central banks	1,010,295	-	1,010,295	-	-	0.0%
2	Regional government or local authorities	-	-	-	-	-	-
3	Public sector entities	-	-	-	-	-	-
4	Multilateral development banks	-	-	-	-	-	-
5	International organisations	-	-	-	-	-	-
6	Institutions	92,860	-	92,860	50,000	43,170	30.2%
7	Corporates	27,979	178,086	27,979	83,834	86,885	77.7%
8	Retail	-	-	-	-	-	-
10	Exposures in default	-	-	-	-	-	-
11	Higher-risk categories	-	-	-	-	-	-
15	Equity	428	-	428	-	990	231.3%
16	Other items	37,181	-	37,181	-	37,181	100.0%
17	**Total**	**€ 1,168,743**	**€ 178,086**	**€ 1,168,743**	**€ 133,834**	**€ 168,226**	**12.9%**

Table 41: Standardised Approach

€ in thousands — **As of December 2019**

	Exposure classes	Risk weight: 0%	2%	20%	35%	50%	100%	150%	250%	Total	Of which unrated
1	Central governments or central banks	1,010,295	-	-	-	-	-	-	-	1,010,295	-
2	Regional government or local authorities	-	-	-	-	-	-	-	-	-	-
3	Public sector entities	-	-	-	-	-	-	-	-	-	-
4	Multilateral development banks	-	-	-	-	-	-	-	-	-	-
5	International organisations	-	-	-	-	-	-	-	-	-	-
6	Institutions	-	2,231	90,629	-	50,000	-	-	-	142,860	11,484
7	Corporates	-	-	31,159	-	-	80,653	-	-	111,813	61,599
8	Retail	-	-	-	-	-	-	-	-	-	-
10	Exposures in default	-	-	-	-	-	-	-	-	-	-
11	Higher-risk categories	-	-	-	-	-	-	-	-	-	-
15	Equity	-	-	-	-	-	54	-	374	428	428
16	Other items	-	-	-	-	-	37,181	-	-	37,181	37,181
17	**Total**	**€ 1,010,295**	**€ 2,231**	**€ 121,788**	**-**	**€ 50,000**	**€ 117,888**	**-**	**€ 374**	**€ 1,302,577**	**€ 110,691**

Appendix III: Counterparty Credit Risk Tables

Table 42: Impact of Netting and Collateral Held on Exposure Values[29]

€ in thousands — **As of December 2019**

		Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure[30]
1	Derivatives	€ 3,938,998	€ (2,549,484)	€ 1,389,514	€ 2,895,458	€ 1,667,204
2	SFTs	131,859	-	131,859	269,561	20,718
4	**Total**	**€ 4,070,857**	**€ (2,549,484)**	**€ 1,521,373**	**€ 3,165,020**	**€ 1,687,922**

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

[30] 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 43: Composition of Collateral for Exposures to CCR

€ in thousands — **As of December 2019**

	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	€ 703,529	€ 260,984	€ 185,601	-	€ 246,419	€ 125,723
Equities	93,437	-	-	-	19,189	-
Corporate Bonds	21,386	-	-	-	2,450	15,871
Cash	-	1,816,124	-	1,248,844	1,504	4,782
Other	-	-	-	-	-	-
Total	**€ 818,351**	**€ 2,077,107**	**€ 185,601**	**€ 1,248,844**	**€ 269,561**	**€ 146,376**

Table 44: Standardised approach – CCR exposures by regulatory portfolio and risk

€ in thousands **As of December 2019**

	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	-	-	-	-	-	-	-	-	1	-	-	1	1
2	Regional government or local authorities	5,416	-	-	-	-	-	-	-	-	-	-	5,416	-
3	Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-
5	International organisations	1,829	-	-	-	-	-	-	-	-	-	-	1,829	-
6	Institutions	-	340,049	-	-	656,524	333,236	-	-	31,588	-	-	1,361,396	818,964
7	Corporates	-	-	-	-	49,305	38,163	-	-	181,812	-	-	269,280	102,517
8	Retail	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Other items	-	-	-	-	-	-	-	-	-	-	-	-	-
11	**Total**	**€ 7,244**	**€ 340,049**	**-**	**-**	**€ 705,828**	**€ 371,400**	**-**	**-**	**€ 213,401**	**-**	**-**	**€ 1,637,922**	**€ 921,481**

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

Table 45: Changes in the Stock of General and Specific Credit Risk Adjustments[31]

€ in thousands — **As of December 2019**

		Accumulated specific credit risk adjustment	**Accumulated general credit risk adjustment**
1	**Opening balance as of 31 December 2018**	**-**	**-**
2	Increases due to amounts set aside for estimated loan losses during the period	-	-
3	Decreases due to amounts reversed for estimated loan losses during the period	-	-
6	Impact of exchange rate differences	-	-
8a	Position and valuation changes	19	-
9	**Closing balance as of 31 December 2019**	**€ 19**	**-**

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

Table 46: Non performing and Forborne Exposures[32]

€ in thousands — **As of December 2019**

		Gross carrying amount of performing and non-performing exposures							**Accumulated impairment and provisions and negative fair value adjustments due to credit risk**				**Collaterals and financial guarantees received**	
			Of which performing but past due > 30 days and <= 90 days	**Of which performing forborne**	**Of which non-performing**				**On performing exposures**		**On non-performing exposures**		**On non-performing exposures**	**Of which forborne exposures**
						Of which defaulted	**Of which impaired**	**Of which forborne**		**Of which forborne**		**Of which forborne**		
010	Debt securities	-	-	-	-	-	-	-	-	-	-	-	-	-
020	Loans and advances	-	-	-	-	-	-	-	-	-	-	-	-	-
030	Off-balance-sheet exposures	178,105	-	-	-	-	-	-	(19)	-	-	-	-	-
	Total Exposures	**€ 178,105**	**-**	**-**	**-**	**-**	**-**	**-**	**€ (19)**	**-**	**-**	**-**	**-**	**-**

[32] There were no defaulted or impaired loans and debt securities held during the period

Appendix V: Index of Tables to EBA Templates

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

34. 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

35. Template 6 (Non-deducted participation in insurance undertakings), Template 14 (Ageing of past-due exposures) 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

36. Template 30 has not been disclosed as GSBE was not using IMM for calculating RWAs in December 31, 2018

37. Templates 35, 36 and 37 have not been disclosed as GSBE does not have material exposures