

Goldman Sachs Bank AG
EMIR Article 38(8) Disclosure Statement

Throughout this document references to "we", "our" and "us" are references to Goldman Sachs Bank AG ("**GSBZ**") as client of a clearing member providing clearing services on several EU central counterparties ("**CCPs**"). References to "you" and "your" are references to our client.

1. Introduction

Pursuant to EMIR Article 38(8), we are required to inform you about:

- (a) information on the way that the margin models of the CCP work;*
- (b) information on the situations and conditions that might trigger margin calls;*
- (c) information on the procedures used to establish the amount to be posted by the clients; and*
- (d) a simulation of the margin requirements to which clients might be subject under different scenarios.*

ESMA is required to develop and submit draft regulatory technical standards, within 12 months from the date of entry into force of EMIR 3.0, to further specify (among other things): (i) the information to be provided by clearing service providers to their clients and (ii) the requirements of the simulation of margins to be provided to clients and the type of output to be provided.

At the time of publication of this Disclosure Statement, ESMA has not yet published the draft regulatory technical standards referred to above, therefore this document has been drafted on a 'best efforts basis' considering the requirements in EMIR Article 38(8) set out above and considering information made publicly available by CCPs.

This Disclosure Statement has been drafted by experts at clearing firms that participated in the FIA Working Group on EMIR Article 38(8). CCPs and other market participants did not review or provide input into this document, which is based solely on the publicly available information that the FIA Working Group members have collected.

2. Information on the way that the margin models of the CCP work

2.1 General CCP margin information

CCPs usually call their members for two margin types, namely variation margin and initial margin.¹

2.1.1 Variation margin

Variation margin (VM) represents margin collected or paid out to reflect current exposures resulting from actual changes in market price². VM, normally paid in cash and transferred outright or with full title to a CCP or by a CCP, is a risk management tool designed to ensure that amounts representing the gains and losses under cleared derivatives contracts are transferred regularly as market prices fluctuate, preventing the build-up of large, unrealized losses. CCPs typically require that VM be posted in cash in the currency of the underlying transactions, depending on the specific terms of the contract.

For some other contracts, VM is collected and accrued by the CCP for the duration of the contract. This is often referred to as “contingent” VM.³ Such contingent VM is considered as Initial Margin (see below) and can be covered in cash or non-cash collateral.

2.1.2 Initial margin and additional margins

Initial margin (IM) represents margins collected by the CCP to cover potential future exposure to clearing members providing the margin and, where applicable, to interoperable CCPs. This margin is intended to cover the market risk resulting in a change in mark-to-market value of the cleared contracts held by the clearing member at the CCP during the period between the last margin collection and the liquidation of positions following a default of a clearing member or of an interoperable CCP.⁴

IM is posted by clearing members to the CCPs either by way of cash (which is usually transferred outright) or securities (by way of security or outright transfer). As reference above, IM primarily covers market risk, which is the risk of a change in the mark-to-market before additional VM is posted or the position is closed out. Essentially, this is a function of the time it takes to post VM, the volatility of the cleared derivative and the close out timeline (margin period of risk). Other types of risk, such as concentration or stress conditions, can be covered via additional margins.

The application of IM and additional margins is CCP-specific. For example, some CCPs may include risks other than price risks in their IM, while other CCPs may apply additional margins. CCPs also reserve the right in their rules to call for any extraordinary additional margins to their members. CCPs use margin models to compute IM and additional margins. IM is typically calculated by applying one of the following two model types: SPAN like model or portfolio VaR model⁵.

In the European Union (EU), CCPs are required to have anti-procyclical tools embedded in their margin models to mitigate risks associated with rapid margin changes. For IM, CCPs can use three different options: (a) applying a margin buffer at least equal to 25 % of the calculated margins, (b) assigning at least 25 % weight to stressed observations in the lookback period, or (c) ensuring that its margin requirements are not lower than those that would be calculated using volatility estimated over a 10-year historical lookback period.⁶

CCPs have a right to amend their margin methodologies and relevant parameters subject to applicable governance. Typically, CCPs review margin parameters on a periodic basis to ensure the level of margin coverage remains appropriate under any prevailing market conditions to cover market and counterparty

¹ Please note that margin terminology may differ from one EU CCP to the other, and clients are advised to refer to the rules of each CCP to familiarise themselves with the margin terminology that the specific CCP uses in its rules.

² See Article 1(6) of COMMISSION DELEGATED REGULATION (EU) No 153/2013 of 19 December 2012 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council with regard to regulatory technical standards on requirements for central counterparties ([EMIR CCP RTS](#)), as amended.

³ This is a prevalent VM method for listed equity options.

⁴ See Article 1(5) of the [EMIR CCP RTS](#).

⁵ Please refer to Section 2 of the [ECB Occasional Paper Series on CCP initial margin models in Europe](#) published by the ECB in April 2023 for further details of the main modelling frameworks used, including Standard Portfolio Analysis of Risk (SPAN) and Value at Risk (VaR) models.

⁶ See Article 28 of the [EMIR CCP RTS](#).

credit risk.

Key CCP margin model parameters include:

- Margin period of risk (MPOR) which is the period of time from the last transfer of collateral covering a set of transactions with a defaulting clearing member, until the transactions are closed out and the resulting market risk is re-hedged. The MPOR for specific product sets is prescribed in the EU by regulation and currently stands at a minimum of
 - o 2-days for exchange-traded derivatives (ETDs) or
 - o 1-day for ETDs on a gross basis for client accounts under specific conditions⁷ and
 - o 5-days for cleared OTC derivatives;
- The “confidence interval” for calculating IM, based on historical volatility and anticipated liquidation periods, which is set to 99.0% for ETDs and 99.5% for cleared OTC derivatives under EU regulations⁸;
- The anti-procyclical parameters: (a) the weight of stress periods, (b) the length of the lookback period, or (c) the buffer size.

CCPs typically compute margin for groups of positions in portfolios that are part of a specific clearing service or market, such as exchange-traded equity derivatives, exchange-traded interest rate derivatives or cleared OTC interest rates derivatives. However, some CCPs allow cross-product margining between correlated markets, such as, for example, exchange-traded and OTC cleared interest rate derivatives.

Appendix to this Disclosure Statement includes basic EU CCP-specific margin information for illustration purposes.

2.1.3 Collateral

IM can be met by market participants in the form of eligible collateral, typically cash in the main fiat currencies and high credit quality and liquid non-cash collateral in the form of US/EU and UK government bonds. CCPs establish a list of eligible collateral which may be subject to a ‘haircut’ that represents a discount to mitigate for the potential decrease in value of the collateral.

CCP haircut models, similar to CCP margin models, estimate the potential loss in value of eligible collateral. Considering the liquidity, credit risk, price volatility and other factors of the instrument, the CCP haircut model will dictate the discounted value of the instrument⁹.

CCPs also set concentration limits with respect to the amount of certain collateral types that can be posted as IM and set limit on the level of excess collateral that can be posted to cover future IM requirements.

2.1.4 CCP margin payment cycle

CCPs have specific daily payment schedules to receive and pay VM and IM (typically once a day) and may also require ad hoc payments of margin (intraday margin calls).

Intraday IM calls can often only be met with cash collateral, but some CCPs may have stricter collateral criteria in place and only accept specific cash currency (such as Euro). These ad hoc calls usually occur during business hours, but, depending on market conditions, they can also take place outside of business hours and can be met in a different currency (such as US Dollars, for example).

2.1.5 CCP Transparency

CCPs provide information to their clearing members in different formats and at different levels. Certain CCPs do not distinguish between the impact of house and client activity on additional margin applied to the clearing member’s business. For this reason, the information that clearing members make available to their clients is highly dependent on the level of transparency and disclosure that they receive from each individual CCP. The same applies with respect to the level of information available to clearing service providers further down the clearing chain.

⁷ See Article 26(1)(c) of the [EMIR CCP RTS](#), called “liquidation period” therein.

⁸ See Article 24(1) of the [EMIR CCP RTS](#).

⁹ For example, assuming a margin requirement of EUR95 for a counterparty. That counterparty decides to use 10Y Italian Government Bonds against which the CCP set a 5% haircut. The counterparty should post in excess of EUR100 notional value of the 10 Y Italian Government Bond to meet its margin requirement (collateral = margin requirement / (1 - haircut) = 95 / (1-0.05) = 100).

CCPs have margin simulation tools enabling computations of IM. Some CCPs make their margin simulation tools publicly available, whereas others make them available to their members and clients only. These tools may also include features to compute CCP additional margins. (See *Section 5 below for further details*.) It may be the case that new types of additional margin are not immediately reflected in CCP margin simulation tool, which limits the transparency that can be shared with clients.

3. Information on the situations and conditions that trigger margin calls

3.1 General information

CCPs typically collect IM and VM once a day based on the settlement price or mark-to-market value of cleared derivative positions at the end of the previous day (EoD margin), usually on a T+1 basis (i.e., at open of business the next morning). As mentioned above, CCPs can also call for margin outside the traditional EoD schedule. Intraday payments may be triggered if the cleared derivative positions have suffered unrealised or realised losses beyond a certain limit as defined by the CCP.

Several factors can result in changes to CCP IM. For example, trading activity that results in changes to the size of a position or composition of a portfolio can lead to higher CCP IM requirements. Larger or more concentrated positions generally require more IM to ensure adequate coverage.

Another key factor that can trigger a change in IM is increased market volatility. When markets become more volatile, the likelihood of large price movements increases, prompting CCPs to require higher margins to cover any such potential price movements.

CCPs also periodically review and update their risk models. Changes in these models can lead to adjustments in IM requirements to better reflect current market conditions and risks.

It is important to note that both VM and IM requirements can change daily even if cleared derivative positions remain unchanged.

In summary, CCP margin calls can be triggered by a number of different factors including (but not limited to) a change in trading activity, increased market volatility and CCP margin models reacting to market conditions. For more detailed information, please refer to relevant CCP margin documentation on the relevant CCP websites.

3.2 Margin calls by clearing service providers

Clearing members typically call clients for the CCP required VM and/or IM called by the CCP. A client of a clearing member providing clearing services to its clients would in turn call its clients for at least the same amount of margin following a call from the clearing member.

Clearing service providers may call clients for additional margin in line with the contractual framework that they have in place with them. This can be done either by applying a multiplier to the CCP margin requirement or via a fixed margin buffer. In some cases, clearing service providers may also apply their own in-house margin methodology.

To determine whether additional margin is required, clearing service providers perform daily monitoring of client portfolios, evaluating a wide array of quantitative and qualitative factors. These include (but are not limited to) counterparty risk, credit risk, portfolio risk, country risk, market price movements, potential future volatility, the capacity of clients to respond to intraday margin calls and other risks assessed against each individual client. It is important to note that these risks may not be assessed by CCPs, and CCPs may not be aware of the identity of end clients in certain segregation models.

Clearing service providers also evaluate the level of the CCP margin in relation to their assessment of anticipated market conditions, the specific client portfolios, or other client specificities, and may apply additional margin. They may also apply additional margin to facilitate clients' intraday trade registrations and to absorb potential negative intraday market movements, which clients might not be able to respond to promptly. Clients should contact their relationship managers at the clearing firm for further information around the terms of their contractual framework with the clearing service provider.

4. Information on the procedures used to establish the amount to be posted by the clients

For more details on the procedures used to determine the amount of margin required by each CCP, please refer to the CCP margin information in the Appendix below that is not exhaustive and has been produced for illustration purposes only.

Client clearing agreements typically govern the provision of margin by clients to clearing service providers. The agreement may also cover the provision of margin by clearing service providers to clients, where relevant and mutually agreed upon. Clients are typically required to transfer margin to the clearing service provider to meet the requirements set by the CCP, as well as any additional margin requirement set by the clearing service provider, as explained above.

Where a CCP provides different clearing services, CCP rules may require clearing members to make separate margin calls on clients in respect of transactions cleared through each CCP Service. Client clearing documentation may provide for the option that the clearing service provider may make separate, or aggregated, margin calls on a client in the clearing service provider's sole and absolute discretion.

The ability for the clearing service provider to apply additional margin is governed by the terms of the client clearing agreement. To determine whether additional margin is required, clearing service providers usually assess a wide range of client-specific and portfolio-specific factors among others. In the event additional margin is to be applied, the client is notified and informed in accordance with the terms that govern its relationship with the clearing service provider. Clients should contact their relationship managers at the clearing service provider for further information around the terms of their client clearing documentation.

5. Simulation of the margin requirements to which clients might be subject under different scenarios

CCPs provide margin simulation tools that help clearing service providers and clients estimate their margin requirements. In some instances, these tools also allow for scenario-based simulations. However, as mentioned above, certain margin components, such as additional margins, may not always be immediately included in those simulations.

You will find a link to CCP-specific margin tools for each of the CCPs listed in the Appendix. Some CCP tools allow simulation of the same portfolio at different historical dates, which can help clearing service providers and/or clients get a sense of the volatility of margin requirements during stressed periods.

When additional margins are required by a clearing service provider, a comprehensive assessment of various quantitative and qualitative factors is conducted. As these requirements are specific to each client, clearing service providers might not be in a position to simulate such information systematically across their client base. Clients should contact their relationship manager at their clearing service provider should they require further information on the margin requirements under different scenarios.

Appendix – CCP-specific margin information

CCPs typically publicly disclose information of their margin models on their websites.

Disclaimer: *CCP-specific margin information provided in this Appendix is accurate as of the date specified for each CCP separately below. CCP margin models can change from time to time and FIA has no obligation to dynamically review and update information set out in this Appendix. Clients should refer to the relevant CCP websites for the most up to date information.*

<p>EUREX (Date: 9 December 2024)</p> <p>CCP Name: Eurex Clearing AG</p> <p>Margin model documentation weblink: Eurex Clearing Prisma</p> <p>Margin simulation model weblink: https://cpme.eurex.com/</p> <p>Margin model Name: Prisma</p> <p>Margin model Type: Portfolio VaR</p> <p>Risks captured by margin model: Market risk, liquidity (or concentration) risk, option risk and time-to-expiry (settlement) risk</p> <p>Cross-product margining: Applicable between ETDs and Cleared OTC Interest Rates</p> <p>Margin Period of Risk (holding period): 2-days for ETDs / 5-days for OTC</p> <p>Anti-Procyclical component: Yes – 25% weighted stress period scenarios</p> <p>Lookback period: 3 years</p> <p>Confidence level: 99.0% for ETDs / 99.5% for OTC</p> <p>Metric: Value-at-Risk (VaR)</p>	<p>Nasdaq Equity (Date: 9 December 2024)</p> <p>CCP Name: Nasdaq OMX Clearing AB</p> <p>Margin model documentation weblink: Nasdaq Clearing Margin Methodology</p> <p>Margin simulation model weblink: Nasdaq Clearing Technology and Connectivity (only available upon contacting Nasdaq)</p> <p>Margin model Name: OMS II Model</p> <p>Margin model Type: Span-like</p> <p>Risks captured by margin model: Market risk, option risk and time-to-expiry (settlement) risk</p> <p>Cross-product margining: Only between equity products</p> <p>Margin Period of Risk (holding period): 2-days for ETDs</p> <p>Anti-Procyclical component: Undisclosed</p> <p>Lookback period: 1 year</p> <p>Confidence level: 99.2%</p> <p>Metric: Stress Value</p>
<p>Nasdaq Fixed Income (Date: 9 December 2024)</p>	<p>Nasdaq Commodities (Date: 9 December 2024)</p>

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<p>CCP Name: Nasdaq OMX Clearing AB</p> <p>Margin model documentation weblink: Nasdaq Clearing Margin Methodology</p> <p>Margin simulation model weblink: Nasdaq Clearing Technology and Connectivity (only available upon contacting Nasdaq)</p> <p>Margin model Name: CFM Model (Cash Flow Margin)</p> <p>Margin model Type: Principal Component Analysis</p> <p>Risks captured by margin model: Market risk (Curve Risk)</p> <p>Cross-product margining: Only between fixed income products</p> <p>Margin Period of Risk (holding period): 2-days for ETDs and 5-day for OTC</p> <p>Anti-Procyclical component: Undisclosed</p> <p>Lookback period: 10 years and 1 year</p> <p>Confidence level: 99.2% for ETDs and 95% for OTC</p> <p>Metric: Stress Value</p>	<p>CCP Name: Nasdaq OMX Clearing AB</p> <p>Margin model documentation weblink: Nasdaq Clearing Margin Methodology</p> <p>Margin simulation model weblink: Nasdaq Clearing Technology and Connectivity (only available upon contacting Nasdaq)</p> <p>Margin model Name: SPAN® Model</p> <p>Margin model Type: SPAN</p> <p>Risks captured by margin model: Market risk, option risk and time-to-expiry (settlement) risk</p> <p>Cross-product margining: Only between certain commodities product group</p> <p>Margin Period of Risk (holding period): 2-days to 5-days for ETD</p> <p>Anti-Procyclical component: Undisclosed</p> <p>Lookback period: 1 year</p> <p>Confidence level: 99.2% for ETDs</p> <p>Metric: Stress Value</p>
<p>Euronext Equity Derivatives (Date: 9 December 2024)</p> <p>CCP Name: Euronext Clearing</p> <p>Margin model documentation weblink:</p> <ul style="list-style-type: none">• Methodologies Euronext Clearing• Parameters Euronext Clearing	<p>Euronext Fixed Income Derivatives (Date: 9 December 2024)</p> <p>CCP Name: Euronext Clearing</p> <p>Margin model documentation weblink:</p> <ul style="list-style-type: none">• Methodologies Euronext Clearing• Parameters Euronext Clearing

<p>Margin simulation model weblink: The tool is not available publicly, for access please contact CCP-rm.group@euronext.com</p> <p>Margin model Name: EQDER Risk Engine</p> <p>Margin model Type: SPAN-like</p> <p>Risks captured by margin model: Market risk, option risk and time-to-expiry (settlement) risk</p> <p>Cross-product margining: Only between equity products</p> <p>Margin Period of Risk (holding period): 2-days for ETDs and 5-days for OTC</p> <p>Anti-Procyclical component: 25% Stressed weight</p> <p>Lookback period: 5 years</p> <p>Confidence level: 99.5%</p> <p>Metric: Stress Value</p>	<p>Margin simulation model weblink: The tool is not available publicly, for access please contact CCP-rm.group@euronext.com</p> <p>Margin model Name: Fixed Income Risk Engine</p> <p>Margin model Type: VaR</p> <p>Risks captured by margin model: Market risk</p> <p>Cross-product margining: Only for instruments from same issuer</p> <p>Margin Period of Risk (holding period): 5-days</p> <p>Anti-Procyclical component: 10 Year lookback period</p> <p>Lookback period: Anchored from 2004</p> <p>Confidence level: from 99.5% to 99.8%</p> <p>Metric: Expected Shortfall</p> <p>Note the following margin add-ons are applied separately: decorrelation, concentration/idiosyncratic and repo concentration</p>
<p>Euronext Commodity Derivatives (Date: 9 December 2024)</p> <p>CCP Name: Euronext Clearing</p> <p>Margin model documentation weblink:</p> <ul style="list-style-type: none"> • Methodologies Euronext Clearing • Parameters Euronext Clearing <p>Margin simulation model weblink: The tool is not available publicly, for access please contact CCP-rm.group@euronext.com</p> <p>Margin model Name: COMDER Risk Engine</p> <p>Margin model Type: VaR</p>	<p>LCH SA CDSClear (Date: 9 December 2024)</p> <p>CCP Name: LCH SA</p> <p>Margin model documentation weblink: LCH SA Risk Management</p> <p>Margin simulation model weblink: The tool is not available publicly, for access please contact CDSClear@lch.com</p> <p>Margin model Name: Undisclosed</p> <p>Margin model Type: VaR</p> <p>Risks captured by margin model: Market risk, wrong way risk and option risk</p> <p>Cross-product margining: Undisclosed</p>



<p>Risks captured by margin model: Market risk, option risk and time-to-expiry (settlement) risk</p> <p>Cross-product margining: Between commodity products excluding farmed salmon</p> <p>Margin Period of Risk (holding period): 2-days</p> <p>Anti-Procyclical component: 25% Stressed weight</p> <p>Lookback period: 5-year</p> <p>Confidence level: from 99.5%</p> <p>Metric: Expected Shortfall</p> <p>Note the following margin add-ons are applied separately: decorrelation</p>	<p>Margin Period of Risk (holding period): 5-days</p> <p>Anti-Procyclical component: Undisclosed</p> <p>Lookback period: From 2007</p> <p>Confidence level: from 99.7%</p> <p>Metric: VaR / Expected Shortfall</p> <p>Note the following margin add-ons are applied separately: Self referencing protection, liquidity and concentration, accrued fixed amount liquidation, credit event, stress, credit quality and capital related</p>
<p>ECC Derivatives Margining (Date: 9 December 2024)</p> <p>CCP Name: European Commodity Clearing AG</p> <p>Margin model documentation weblink:</p> <p>Margin simulation model weblink:(Please follow these steps to install and run ECC margin simulation tool)</p> <p>Margin model Name: SPAN® Model</p> <p>Margin model Type: SPAN</p> <p>Risks captured by margin model: Market risk, option risk and time-to-expiry (settlement) risk</p> <p>Cross-product margining: Only applicable between “cross margin group”</p> <p>Margin Period of Risk (holding period): 2-days</p> <p>Anti-Procyclical component: Undisclosed</p> <p>Lookback period: 1-year</p>	<p>BME Financial derivatives (Date: 9 December 2024)</p> <p>CCP Name: BME Clearing</p> <p>Margin model documentation weblink: MEFFCOM2 BMEClearing</p> <p>Margin simulation model weblink: Not available publicly</p> <p>Margin model Name: MEFFCOM2</p> <p>Margin model Type: SPAN-like</p> <p>Risks captured by margin model: Undisclosed</p> <p>Cross-product margining: Undisclosed</p> <p>Margin Period of Risk (holding period): Undisclosed</p> <p>Anti-Procyclical component: Undisclosed</p> <p>Lookback period: Undisclosed</p> <p>Confidence level: Undisclosed</p>



<p>Confidence level: from 99%</p> <p>Metric: stress value</p> <p>Note the following margin add-ons are applied separately: Concentration, power, gas, emission and short option delivery</p>	<p>Metric: Undisclosed</p> <p>Note the following margin add-ons are applied separately: Undisclosed</p>
<p>KDPW CCP Listed derivatives (Date: 9 December 2024)</p> <p>CCP Name: KDPW_CCP S.A.</p> <p>Margin model documentation weblink:</p> <p>Margin simulation model weblink: (please follow the steps in this page to install and run KDPW_CCP margin simulation tool)</p> <p>Margin model Name: SPAN®</p> <p>Margin model Type: SPAN</p> <p>Risks captured by margin model: Market risk, option risk and time-to-expiry (settlement) risk</p> <p>Cross-product margining: Yes</p> <p>Margin Period of Risk (holding period): 2-Days</p> <p>Anti-Procyclical component: 10-Years lookback</p> <p>Lookback period: 10-Year</p> <p>Confidence level: 99% (and 99.5% where history is shorter than the lookback period)</p>	<p>ATHEX Clear (Date: 9 December 2024)</p> <p>CCP Name: Athens Exchange Clearing House S.A.</p> <p>Margin model documentation weblink:</p> <p>Margin simulation model weblink: Not available publicly</p> <p>Margin model Name: Undisclosed</p> <p>Margin model Type: Undisclosed</p> <p>Risks captured by margin model: Market risk, option risk and time-to-expiry (settlement) risk</p> <p>Cross-product margining: Yes</p> <p>Margin Period of Risk (holding period): 2- to 4-Days</p> <p>Anti-Procyclical component: 25% Weight</p> <p>Lookback period: 1-Year</p> <p>Confidence level: 99% for derivatives on energy and 99.0% for all the other financial products</p> <p>Metric: Stress value</p> <p>Note the following margin add-ons are applied separately: Undisclosed</p>

<p>Metric: Stress value</p> <p>Note the following margin add-ons are applied separately: Undisclosed</p>	
<p>CCP Austria (Date: 9 December 2024)</p> <p>CCP Name: CCP Austria Abwicklungsstelle für Börsengeschäfte GmbH</p> <p>Margin model documentation weblink:</p> <p>Margin simulation model weblink:</p> <p>Margin model Name: Undisclosed</p> <p>Margin model Type: Undisclosed</p> <p>Risks captured by margin model: Market risk</p> <p>Cross-product margining: Yes</p> <p>Margin Period of Risk (holding period): 3-Days</p> <p>Anti-Procyclical component: 25% Buffer</p> <p>Lookback period: 365-days</p> <p>Confidence level: 99%</p> <p>Metric: Stress value</p> <p>Note the following margin add-ons are applied separately: Undisclosed</p>	