GOLDMAN SACHS ENHANCED MULTI-ASSET INDEX METHODOLOGY

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Goldman Sachs Enhanced Multi-Asset Index

The following section "Summary and Overview" is only a summary of the Goldman Sachs Enhanced Multi-Asset Index and, as such, is necessarily incomplete. The Summary and Overview should be read in conjunction with, and is qualified in its entirety by, the "Methodology of Goldman Sachs Enhanced Multi-Asset Index" section, which is a more detailed description of the Goldman Sachs Enhanced Multi-Asset Index and its operation.

The "Certain Risk Factors and Additional Information about the Index" section that follows the Methodology of the Index is intended to summarize certain risks associated with the Goldman Sachs Enhanced Multi-Asset Index, but does not purport to be exhaustive, nor should it be regarded as offering advice on the advisability of investing in products that may be linked to the Goldman Sachs Enhanced Multi-Asset Index or its underlying strategies. You should also read any relevant documentation, such as any prospectuses, term sheets or offering memoranda, which may highlight further risks particular to such products, or arising from the relationship between the terms of such products and the features of the Goldman Sachs Enhanced Multi-Asset Index. Neither Goldman Sachs International nor any of its affiliates guarantees the quality, accuracy and/or the completeness of the Goldman Sachs Enhanced Multi-Asset Index or any data included therein or on which the Goldman Sachs Enhanced Multi-Asset Index or any Index Components (as defined below) is based, and neither Goldman Sachs International nor any of its affiliates shall be liable to any third party for any loss or damage, direct, indirect or consequential, arising from (i) any inaccuracy or incompleteness in, or delays, interruptions, errors or omissions in the Goldman Sachs Enhanced Multi-Asset Index or any data included therein or on which the Goldman Sachs Enhanced Multi-Asset Index is based or (ii) any decision made or action taken by any third party in reliance upon the Goldman Sachs Enhanced Multi-Asset Index or any data included therein or on which the Goldman Sachs Enhanced Multi-Asset Index is based.

SUMMARY AND OVERVIEW

The Goldman Sachs Enhanced Multi-Asset Index (the "**Index**") is designed to provide a notional (i.e., reflecting a synthetic position rather than an actual investment) exposure to five underlying components, offering exposures to U.S. large-cap equities futures, dollar-hedged gold, 2-year U.S. Treasury futures (both long and short exposure), 10-year U.S. Treasury futures (both long and short exposure), and an "alternatives" components (with strategies composed of long-short exposures to global equities, rates, and commodities) (each, an "**Index Component**", and collectively the "**Index Components**"). Other than the 2-year U.S. Treasuries (which initially assume a relative weight equal to that of 10-year U.S. Treasuries), the Index applies a "Risk Budget" methodology to allocate weight to the assets. The Index first dynamically adjusts the relative weights of the Index Components based on their respective realized volatilities and a fixed "Risk Budget" allocation (40% for the Equity Component and 20% for the other three Index Components, excluding 2-year U.S. Treasuries). Then, the Index compares those values relative to the "Risk Budget" usage of all the Index Components, with the goal of achieving a relative risk contribution from each Index Component roughly aligned with its "Risk Budget" (i.e., with higher volatilities resulting in a lower weighting for a given "Risk Budget", and higher "Risk Budgets" resulting in a higher allocation assuming the same volatility). The Treasury Components (as defined below) are then multiplied by a weight intended to reflect their recent momentum with the ability to go long, short, or neutral. The resulting weights for each Index Component are then ratably increased or decreased to achieve an interim volatility target of 8% for the resulting "base" index before ratably reducing the Index Component weights as needed to ensure the total of long or short weights of the Index Components (i.e., using the sum of absolute values) does not exceed 350% and separately (and subsequently) applying a 100% weight cap to the Alternatives Component (as defined below).

The level of the Index will be reduced by certain fees and deductions discussed further under "Fees and Deductions" below; this will be in addition to any fees, charges, costs and deductions of any product linked to the Index.

1. The Index Components

The Index Components provide long exposure to five different asset classes: U.S. large-cap equities, dollar-hedged gold, 10-year U.S. Treasury securities, 2-year U.S. Treasury securities and an "alternatives" component (the "**Equity Component**", "**Gold Component**", "**Long-Term Treasury Component**", "**Short-Term Treasury Component**", and "**Alternatives Component**", respectively). The Alternatives Component is further comprised of two strategies, as described more fully below (each, an "**Alternatives Subcomponent**"). The Index will have more or less exposure to each Index Component depending on the "Risk Budget" allocation and realized volatility of such Index Component and—with respect to the Treasury Components —the impact of the Treasury Momentum Weights, each as described below:

- The Equity Component is an index that provides exposure to futures contracts on U.S. large-cap equities;
- The Gold Component is an index that provides long exposure to the Bloomberg Gold Subindex, which is a subindex of the Bloomberg Commodity Index and is comprised of futures contracts on gold and short exposure to indices with exposure to foreign exchange single currency against the United States Dollar (-57.6% to Euro, -13.6% to Japanese Yen, -11.9% to Pound Sterling, -3.6% to Swiss Franc, -9.1% to Canadian Dollar, and -4.2% to the Swedish Krona);
- The Long-Term U.S. Treasury Component is an index that provides exposure to futures contracts on 10-year U.S. Treasuries;
- The Short-Term U.S. Treasury Component is an index that provides exposure to futures contracts on 2-year U.S. Treasuries; and
- The Alternatives Component is an index that provides exposure to two Alternatives Subcomponents described in more detail below.

The Alternatives Component combines two underlying strategies, each allocating long and/or short weights across

asset classes to global equities, rates and commodities. The Alternative Component consists of two Alternative Subcomponents that each employs a signal intended to produce positive returns in certain market conditions – one that seeks to benefit from a tendency of assets under certain market conditions to continue to exhibit a historical "trend" of positive or negative risk-adjusted returns, while the other seeks to benefit from a tendency of assets under certain market conditions to exhibit a tendency to "revert" to historical average returns following unusual historical positive or negative risk-adjusted returns. Each Alternative Subcomponent is assigned a fixed weight when calculating the returns; when calculating the underlying transaction costs, the two strategies are "netted" to avoid transaction costs where one strategy reduces exposure to the same underlying asset to which the other strategy increases exposure. The two Alternatives Subcomponents are described in more detail below:

- "**Cross Asset Trend Strategy**" (as further described in Annex B) is a synthetic, rule-based strategy administered and calculated by Goldman Sachs International that is intended to notionally replicate an investment strategy that attempts to benefit from a tendency of (i) asset values with higher (increasing) trending returns to exhibit higher risk-adjusted returns in the future and (ii) asset values with lower (decreasing) trending returns to exhibit lower (or negative) risk-adjusted returns in the future. The strategy allocates weights to a variety of underlying constituents across asset classes based on (i) the applicable trend signal and (ii) an optimization formula that (a) selects the weights of such constituent assets in proportion to the strength of the applicable trend signal and (b) limits the realized volatility of any resulting basket of constituent assets over a defined lookback period to less than or equal to 5%, with certain limitations on rebalancing. Please see Annex B for a high-level summary regarding the Cross Asset Trend Strategy methodology.

- "**Cross Asset Tail Reversion Strategy**" (as further described in Annex C) is a synthetic, rule-based strategy administered and calculated by Goldman Sachs International that is intended to notionally replicate an investment strategy that establishes, within a variety of asset classes, (i) a short position in assets with the most positive (or least negative) "reversion signal" and (ii) a long position in assets with the most negative (or least positive) "reversion signal". A "reversion signal" for the Cross Asset Tail Reversion Strategy is indicated when the return of a particular asset has significantly increased (spiked up) or decreased (spiked down), in each case, relative to such asset's historical averages. Please see Annex C for a high-level summary regarding the Cross Asset Tail Reversion Strategy methodology.

Refer to the "Overview of the Index Components" and "Fees and Deductions" below for more information regarding the Index Components, including rebalancing and servicing cost rates. Fees and deductions embedded inside the Gold Component and Alternatives Component are not described in the "Overview of the Index Components" and are only described in the documents specific to those Index Components.

2. The Weights of the Index Components

The weights of the individual Index Components are based on their respective fixed "risk budgets" and realized volatilities, seeking a weight that, on a risk-adjusted basis, is consistent with the risk budget for each. For the Treasury Components, the weights are also affected by the application of a momentum signal, where they may be assigned long or short weight based on the performance of their underlying futures over three defined lookback periods. The weights are adjusted in order to apply a volatility control, intended to achieve a target level of volatility for the "base" index. Finally, the Index Components' weights may be reduced in order to apply a 350% cap on the aggregate absolute weight of all of the Index Components as well as a separate 100% cap on the Alternative Component.

Base Index Weights – The weights of the individual Index Components (except the Short-Term Treasury Component) are determined daily by first adjusting the relative weights of the Index Components based on each Index Component's usage of its fixed "**Risk Budget**" allocation (40% for the Equity Component and 20% for the other three Index Components, excluding the Short-Term Treasury Component) relative to the Risk Budget usage of all the Index Components in order to determine the "**Starting Base Index Asset Weights**" for each Index Component. Each Index Component's usage of its Risk Budget is dictated by its "**Asset Realized Long-Term Volatility**", which is calculated as the two-year realized volatility of each Index Component. For each Index Component (other than the Treasury Components), the Starting Base Index Asset Weight becomes its Base Index Asset Weight.

Treasury Component Momentum Weights - For the Long-Term Treasury Component and the Short-Term Treasury Component only, on each Index Trading Day, their Starting Base Index Asset Weights are multiplied by a momentum weight, calculated as the average of each of three lookback windows (6 months, 9 months, or 12 months) to produce a "**Raw Treasury Momentum Weight**". For the Long-Term Treasury Component, its momentum weight before averaging is:

- 50% if the Long-Term Treasury Component has had positive performance over the relevant lookback period; or
- -25% if it has had negative performance (or no change in performance) over the relevant lookback period.

For the Short-Term Treasury Component, its momentum weight before averaging is:

- 200% if the Short-Term Treasury Component has had positive performance over the relevant lookback period; or
- -100% if it has had negative performance (or no change in performance) over the relevant lookback period.

The Raw Treasury Momentum Weights for the Treasury Components are then separately averaged over the past 10 Index Trading Days to produce "**Treasury Momentum Weights**". For example, if the Long-Term Treasury Component for a given Index Trading Day had Raw Treasury Momentum Weights of 50%, 50% and -25% for its respective lookback windows of 6 months, 9 months and 12 months, the Long-Term Treasury Component's Raw Treasury Momentum Weight for that Index Business Day would be 25% (the average of 50%, 50%, -25%). Such Index Trading Day-specific Raw Treasury Momentum Weights would then be averaged over the past 10 Index Trading Days to calculate the Treasury Momentum Weight.

For the Long-Term Treasury Component, its Starting Base Index Asset Weight is adjusted by multiplying it with its Treasury Momentum Weight, resulting in the Long-Term Treasury Component's Base Index Asset Weight.

For the Short-Term Treasury Component, it begins with the Long-Term Treasury Component's Starting Base Index Asset Weight and further adjusts it by multiplying it with the Short-Term Treasury Component's Treasury Momentum Weight, resulting in the Short-Term Treasury Component's Base Index Asset Weight.

Because this step is only used to determine relative weights of Index Components to one another based on Risk Budget usage, no volatility controls are applied at this stage (but are applied later).

Volatility Target and Weight Control – A volatility target mechanism (the "**Volatility Target"**) is applied to ratably adjust each Base Index Asset Weight (up or down) to produce a "**Lookthrough Target Weight**" for each Index Component. Finally, a weight scalar is applied to ratably reduce the weights of each Index Component in order to ensure that the combined absolute values of the weights of the Index Components do not exceed 350%, and separately (and subsequently) a 100% weight cap is applied to the Alternatives Component, in order to arrive at the "**Final Lookthrough Weight**" of each Index Component. This Final Lookthrough Weight for each Index Component is the weight that is applied to calculate the quantities of each Index Component to determine the level of the Index.

The volatility target mechanism uses realized (i.e., backward-looking) volatility of a hypothetical portfolio of Index Components based on the Base Index Asset Weights (i.e., the index before application of the Volatility Target and weight caps) to attempt to achieve a volatility target of 8%. The realized volatility of the portfolio is calculated based on the higher of two volatility measures, one that gives relatively greater weight to more recent volatilities and the other that gives relatively greater weight to older volatilities, and takes into account the realized volatility of the Index Components, their covariances, and their weights.

3. Fees and Deductions

The Index is calculated on an excess return basis. Each of the Index Components (other than the Equity Component) are already excess return. The Index will convert the total returns of the Equity Component to excess return by subtracting the U.S. Federal Funds Rate.

The Index is subject to servicing, rebalancing, and deduction costs that are applied at fixed rates. The Servicing Cost Rate and Rebalancing Cost Rate that apply to each Index Component are included in the "Overview of the Index Components" in Annex A below. These Servicing Cost Rates and Rebalancing Cost Rates are in addition to the separate costs embedded at the Index Component- and constituent-level. A Deduction Rate of 0.50% per annum (accruing daily) is applied to the Index.

Based on hypothetical historical data from April 14, 2000 to the Launch Date, the rolling 1-year aggregate of Rebalancing Cost Rates and Servicing Cost Rates (but excluding the Deduction Rate) of the Index as a whole (including the costs within Index Components and their constituents, where applicable) has been approximately 1.27% per annum on average and has been as high as approximately 1.83% per annum at times. For more up-to-date information about historical and hypothetical historical fees, costs and deductions, including the average and high per annum rates on a rolling 1-year aggregate basis, see the Fact Sheet available at https://GoldmanSachsIndices.com/products/GSEMA8, which is updated periodically.

4. Additional Information regarding the Index

Hypothetical and Historical Performance

The Index's hypothetical and historical performance information is available at https://GoldmanSachsIndices.com/products/GSEMA8.

The Index has a very limited performance history. The Index will only be calculated live from the Launch Date (as further defined below) and, as such, there will be no historical live performance data available in respect of it prior to that time. The hypothetical index data prior to the Launch Date was calculated using historical and hypothetical data. You should not take any historical or hypothetical index performance information as an indication of the future performance of the Index. Please see more information in "Certain Risk Factors and Additional Information about the Index" below.

Where You Can Find More Information

The methodology for the Index is included under "The Methodology of the Index" below.

5. Selected Key Risks

*The "Selected Key Risks" is intended to summarize certain risks associated with the Index, but is not exhaustive, and should be read in conjunction with the "Certain Risk Factors and Additional Information about the Index" section at the end of this Methodology. The "Selected Key Risks" should not be regarded as offering advice on the advisability of investing in products that may be linked to the Index ("**Linked Products**") or the investment strategy underlying the Index. You should also read any relevant documentation which may highlight further risks particular to any product linked to the Index or arising from the relationship between the terms of such product and the features of the Index.*

- The value of the Index depends on the value of the Index Components, which may increase or decrease over time. Neither the Index nor any Index Component includes any element of downside protection or guaranteed return. The value of any Index Component, or the Index itself, may fall substantially below its value as of the Launch Date or any other particular day.

- The Index has a very limited performance history. The Index will only be calculated live from the Launch Date and as such, there will be no historical live performance data available in respect of it prior to that time. **You should not take any historical or hypothetical index performance information as an indication of the future performance of the Index.**

- Past performance or hypothetical past performance of the Index is no guide to future performance. The actual performance of the Index in the future may bear little relation to the historical performance or hypothetical historical past performance of the Index. The hypothetical past performance of the Index prior to the Launch Date has been derived from back-testing by applying the Index methodology to historical levels of the Index

Components, on the basis of certain assumptions and subject to certain limitations. In addition, certain data used by the Index was back-filled by the Index Sponsor for back-testing purposes based on certain assumption or internal models due to the absence of historical data. Applications of the Index methodology to such historical levels with different assumptions and limitations may produce materially different results. Hypothetical past performance is back-tested using criteria applied retroactively. It could therefore benefit from hindsight and from the use of procedures to develop the Methodology that may have favored certain criteria that performed well in the past but may not continue to perform well in the future. You should carefully consider the assumptions, limitations and potential biases of the back-testing process when evaluating any hypothetical past performance data.

- The Index deductions, including the Servicing Cost Rate and Rebalancing Cost Rate, as well as the Deduction Rate, will have a negative impact on the Index performance. Additionally, deductions embedded inside Index Components or within their components will have a negative impact on the Index performance. Such deductions may offset, in whole or in part, any increases in the return of the Index.

- The Alternatives Component may not be as uncorrelated to the other Index Components as it has been historically, which may have a material adverse impact on Index performance.

- Depending on the application of the factors that impact the weight of the Index Component, the Index may have an absolute leverage of the Index Components as high as 350%. Leverage means that the Index will have increased exposure to changes, which may be positive or negative, in the level of the Index Component, magnifying the volatility and risk that the performance of the Index will be adversely affected should the value of the Index Component decrease. In other conditions the Index may have limited exposure to an Index Component, and the level of the Index will benefit less from any positive performance of the Index Component.

- The cap of 100% exposure to the Alternatives Component may inhibit the Index's performance during periods of market stress. During periods of market stress, when the Alternatives Component might otherwise provide strong returns or valuable diversification, the 100% cap of exposure could prevent the index from fully benefiting from its performance. As a result, the Index may underperform compared to similar indices that do not impose such a limit on their allocation to alternatives.

- No assurance can be given that the Index's risk decomposition will actually be what their listed Risk Budget will be.

- No assurance can be given that the Index will achieve its volatility target of 8%, as the Index's volatility target mechanism relies on backward-looking historical volatility (which may not be replicated).

- The Index's volatility-driven allocation methodology and volatility control mechanism may cause the Index to have low exposure to one or more Index Components for a prolonged period of time, which may cause the Index to underperform and may frustrate its investment rationale. The Index includes a volatility targeting mechanism that can reduce an Index Component's target weight – and therefore the impact of such Index Component on the Index's performance – in order to maintain the historical realized volatility of the Base Index below a stated volatility target. This can cause the level of the Index to underperform a strategy similar to the Index without such a volatility targeting or control mechanism, potentially materially so.

- The Index's volatility-driven allocation methodology and volatility control mechanism may each generate significant rebalancings within the Index which will impact performance due to the resulting embedded rebalancing costs and therefore negatively impact Index performance.

- Many of the Index Components track the value of futures. Futures markets are vulnerable to disruption, and the performance of futures may not correspond to the performance of their underlying assets.

- The Cross Asset Tail Reversion Strategy does not capture every type of reversion behavior and may underperform in certain market conditions, such as when the level of an underlying asset constituent keeps on relatively increasing (decreasing) despite exhibiting a higher (lower) relative skewness with respect to other underlying asset constituents of the same asset class.

- The Cross Asset Trend Strategy may not be able to rebalance the full amount in accordance with the relevant signal on a particular day as a result of the maximum rebalance move constraint. As such, the Cross Asset Trend Strategy may take longer to fully reflect the direction of the trend signal (for example changing from synthetically long exposure to synthetically short exposure), in particular with respect to those less liquid underlying constituents. Having the underlying constituents remain in the opposite direction of the signal could have a negative impact on the Cross Asset Trend Strategy's performance compared to a strategy without such rebalance move constraints, potentially materially so.

- The allocations between the Cross-Asset Trend Strategy, Cross-Asset Tail Reversion Strategy, and the Goldman Sachs Enhanced Multi-Asset Index may not be consistent with one another. For example, Cross-Asset Trend Strategy is a trend-following strategy that assumes that some variation of relative past performance, out-performance or under-performance results will persist in the future, while the Cross Asset Tail Reversion Strategy assumes that relative past performance, out-performance or under-performance will revert to a mean. As a result, the Index may achieve mixed results as compared to the investments underlying the Alternatives Subcomponents.

- While the Gold Component seeks to establish a synthetic alternative to direct physical ownership of the commodity, the Gold Component is still subject to idiosyncratic risks associated with gold, generally, that may materially and adversely affect its performance and, consequentially, the Index.

- Because the Index's volatility-driven allocation methodology and volatility control mechanism look at historical volatility, they may not decrease exposure to the relevant measure right before a significant and quick downturn in the market, and they may not increase exposure to other measures quickly enough during a market recovery, both of which could have a material adverse impact on the performance of the Index.

- The Index's momentum signals may not perform as expected should market environments change, and such signals' effectiveness may wane or disappear over time. If the effectiveness of the momentum signals wanes or disappears, the changes to the Index Component weights as a result of the momentum signals will no longer reflect the underlying assumptions of such signals and the performance of the Index may suffer.

- The Index relies on data provided by a third-party data provider, as well as methodologies licensed from third parties. The Index Sponsor is under no obligation to confirm third-party data that may be relied on by the Methodology. The Methodology relies on information from third-party sponsors of the Index Component or their calculation agents and other public sources. The Index Sponsor makes no warranty as to the correctness of that information and takes no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the Index. The Index also uses methodologies related to exposure to and weight allocation of Underlying Assets that are based on research and analysis provided by a third-party licensee. The Index Sponsor makes no warranty as to the appropriateness of the methodologies and that they will function as expected over time.

- Suspension or disruptions of market trading in the commodity and related options futures markets may adversely affect the value of the Gold Component and therefore the Index. The commodity markets are subject to temporary distortions or other market disruptions due to various factors, including the lack of liquidity in the markets, the participation of speculators and government regulation and intervention. In addition, U.S. futures exchanges and some foreign exchanges have regulations that limit the amount of fluctuation in futures contract prices that may occur during a single business day.

- Commodities are subject to legal and regulatory regimes that may change in ways that could affect the level of the Index to enter into or maintain hedging transactions. Commodities are subject to legal and regulatory regimes in the United States and, in some cases, in other countries that may change in ways that could negatively affect the value of the Index and are expected to increase the cost of transacting derivatives. This could have an adverse impact on the level of the Index.

- The performance of futures contracts may not correspond to the performance of their underlying assets, and are subject to certain risks that are not associated with their underlying assets. Futures contracts normally specify a certain date for settlement of a financial future (such as a futures contract on a securities index) or delivery of the underlying physical commodity. Because of the potential effects of negative roll yields, it is possible for the value futures contracts to decrease significantly over time even when the relevant securities indices or near-term or spot prices of underlying commodities are stable or increasing. It is also possible, when the relevant securities indices or the near-term or spot prices of the underlying assets are decreasing, for the value of any futures held by the Index to decrease significantly over time.

- The Index Components are referenced in other investment products, and trading in and related to such products may negatively impact the performance of the Index. Trading relating to such products, by parties hedging exposure to such products or by parties anticipating any adjustments, increases, or decreases to such hedging, may affect the performance of the Index Components, which may reduce the level of the Index, potentially materially so.

- The "Cross Asset Tail Reversion Strategy" Alternatives Subcomponent employs a long/short strategy that aims to hold a similar amount of risk on both long and short positions, and therefore does not intend to be notional neutral at each point in time, as the volatilities of underlying assets are heterogenous and fluctuate over time. Investors should note that targeting such a similar amount of risk on each leg could generate additional turnover and costs compared to a strategy that would not have such an objective.

PUBLICATION OF THE INDEX

Goldman Sachs International (the "**Calculation Agent**") calculates and publishes the value of the Index on each Index Business Day (as defined in the "Defined Terms Used in the Methodology of the Index") and publishes it on Bloomberg. The Index's Bloomberg ticker is "GSEMA8". Goldman Sachs International also acts as the index sponsor (the "**Index Sponsor**"). The Index Sponsor may discontinue publication of the value of the Index at any time at the sole discretion of the Index Committee (as defined below). The Index Sponsor may at any time appoint one or more replacement Calculation Agents, including itself or an affiliate. In the event that Goldman Sachs International has been replaced as Calculation Agent, Goldman Sachs International does not have any obligation to ensure that the relevant Calculation Agent continues to publish the Index.

The level of the index (the "**Index Level**") will be published to 2 decimal places with 0.005 rounded upwards.

Subject to certain limitations, a committee (the "**Index Committee**") is responsible for overseeing the administration of the Index and its methodology, while the Calculation Agent is responsible for the day-to-day implementation of the methodology of the Index. The Index Committee is comprised (as of the date hereof) of employees of The Goldman Sachs Group, Inc. or one or more of its consolidated subsidiaries or affiliates (collectively, "**Goldman Sachs**"). The Index Committee may exercise limited discretion in respect of the Index, as contemplated by the section "Methodology of Goldman Sachs Enhanced Multi-Asset Index" (the "**Methodology**"). In addition, the Index Committee may make changes to the Methodology from time to time if it determines, in its sole discretion, that such changes are necessary or desirable in light of the goals of the Index. For more information regarding the composition of the Index Committee and its roles and responsibilities related to the Index, please see https://www.goldmansachs.com/what-we-do/global-markets/systematic-trading-strategies/copy-of-summary-of-index-control-framework.pdf.

Subject to the exceptions described in the Methodology below, any such changes or actions will be publicly announced as promptly as is reasonably practicable and normally at least 60 days prior to their effective date. The Calculation Agent may from time to time consult the Index Committee or the Index Sponsor on matters of interpretation with respect to the Methodology.

Because the Index Committee considers information about changes to the Index and related matters that may be potentially market moving and material, all Index Committee discussions, including those with the Calculation Agent or the Index Sponsor, are confidential. The Index Committee will determine the successor of any of its members.

1. Changes to the Index Constituents

The designated Index Components and the Notional Interest Rate (or a stock, government bond instrument, or other market measure and financial instrument underlying such Index Component, or option, futures contract, forward, or swap related thereto, which the Index Committee determines is necessary to effectively replicate its performance) (collectively, the "**Index Constituents**" and each an "**Index Constituent**") are not expected to be changed or replaced. However, if the Index Committee determines that any of the following events has occurred:

- the Index Component Sponsor (as described in Annex A) of an Index Component announces that it will make a material change in the formula for or the method of calculating such Index Component or an index included in such Index Component (or the selection of the constituents thereof) or otherwise materially modifies such Index Component or an index included in such Index Component in the case of an Underlying Alternative Asset (or the selection of the constituents thereof) for the purpose of maintaining such Index Component;

- an Index Component or an index included in an Index Component is no longer published by its Index Component Sponsor;

- an Index Component or an index included in an Index Component, its constituents or derivative instruments linked thereto, are no longer tradable on commercially reasonable terms (as determined by the Calculation Agent in consultation with the Index Committee) in light of changes to financial market conditions (including, but not limited to, (i) market liquidity or (ii) the hedging activity of Goldman Sachs International and its affiliates relating to the Index or an Index Constituent causes their hedge positions to exceed thresholds determined at the sole discretion of the Index Committee), regulatory or similar factors;

- any third-party Index Component Sponsor of an Index Component or an index included in an Index Component terminates its license with the Index Sponsor and its affiliates such that the Index Sponsor may not use the Index Component or any related index in connection with any financial product or index;

- the Index Sponsor and its affiliates cease to have the relevant data license in respect of an Index Component or an index included in an Index Component;

- the Notional Interest Rate ceases to exist; or

- it is not practicable or commercially reasonable for an Index Constituent to continue to be included in the Index for reasons including, but not limited to, requirements, guidance or recommendations by the relevant regulators, relevant industry associations or the relevant sponsor of the Index Constituent, changes in industry practice or a change in law,

then the affected Index Constituent will be replaced by a successor constituent that, in the determination of the Index Committee in its sole discretion, most closely replicates, in the case of an index, the constituents and method of calculation of the Index Component, or, with respect to a successor interest, exchange rate, yield, rate, spread, most closely captures the relevant market measure and satisfies any other criteria of an effective benchmark identified by the Index Committee, and the Index Sponsor may use such constituent as a successor Index Constituent. If the Index Committee determines in its sole discretion that no successor constituent exists, such Index Constituent will be removed from the Index.

2. Publication of Changes to the Index and to the Methodology

Changes to the Index Components (and their constituents) made by the Calculation Agent or, in certain cases, the Index Committee, will be publicly announced as promptly as is reasonably practicable and normally at least five Index

Business Days prior to the effective date of the changes. Except as otherwise provided, changes to the Methodology made by the Index Committee and consented to by the Index Sponsor will be publicly announced at least 60 days prior to their effective date. Adjustments made by the Calculation Agent in response to adjustment events described herein will be publicly announced as promptly as is reasonably practicable. Notwithstanding the foregoing, the Index Committee may modify the Index (including its composition), the Methodology or any data obtained from a third party, in its sole discretion and without notice to correct any manifest error, or to cure or correct any ambiguity, contradiction or defect, in the description or operation of the Index.

3. Index Restatement

In the event of an error or anomaly in the published Index Level arising from certain circumstances described herein or in the document linked below, the Index Sponsor, under the oversight of the Index Committee, may restate the Index Level. If the Index Sponsor determines that the Index Level will be restated, the Index Level will only be restated from the date falling three weekdays (Monday to Friday of each calendar week) prior to the date on which the Index Sponsor becomes aware of or identifies such error or anomaly to and including the date the restated levels are effected and published. For the restatement policy applicable to the Index as of the date of the Methodology, including the circumstances that may give rise to an error or anomaly that may result in a restatement (defined as an "Incident" in the following linked document), see https://www.goldmansachs.com/disclosures/euro-benchmark-reg-iosco-principles-for-financial-benchmarks-f/summary-of-gs-policy-on-global-benchmark-incidents.pdf. For the avoidance of doubt, the Index is not an "Intraday Benchmark" for purposes of such restatement policy. The restatement policy applicable to the Index may be revised or updated from time to time in the sole discretion of the Index Sponsor.

METHODOLOGY OF GOLDMAN SACHS ENHANCED MULTI-ASSET INDEX

This section sets forth the methodology (the "**Methodology**") for calculating the Index Level.

1. Defined Terms Used in the Methodology of the Index

A_{ABD}	means the Index Component Value of the relevant Index Component on Asset Business Day$_{(ABD)}$, as determined under section 10
ARC_i	means, in respect of an Index Component *i*, the Rebalancing Cost Rate, as set out in Annex A for such Index Component
$AssetCov^{\lambda}_{i,j,ITD}$	means the Index Component Covariance for Index Trading Day$_{(ITD)}$, as determined under Section 7.4
$AssetVol^{\lambda}_{i,ITD}$	means the Asset Realized Volatility for Index Trading Day$_{(ITD)}$, as determined under Section 7.5
ASC_i	means, in respect of an Index Component *i*, the Servicing Cost Rate, as set out in Annex A for such Index Component
Assets	when used in a formula element, "Assets" means each of the Index Components
Asset Base Date	is November 1, 2022
Asset Business Day	means each day which is a business day for the associated Index Component according to the holiday calendar of such associated Index Component (see "Additional Information" as specified in Annex A).
$AssetLongTermVol_{i,ITD}$	means the Asset Realized Long-Term Volatility of Index Component$_{(i)}$ on Index Trading Day$_{(ITD)}$
$BaseIndexPrelimVol^{\lambda}_{ITD}$	means the Base Index Preliminary Realized Volatility for Index Trading Day$_{(ITD)}$, for a decay factor λ, as determined under Section 7.3
Base Index Base Date	is January 6, 2025
$BaseIndexVol_{ITD}$	means the Base Index Realized Volatility for Index Trading Day$_{(ITD)}$, as determined under Section 7.2
$BaseIndexWt_{i,ITD}$	means, in respect of an Index Component$_{(i)}$, the Base Index Asset Weight for Index Trading Day$_{(ITD)}$ as defined in section 8.1 and 8.2
$Covariance^{\lambda}_{i,j,ITD}$	means, in respect of two Index Components for Index Trading Day$_{(ITD)}$, with a given decay factor λ, the Covariance, as determined under Section 7.3
DC_t	means the Deduction Cost on Index Business Day$_{(t)}$, as determined under Section 3.3
$DCF_{date\_1,date\_2}$	means day count fraction for the period from (but excluding) date_1 to (and including) date_2, determined by using the day count convention Actual/360

$Deduction\ Rate$ or Deduction Rate	is 0.50%
$Gross\ Level_t$	means, for any Index Business Day$_{(t)}$, the Gross Index Level as determined under Section 4
Index Base Date	is April 8, 2025
Index Business Day	Any day on which the New York Stock Exchange is open for trading
Index Initialization Date	is April 4, 2025
Index Trading Day	Any day on which all the Index Components' relevant Exchanges (as set forth in Annex A) is open and a Reference Level is published for all Index Components.
$Index\ Level_t$	means, for any Index Business Day, the Index Level for Index Business Day$_{(t)}$
$Ind^{LB}_{TsryMtumWt,Treasuries,ITD}$	means, in respect of an Index Trading Day$_{(ITD)}$ and a defined lookback period $_{(LB)}$, the Individual Treasury Momentum Signal for a given Treasury Component $_{(Treasuries)}$, as determined under Section 9.2
Launch Date	is September 29, 2025
$MaxAbsWeight$	is 350%
$N_{InitAssetVolLB}$	means the preceding 432 Index Trading Days
NIR_{NRt}	means, for a Notional Interest Rate Reset Day$_{(NRt)}$, the Notional Interest Rate
Notional Interest Rate (NIR)	means the rate referenced under USD-FEDERAL-FUNDS-H15 (as provided by Reuters on page FEDFUNDS1 or by another recognized source used for the purpose of displaying such rate) For any given calendar day which is not a scheduled publication day for the Notional Interest Rate, the Calculation Agent will use for such calendar day the Notional Interest Rate for the scheduled publication day immediately preceding such calendar day.
Notional Interest Rate Reset Date	means each day which is a New York business day
$Q_{i,ITD}$	means the Quantity for Index Component $_{(i)}$ for Index Trading Day as determined in section 5
RC_t	means the Rebalancing Cost on Index Business Day$_{(t)}$, as determined under Section 3.1
$RiskBudget_i$	means, in respect of an Index Component$_{(i)}$, the Risk Budget, as set out in Annex A for such Index Component
$RL_{i,date}$	means the Reference Level for Index Component$_{(i)}$ for Asset Business Day$_{(date)}$ as further described in the Annex A
SC_t	means the Servicing Cost on Index Business Day$_{(t)}$, as determined under Section 3.2

$StartingBaseIndexWt_{i,ITD}$	means Starting Base Index Asset Weight for each Index Component$_{(i)}$ on Index Trading Day $_{(ITD)}$ as determined under section 8.3 and 8.4
Subscript (ABD)	means the Asset Business Day
Subscript (Alternatives)	means the Alternatives Component
Subscript (i)	means Index Component$_{(i)}$
Subscript (ITD)	means Index Trading Day
Subscript (ITD-n)	means nth Index Trading Day immediately preceding but excluding an Index Business Day$_{(t)}$
Subscript (j)	means Index Component$_{(j)}$
Subscript (l)	means to each Index Trading Day within $N_{InitAssetVolLB}$ as of Index Trading Day$_{(ITD)}$
Subscript (LB_win)	means a Lookback Window for a given Lookback$_{(LB)}$
$Subscript\ (NRt)$	means the Notional Interest Rate Reset Date immediately preceding day$_{(t)}$
Subscript (Short-Term Treasury)	means the Short-Term Treasury Component
Subscript (t)	means the relevant Index Business Day
Subscript (Treasuries)	means each of the Treasuries Components
$Subscript_{(WDay_t)}$	Weekday t; A Weekday is Monday to Friday of each calendar week
Subscript (t-x)	means the x-th Index Business Day immediately preceding (but excluding) Index Business Day$_{(t)}$
Subscript (z)	means Index Component$_{(z)}$
Superscript (LB)	means Lookback Window as defined in Table 1 in Section 9.2
VC_{ITD}	means, for a Index Trading Day$_{(ITD)}$, the Volatility Controlled Weight, as determined under Section 7
VolatilityTarget or Volatility Target	is 8.0%
$w_{i,ITD}^{Lookthrough}$	means, in respect of an Index Component$_{(i)}$ and any Index Trading Day$_{(ITD)}$, the Final Lookthrough Weight, as determined under Section 6.1
$w_{Treasuries,ITD}^{RawTsryMtum}$	means, in respect of the Treasury Component$_{(Treasuries)}$ on Index Trading Day$_{(ITD)}$, the Raw Treasury Momentum Weight, as determined under Section 9.2
$w_{ITD}^{TargetLookthrough}$	means, in respect of an Index Component$_{(i)}$ and any Index Trading Day$_{(ITD)}$, the Lookthrough Target Weight on Index Trading Day$_{(ITD)}$, as determined under Section 6.4

$w^{TsryMtum}_{Treasuries,ITD}$	means, in respect of the Treasury Component $_{(Treasuries)}$ on Index Trading Day$_{(ITD)}$, the Treasury Momentum Weight, as determined under Section 9.1
$WeightScalar_{ITD}$	means the weight scalar as of Index Trading Day$_{(ITD)}$, as determined under Section 6.3
λ	means the decay factor parameter, which will be assigned a value of either 0.94 (the "short-term" decay factor) or 0.97 (the "long-term" decay factor)

2. Calculation of the Index Level

The Index Level from the Index Initialization Date to the Index Base Date shall be 100.

On any Index Business Day following the Index Base Date, the Index Level is calculated according to the following formula:

$$Index\ Level_t = Gross\ Level_t - RC_t - SC_t - DC_t$$

If the Index Level should fall to or below zero in respect of an Index Business Day, then the Index Level in respect of such Index Business Day and all following Index Business Days shall be zero.

3. Calculation of Costs

3.1. Calculation of the Rebalancing Cost

The Rebalancing Cost on the Index Base Date or on any Index Business Day that is not an Index Trading Day is 0.

On any following Index Trading Day, the Rebalancing Cost is calculated as follows:

$$RC_{ITD} = \sum_{i=\,Assets} \left|Q_{i,ITD} - Q_{i,ITD-1}\right| \times A_{i,ITD} \times ARC_i$$

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3.2. Calculation of the Servicing Cost

The Servicing Cost on the Index Base Date is 0. On any following Index Business Day, the Servicing Cost is calculated as follows:

$$SC_t = \sum_{i=\,Assets} \left(\left|Q_{i,ITD-1}\right| \times \sum_{s=ITD-1}^{t-1} A_{i,s} \times DCF_{s,s+1} \times ASC_i \right)$$

Note: if such day is not an Asset Business Day for Index Component$_{(i)}$, $A_{i,t}$ shall be the Index Component Value$_{(i)}$ of Index Component$_{(i)}$ as of the immediately preceding Asset Business Day

3.3. Calculation of the Deduction Cost

The Deduction Cost on the Index Base Date is 0. On any following Index Business Day, the Deduction Cost is calculated as follows:

$$DC_t = Index\ Level_{ITD-1} \times \sum_{s=ITD-1}^{t-1} Deduction\ Rate \times DCF_{s,s+1}$$

4. Calculation of the Gross Index Level

The Gross Index Level on the Index Base Date is equal to 100. On any following Index Business Day, the Gross Index Level is calculated according to the following formula:

$$Gross\ Level_t = Index\ Level_{ITD-1} + \sum_{i=Assets} Q_{i,ITD-1} \times \left(A_{i,t} - A_{i,ITD-1}\right)$$

Note: if such day is not an Asset Business Day for Index Component$_{(i)}$, $A_{i,t}$ shall be the Index Component Value$_{(i)}$ of Index Component$_{(i)}$ as of the immediately preceding Asset Business Day.

5. Calculation of the Quantity

On each Index Trading Day from (and including) the Index Base Date, the Quantity in respect of each Index Component is calculated according to the following formula:

$$Q_{i,ITD} = \frac{Index\ Level_{ITD-2} \times w_{i,ITD-2}^{Lookthrough}}{A_{i,ITD-2}}$$

6. Calculation of the Lookthrough Weights

6.1. Calculation of the Final Lookthrough Weights for Every Index Component Except the Alternatives Component

On each Index Trading Day from (and including) the Index Initialization Date, the Final Lookthrough Weight for each Index Component except the Alternative Component$_{(i)}$ is calculated as follows:

$$w_{i,ITD}^{Lookthrough} = w_{i,ITD}^{TargetLookthrough} \times WeightScalar_{ITD}$$

6.2. Calculation of the Final Lookthrough Weights for the Alternatives Component

On each Index Trading Day from (and including) the Index Initialization Date, the Final Lookthrough Weight for the Alternatives Component is calculated as follows:

$$w_{Alternatives,ITD}^{Lookthrough} = \min\left(100\%, w_{Alternatives,ITD}^{TargetLookthrough} \times WeightScalar_{ITD}\right)$$

6.3. Calculation of the Weight Scalar

On each Index Trading Day from (and including) the Index Initialization Date, the Weight Scalar is calculated as follows:

$$WeightScalar_{ITD} = Min\left(100\%, \frac{MaxAbsWeight}{\sum_{(i=\ Assets)}\left|w_{i,ITD}^{TargetLookthrough}\right|}\right)$$

6.4. Calculation of the Lookthrough Target Weight

On each Index Trading Day from (and including) the Index Initialization Date, the Lookthrough Target Weight for each Index Component is calculated as follows:

$$w_{i,ITD}^{TargetLookthrough} = VC_{ITD} \times BaseIndexWt_{i,ITD}$$

7. Calculation of the Volatility Controlled Weight

7.1. Calculation of the Volatility Controlled Weight

On each Index Trading Day, the Volatility Controlled Weight is calculated as follows:

$$VC_{ITD} = \frac{VolatilityTarget}{BaseIndexVol_{ITD}}$$

7.2. Calculation of the Base Index Realized Volatility

On each Index Trading Day, the Base Index Realized Volatility is calculated based on the higher of two volatility measures (one giving relatively greater weight to more recent volatilities and one giving relatively greater weight to older volatilities) of the Base Index, as follows:

$$BaseIndexVol_{ITD} = \max(BaseIndexPrelimVol_{ITD}^{0.94}, BaseIndexPrelimVol\ _{ITD}^{0.97})$$

7.3. Calculation of the Base Index Preliminary Realized Volatilities

On each Index Trading Day, the Base Index Preliminary Realized Volatility for a decay factor parameter λ is calculated as follows:

$$BaseIndexPrelimVol_{ITD}^{\lambda} = \sqrt{\sum_{i,j=1}^{n} BaseIndexWt_{i,ITD} \times BaseIndexWt_{j,ITD} \times Covariance_{i,j,ITD}^{\lambda}}$$

Where:

$$Covariance_{i,j,ITD}^{\lambda} = \begin{cases} if\ i = j: \left(AssetVol_{i,ITD}^{\lambda}\right)^2 \\ if\ i \neq j: AssetCov_{i,j,ITD}^{\lambda} \end{cases}$$

7.4. Calculation of the Index Component Covariance

The Index Component Covariance for each pair of Index Components (i) and (j) for a decay factor λ on the Base Index Base Date is equal to zero (0).

On each following Index Trading Day, the Index Component Covariance for a decay factor λ is calculated as follows:

$$AssetCov_{i,j,ITD}^{\lambda} = \lambda \times AssetCov_{i,j,ITD-1}^{\lambda} + (1-\lambda) \times \frac{216}{3} \times \left[\ln\left(\frac{A_{i,ITD}}{A_{i,ITD-3}}\right) \times \ln\left(\frac{A_{j,ITD}}{A_{j,ITD-3}}\right)\right]$$

7.5. Calculation of the Asset Realized Volatilities

The Asset Realized Volatility of Index Component$_{(i)}$ for a decay factor λ on the Base Index Base Date is equal to the Volatility Target.

On each following Index Trading Day, the Asset Realized Volatility of Index Component$_{(i)}$ for a decay factor λ is calculated as follows using both a "short-term" decay factor (giving relatively greater weight to more recent volatility data) and a "long-term" decay factor (giving relatively greater weight to older volatility data):

$$AssetVol_{i,ITD}^{\lambda} = \sqrt{\lambda \times \left(AssetVol_{i,ITD-1}^{\lambda}\right)^2 + (1-\lambda) \times \frac{216}{3} \times \left[\ln\left(\frac{A_{i,ITD}}{A_{i,ITD-3}}\right)\right]^2}$$

8. Calculation of the Base Index Asset Weights

8.1. Calculation of the Base Index Asset Weights for Every Index Component Except Treasury Components

On each Index Trading Day, the Base Index Asset Weight for every Index Component$_{(i)}$ except the Treasury Components (as defined below) is calculated as follows:

$$BaseIndexWt_{i,ITD} = StartingBaseIndexWt_{i,ITD}$$

8.2. Calculation of the Base Index Asset Weights for the Treasury Components

On each Index Trading Day, the Base Index Asset Weights for the Short-Term Treasury Component and Long-Term Treasury Component (each a "**Treasury Component**", together, "**Treasury Components**") are calculated as follows:

$$BaseIndexWt_{Treasuries,ITD} = StartingBaseIndexWt_{Treasuries,ITD} \times w_{Treasuries,ITD}^{TsryMtum}$$

8.3. Calculation of the Starting Base Index Asset Weights for Every Index Component Except the Short-Term Treasury Components

On each Index Trading Day, the Starting Base Index Asset Weight for every Index Component except the Short-Term Treasury Component$_{(i \text{ and } z)}$ is calculated as follows:

$$StartingBaseIndexWt_{i,ITD} = \frac{RiskBudget_i \Big/ AssetLongTermVol_{i,ITD}}{\sum_z RiskBudget_z \Big/ AssetLongTermVol_{z,ITD}}$$

8.4. Calculation of the Starting Base Index Asset Weight for the Short-Term Treasury Component

On each Index Trading Day, the Starting Base Index Asset Weight of the Short-Term Treasury Component is calculated as follows:

$$StartingBaseIndexWt_{Short-Term\ Treasury,ITD} = StartingBaseIndexWt_{Long-Term\ Treasury,ITD}$$

8.5. Calculation of the Asset Realized Long-Term Volatility for Every Index Component Except Short-Term Treasury Component

The Asset Realized Long-Term Volatility of every Index Component$_{(i)}$ except the Short-Term Treasury Component on the Base Index Base Date is equal to the Volatility Target.

On each following Index Trading Day, the Asset Realized Long-Term Volatility of Index Component$_{(i)}$ except the Short-Term Treasury Component is calculated as follows:

$$AssetLongTermVol_{i,ITD} = \sqrt{\frac{216}{3 \times N_{InitAssetVolLB}} * \sum_l \left(\ln\left(\frac{A_{i,l}}{A_{i,l-3}}\right)\right)^2}$$

9. Calculation of the Treasury Momentum Weights

9.1. Calculation of the Treasury Momentum Weights

On each Index Trading Day from (and including) the Asset Base Date, each Treasury Component's Treasury Momentum Weight is determined based on the average of the Raw Treasury Momentum Weights over 10 Index Trading Days.

On each Index Trading Day from (and including) the Asset Base Date, the Treasury Momentum Weight is calculated according to the following formula:

$$w_{Treasuries,ITD}^{TsryMtum} = \frac{1}{10} \times \sum_{avg_t=0}^{9} w_{Treasuries,ITD-avg_t}^{RawTsryMtum}$$

9.2. Calculation of the Raw Treasury Momentum Weights

On each Index Trading Day, the Raw Treasury Momentum Weight for each Treasury Component is determined based on the average of the Individual Treasury Momentum Signals.

Table 1: Description of Individual Treasury Momentum Signals

LB	**Individual Treasury Momentum Signals** $(Ind_{TsryMtumWt,Treasuries,ITD}^{LB})$	**Lookback Window** ***(LB_win)***
6M	6M Treasury Momentum	6 months
9M	9M Treasury Momentum	9 months
12M	12M Treasury Momentum	12 months

Table 2: Description of Individual Treasury Momentum Long and Short Weights for each Treasury Component

Treasury Component	**Long Weight**	**Short Weight**
Short-Term Treasury Component	200%	-100%
Long-Term Treasury Component	50%	-25%

Each Individual Treasury Momentum Signal (which applies to each Treasury Component), as described in Table 1, is calculated by taking the percentage return of the respective Treasury Component over the corresponding Lookback Window, as specified in Table 1. The percentage return for any given Index Trading Day is calculated by dividing (i) the Index Component Value of the Treasury Component (as described in Annex A) as of such Index Trading Day by (ii) the Index Component Value of the Treasury Component as of the Index Trading Day falling in the respective Lookback Window immediately preceding (but not including) that Index Trading Day, minus one.

Each Individual Treasury Momentum Signal will be assigned the value of (a) Long Weight for the relevant Treasury Component if the percentage return of the Treasury Component over the respective Lookback Window is strictly greater than 0; and (b) Short Weight for the relevant Treasury Component if the percentage return of the Treasury Component over the respective Lookback Window is less than or equal to 0.

The Raw Treasury Momentum Weight is then calculated by taking the average of each Individual Treasury Momentum Signals.

On each Index Trading Day from (and including) the Asset Base Date, the Raw Treasury Momentum Weight for each Treasury Component is calculated according to the following formula:

$$w_{Treasuries,ITD}^{RawTsryMtum} = \frac{1}{3} \times \sum_{LB=(6M,9M,12M)} Ind_{TsryMtumWt,Treasuries,ITD}^{LB}$$

$$Ind_{TsryMtumWt,Treasuries,ITD}^{LB} = LongWeight_{Treasuries}, if \ \frac{A_{Treasuries,ITD}}{A_{Treasuries,ITD-LB_{win}}} - 1 > 0$$

$$Ind_{TsryMtumWt,Treasuries,ITD}^{LB} = ShortWeight_{Treasuries}, if \ \frac{A_{Treasuries,ITD}}{A_{Treasuries,ITD-LB_{win}}} - 1 \leq 0$$

10. Calculation of Index Component Value

10.1. The Index Component Value of Excess Return Index Component

If the Return Type of an Index Component is "Excess Return" (as specified in Annex A), the Index Component shall be an Excess Return Index Component. The Index Component Value of an Excess Return Index Component on the Asset Base Date is equal to 100. On any Asset Business Day for an Index Component after (but excluding) the Asset Base Date, the Index Component Value of an Excess Return Index Component is calculated according to the following formula:

$$A_{i,ABD} = A_{i,ABD-1} \times \left(\frac{RL_{i,ABD}}{RL_{i,ABD-1}} \right)$$

10.2. The Index Component Value of Total Return Index Component

If the Return Type of an Index Component is "Total Return" (as specified in Annex A), the Index Component shall be a Total Return Index Component. The Index Component Value of a Total Return Index Component on the Asset Base Date is equal to 100. On any Asset Business Day for an Index Component after (but excluding) the Asset Base Date, the Index Component Value of a Total Return Index Component is calculated according to the following formula:

$$A_{i,ABD} = A_{i,ABD-1} \times \left(1 + \frac{RL_{i,ABD}}{RL_{i,ABD-1}} - \frac{DFA_{ABD}}{DFA_{ABD-1}} \right)$$

10.3. Calculation of the U.S. Dollar Financing Amount Level

The U.S. Dollar Financing Amount Level has an initial value of 100 as of the U.S. Dollar Financing Amount Base Date.

On any weekday following the U.S. Dollar Financing Amount Base Date, the "U.S. Dollar Financing Amount Level" will be calculated according to the following formula:

$$DFA_{WDay_t} = DFA_{NRt} \times \left(1 + NIR_{NRt} \times DCF_{NRt,WDay_t}\right)$$

Note: If on any day the U.S. Dollar Financing Amount Level is equal to or less than zero, the U.S. Dollar Financing Amount Level shall be deemed to be zero on such day and for all future days.

11. Market Disruption Events

A "**Market Disruption Event**" may be deemed by the Index Committee to have occurred in any of the following situations:

1. The official closing price or level of an Index Component is unavailable on any relevant day on which such measure is scheduled to be published;

2. the relevant Exchange is not open for trading during its regular trading session, or closes prior to its scheduled closing time, on any relevant day or there is a material Exchange Disruption (as determined by the Calculation Agent);

3. upon the occurrence or existence of a Trading Disruption, for more than two hours of trading, or at any time during the one-hour period that ends at the scheduled closing time of the relevant Exchange;

4. upon the occurrence or existence of an Index Dislocation; or

5. upon the occurrence or existence of a Force Majeure Event.

A "**Trading Disruption**" means any suspension of or limitation imposed on trading by the relevant Exchange, and whether by reason of movements in price exceeding limits permitted by the relevant reference exchange or otherwise, relating to an Index Component.

An "**Exchange Disruption**" means any event that disrupts or impairs (as determined by the Calculation Agent in consultation with the Index Committee) the ability of market participants in general to effect transactions in, materially increases the costs of transacting in, or obtain market values for, an Index Component or its underlying constituents on the relevant Exchange (if applicable).

"**Exchange**" means the relevant exchange on which an Index Component is traded, as set forth in Annex A.

"**Related Exchange**" means, in respect of an Index Component that is or tracks an index on which the level of listed futures or options contracts are based, the primary exchange or quotation system (or quotation systems) on which futures or options contracts relating to such index are traded, if any.

An "**Index Dislocation**" means the Calculation Agent (in consultation with the Index Committee) determines that a market participant, as a result of a market-wide condition relating to the Index or an Index Component would (i) be unable, after using commercially reasonable efforts, to acquire, establish, re-establish, substitute, maintain, unwind, or dispose of all or a material portion of any hedge position relating to the Index or an Index Component, or (ii) incur a materially increased cost in doing so, including due to any capital requirements or other law or regulation.

A "**Force Majeure Event**" means the Calculation Agent determines that there has been the occurrence of a systems failure, natural or man-made disaster, act of God, armed conflict, act of terrorism, riot or labor disruption or any similar intervening circumstance that is beyond the reasonable control of the Index Sponsor, Calculation Agent or any of their respective affiliates that the Calculation Agent determines is likely to have a material effect on an Index Component, or on its ability to perform its role in respect of the Index.

The value of the Index will not be published on any day on which a Market Disruption Event occurs.

CERTAIN RISK FACTORS AND ADDITIONAL INFORMATION ABOUT THE INDEX

Please note: This "Certain Risk Factors and Additional Information about the Index" section is intended to summarize certain risks associated with the Index, but does not purport to be exhaustive, nor should it be regarded as offering advice on the advisability of investing in products that may be linked to the Index or the investment strategy underlying the Index. You should also read any relevant documentation, such as any prospectuses, term sheets or offering memoranda, which may highlight further risks particular to such products, or arising from the relationship between the terms of such products and the features of the Index. Capitalized terms used but not defined in this "Certain Risk Factors and Additional Information about the Index" section have the meanings given to them in the methodology.

1. Historical Data

Historical information provided for the period from the Index Base Date until the Launch Date is hypothetical and is provided as an illustration of how the Index would have performed during the period had the Calculation Agent begun calculating the Index on the Index Base Date using the Methodology. This data does not reflect actual performance, nor was a contemporaneous investment model run of the Index. Historical information for the period from and after the Launch Date is based on the actual performance of the Index.

Historical levels of the Index are calculated with reference to the Reference Levels (as defined in Annex A) of the Index Component determined based on the latest available data published by the relevant Index Component Sponsor (as set out in Annex A). Certain presentations and historical analysis ("**back-testing**") or other statistical analysis materials in respect of the operation and/or potential returns of the Index Component, and its constituents, which may be provided or available to you are based on a number of assumptions, historical estimates, simulated analyses and hypothetical circumstances to estimate how the Index Component may have performed prior to the Index's actual existence. The relevant Index Component Sponsor may use historical data that is available to calculate the hypothetical level of the Index Component prior to its inception. If the Index Component Sponsor determines that such historical data is not available or is incomplete, the Index Component Sponsor may use alternate sources of data in place of such historical data as well as make certain modifications to the Index Component's methodology as it deems necessary to calculate the hypothetical level of the Index Component prior to its inception. Any such Index Component Sponsor provides no assurance or guarantee that its Index Component will operate or would have operated in the past in a manner consistent with those materials. As such, any historical returns projected in such materials or any hypothetical simulations based on these analyses, which may be provided or available to you in relation to the component may not reflect the performance of, and are no guarantee or assurance in respect of the performance or returns of, the component over any time period. Furthermore, any back-testing of the Index Component is based on information and data provided to the relevant Index Component Sponsor by third parties. An Index Component Sponsor will not have independently verified or guaranteed the accuracy and/or the completeness of such information or data provided and is not responsible for any inaccuracy, omission, mistake or error in such information, data and/or back-testing. Moreover, hypothetical past performance is back-tested using criteria applied retroactively. It could therefore benefit from hindsight and from the use of procedures to develop the Methodology that may have favored certain criteria that performed well in the past but may not continue to perform well in the future. You should carefully consider the assumptions, limitations and potential biases of the back-testing process when evaluating any hypothetical past performance data.

You should not take any historical or hypothetical index performance information as an indication of the future performance of the Index.

2. Conflicts of Interest

Potential conflicts of interest may arise in relation to the multiple roles of e Goldman Sachs in connection with the Index. Although Goldman Sachs will perform its obligations in a manner that it considers commercially reasonable, it may face conflicts between the roles it performs in respect of an Index and its own interests. In particular, Goldman Sachs may have, or enter into transactions to create, a physical, economic or other interest (including an adverse and/or short interest, as the case may be) in the Index, a product or transaction linked to the Index (each, a "**Linked Product**") and/or the Index Component, underlying assets of the Index Component, any input data (including but not limited to any price or level) which is used to determine, or which constitutes, any weight(s), signal(s) or other value(s) or

parameter(s) in relation to the Index Component, and any other input data or software package used in the calculation of the Index ("**Input Data**") and/or investments referenced by or linked to the Index Component or Input Data and may exercise remedies or take other action with respect to its interests as it deems appropriate. These actions could adversely affect the value of the Index and may include the following:

(i) Goldman Sachs actively trades Linked Products, the Index Component, Input Data, investments referenced by or linked to the Index Component or Input Data and numerous related investments. These activities could adversely affect the value of an Index, which could in turn affect the return on, and the value of, Linked Products.

(ii) Goldman Sachs may have access to information relating to the Index, Linked Products, the Index Component, Input Data or investments referenced by or linked to the Index Component or Input Data. Goldman Sachs is not obliged to use that information for the benefit of any person acquiring or entering into any Linked Products.

(iii) Certain activities conducted by Goldman Sachs may conflict with the interests of those acquiring any Linked Products. It is possible that Goldman Sachs could receive substantial returns in respect of these activities while the value of any investment referenced to such Index may decline. For example:

(a) Goldman Sachs and other parties may issue or underwrite additional securities or trade other financial or derivative instruments or investments referenced to the Index or other similar strategies or the Index Component. An increased level of investment and trading in these securities, instruments or investments may negatively affect the performance of the Index and could affect the value of such any strategy or index linked to the Index and, therefore, the amount payable at maturity (or on any other payment date) on any Linked Products and the value of such Linked Products before such date. Such securities, instruments or investments may also compete with any Linked Products. By introducing competing products into the marketplace in this manner, Goldman Sachs could adversely affect the market value of any Linked Products and the amount paid by it on such products at maturity (or on any other payment date). To the extent that Goldman Sachs serves as issuer, agent, underwriter or counterparty in respect of those securities or other similar instruments or investments, its interests in respect of those securities, instruments or investments may be adverse to the interests of a holder or counterparty in respect of any Linked Products.

(b) Although Goldman Sachs is not obliged to do so, it may elect to hedge its exposure to the Index, any Linked Products, the Index Component, Input Data or any investment referenced by or linked to a Component or Input Data with an affiliate or a third party. That affiliate or third party, in turn, is likely to directly or indirectly hedge some or all of its exposure, including through transactions taking place on the futures and options markets. Where Goldman Sachs chooses to hedge its exposure, it may adjust or unwind such hedges by purchasing or selling any Linked Products, the Index Component, Input Data, any investments referenced by or linked to the Index Component or Input Data or any other product on or before the date the Index is valued for purposes of any investments referenced to the Index. Goldman Sachs may also enter into, adjust or unwind hedging transactions relating to other instruments linked to the Index or the Index Component including at times and/or levels which are different from those used to determine the value of the Index. Any of this hedging activity may adversely affect the value of the Index and the value of any products linked to the Index. In addition, and without limitation:

(I) Goldman Sachs could receive substantial returns with respect to these hedging activities while the value of the Index and/or the value of any Linked Product may decline.

(II) If Goldman Sachs has hedged its exposure to the Index Component and/or Input Data and incurs an effective rate of withholding tax that is less than the synthetic tax withholding applied in respect of the Index, Goldman Sachs could receive substantial returns.

(III) Goldman Sachs could receive substantial returns if it trades in the Index Component on or before a rebalancing and/or at levels which are different from the levels specified in the methodology for determining the level of the Index Component. Such trading may have an adverse impact on the level at which a rebalancing occurs, which may result in an adverse impact on the performance of the Index. In addition, such trading could generate significant returns to Goldman Sachs that will not be passed on to the investors in any Linked Products.

(c) Certain activities conducted by Goldman Sachs may conflict with the interests of those acquiring any Linked Products. For example, as described above, Goldman Sachs may elect to hedge its obligations, if any, with an affiliate or a third party. It is possible that Goldman Sachs could receive substantial returns with respect to these activities irrespective of the performance of the Index and including while the value of any investment referenced to the Index may decline.

(d) Goldman Sachs may also engage in trading for its proprietary accounts, for other accounts under its management or to facilitate transactions, including block transactions, on behalf of customers relating to one or more Linked Products, the Index Component (or any constituent thereof), Input Data and/or any investment referenced by or linked to the Index Component (or any constituent thereof) or Input Data. In the course of these transactions, Goldman Sachs' customers may receive information about the Index before it is made available to other investors. Any of these activities could also adversely affect the value of the Index directly or indirectly by affecting the level of the Index Component (or any constituent thereof), Input Data or the investments referenced by or linked to the Index Component (or any constituent thereof) or Input Data and, therefore, the market value of any Linked Products and the amount paid on any such product at maturity.

(iv) As Index Sponsor, under certain circumstances Goldman Sachs International will have discretion in making various determinations that affect the Index and any Linked Products including, but not limited to, those situations described in the relevant Index descriptions. Goldman Sachs International may use these determinations to calculate how much cash it must pay at maturity, or, as the case may be, upon any early redemption or on any other payment date, of any Linked Product, including products issued by Goldman Sachs members. The exercise by Goldman Sachs International of this discretion could adversely affect the value of the Index and the value of any Linked Product. It is possible that the exercise by the Index Sponsor of its discretion to change the relevant Index methodology may result in substantial returns in respect of the Goldman Sachs' trading activities for its proprietary accounts, for other accounts under its management or to facilitate transactions on behalf of customers relating to one or more Linked Products, the Index Component and/or Input Data thereof or any investment referenced by or linked to the Index Component and/or Input Data.

(v) Goldman Sachs may in the future create and publish other indices or strategies, the concepts of which are similar, or identical, to that of the Index or the Index Component. The Index Component as specified in the Index description for the Index, however, is the only component that will be used for the calculation of the Index. Accordingly, no other published indices should be treated by any investor as the level of the Index Component (except as the Index Sponsor or the Calculation Agent may so determine, as described above).

(vi) Goldman Sachs may publish research, express opinions or provide recommendations (for example, with respect to the Index Component) that are inconsistent with investing in products linked to the Index, and which may be revised at any time. Any such research, opinions or recommendations may or may not recommend that investors buy or hold the Index Component and could affect the value and/or performance of the Index or of products linked to the Index.

(vii) Goldman Sachs may have ownership interests in sponsors of any index underlying the Index Component and as such may be able to influence the methodology and other features of the Index Component. In addition, members of Goldman Sachs may provide pricing or other data that is directly used in the calculation of the level or value and/or components of the Index Component (or the components thereof) or may be an Input Data provider. The activities of Goldman Sachs members as contributor to the Index Component or Input Data providers may be adverse to the interests of investors and/or counterparties to

products linked to any such Components or Input Data and may have an impact on the performance of the Index Component and/or Input Data.

(viii) Goldman Sachs has an ownership interests in the Calculation Agent (or any other calculation agent with respect to the Index or Index Component) and may have an ownership interest in any third-party data providers (including, without limitation, any Input Data provider) with respect to the Index or the Index Component or Input Data and as such may be able to influence the determinations of such Calculation Agent or other calculation agent. In addition, members of Goldman Sachs may provide pricing or other data that is directly used in the calculation of the level, coupon and/or components of the Index or may be Input Data providers. The activities of Goldman Sachs members as contributor to the Index may be adverse to the interests of investors and/or counterparties to products linked to the Index and may have an impact on the performance of the Index.

3. Risk Factors

The Index will be subject to market risks associated with the Index Components

Investors in products linked to the Index will be subject to the market risks associated with the Index Components. The value of the Index depends on the values of the Index Components, each of which may increase or decrease in value over time. Neither the Index nor the Index Components include any element of downside protection or guaranteed return. The value of any Index Component, or the Index itself, may fall substantially below its value at the Launch Date or on any particular day and may fall to or below zero. If the value of the Index should fall to or below zero in respect of an Index Business Day, then the Index Level in respect of such Index Business Day and all following Index Business Days shall be zero.

The Index has a very limited performance history and performance data is subject to limitations of back-testing and historical market environments

The Index has a very limited performance history. The Index will only be calculated live from the Launch Date and as such, there will be no historical live performance data available in respect of it prior to that time. There may be only limited historical performance data with respect to the Index Component. The past performance or hypothetical past performance of the Index may reflect the influence of market environments that may be significantly different from future market environments. As a result of these factors, any investment the return of which is linked to the Index or the Index Component may involve greater risk and uncertainty than an exposure linked to indices or strategies with a longer-term track record.

Furthermore, within the Alternatives Component, 13 of the 52 underlying components did not exist or lacked relevant data for at least some periods prior to July 2013, and the backtesting for periods prior to July 2013 was generated based on the assumption that assets historically non-existent or lacking relevant data were not part of the available asset universe for such strategy for such periods. Moreover, in historical backtest periods for certain underlying commodity assets, the identity of the "relevant futures" contracts of which the prices are used to determine the Absolute Weight Caps in the Intermediate Index and Weight Adjustment Factors in the one of the Alternatives Subcomponents are estimated based on the Index Administrator's understanding of the methodologies of relevant indices (which understanding may not be correct). In addition, certain relevant futures contracts prices that do not exist for use by the Index Administrator are approximated using what the Index Administrator believes to be the closest available market instruments.

Additionally, within the Gold Component, 1 of the 7 underlying components did not exist or lacked relevant data for at least some periods prior to July 2001, and the backtesting for periods prior to July 2001 was generated based on the assumption that assets historically non-existent or lacking relevant data were not part of the available asset universe for such strategy for such periods.

As a result of these factors, any investment the return of which is linked to the Index or such Index Components may involve greater risk and uncertainty than an exposure linked to indices or strategies with a longer-term track record.

You should not take any historical or hypothetical index performance information as an indication of the future performance of the Index.

Past performance or hypothetical past performance of the Index is not indicative of future performance

Past performance or hypothetical past performance of the Index is no guide to future performance. The actual performance of the Index in the future may bear little relation to the historical performance or hypothetical historical past performance of the Index. The Index may under- perform a static or managed allocation to the Index Components. Among other things, this is because the Index could be over-weighted in an Index Component while it suffers a significant decline in performance or be under-weighted in an Index Component while it experiences a major rise in performance. Any of these and other scenarios may have a material adverse effect on the performance of the Index. The hypothetical past performance of the Index prior to the Launch Date has been derived from back-testing by applying the Index methodology to historical levels of the Index Components, on the basis of certain assumptions and subject to certain limitations. Applications of the Index methodology to such historical levels with different assumptions and limitations may produce materially different results. Hypothetical past performance is back-tested using criteria applied retroactively. It could therefore benefit from hindsight and from the use of procedures to develop the Methodology that may have favored certain criteria that performed well in the past but may not continue to perform well in the future. You should carefully consider the assumptions, limitations and potential biases of the back-testing process when evaluating any hypothetical past performance data.

The Index deductions will have a negative impact on the Index performance

The Index deductions, including the Servicing Cost Rate and Rebalancing Cost Rate, as well as the Index deduction rate, will have a negative impact on the Index performance. Additionally, deductions embedded inside Index Components or within their components will have a negative impact on the Index performance. Such deductions may offset, in whole or in part, any increases in the return of the Index Components.

The Alternatives Component may be more correlated to other Index Components in the future

The strategies underlying the Alternatives Component may not be as uncorrelated to the other Index Components as it has been historically, which would reduce their attractiveness as components of the Index and potentially increase the risk of the Index for a given level of returns, or decrease the returns of the Index for a given level of risk.

The Index may be highly levered, magnifying volatility and risk that the performance of the Index will be adversely affected

Depending on the application of the factors that impact the weights of the Index Components, the Index may have a leverage as high as an absolute value of 350%. Leverage means that the Index will have increased exposure to changes, which may be positive or negative, in the level of an Index Component, magnifying the volatility and risk that the performance of the Index will be adversely affected should the value of an Index Component decrease (for a long position) or increase (for a short position). In other conditions it may have no exposure to one or more Index Components. In the event the Index has no exposure to the Index Component, and the Index Level will not benefit from any positive performance of the Index Component, which may have a material adverse effect on the performance of the Index. Increasing leverage will also increase servicing costs at the level of the Index, the Index Components and their components.

The Index's backward-looking historical volatility target mechanism may fail to limit the actual volatility of the Index

No assurance can be given that the Index will achieve its volatility target of 8%. The Index's backward-looking historical volatility target mechanism may fail to limit the actual volatility of the Index. Although the Index includes a volatility target mechanism, such controls rely on historical realized volatility, which may not reflect the current or future volatility of the Index Components. The volatility target mechanism measures the historical volatility over a period of time. As a result, the Index may be slow to rebalance allocations or reduce exposure to the Index Components following a sudden increase in volatility. Moreover, there is no assurance that the future realized volatility of the Index

Components will exhibit similar levels of volatility as it has historically, or that recent historical volatility levels are a better predictor of future volatility than would be the case using a longer lookback window. All of these factors may cause the performance of the Index to be adversely and disproportionately affected by the poor performance of the Index Components, particularly if such poor performance is associated with a sudden increase in volatility following a period of lower volatility (such as may be the case in a market crisis affecting one or more Index Components). Additionally, the actual realized volatility of the Index may be greater or less than 8%, which may negatively impact the Index's performance.

The Index's reliance on the "short-term" and "long-term" decay factors may have a material adverse effect on the performance of the Index

On each Index Business Day, the Volatility Target is compared to the greater of two measures of realized volatility based on historical data, one of which uses a "short-term" decay factor and another that uses a "long-term" decay factor. If the Index instead compared the Volatility Target to the lesser of those measures (or only one of the measures), it could increase the Index's exposure to the Index Components, thereby increasing the Index Level upon the positive performance of the Index Component, and therefore the Index's reliance on the maximum of those two measures may have a material adverse effect on the performance of the Index.

The Index's volatility-driven allocation methodology and volatility control mechanism may cause the Index to have low exposure to one or more Index Components for a prolonged period of time

The Index's volatility-driven allocation methodology and volatility control mechanism may cause the Index to have low exposure to one or more Index Components for a prolonged period of time, which may cause the Index to underperform and may frustrate its investment rationale. The Index includes a volatility control mechanism that can reduce an Index Component's target weight – and therefore the impact of such Index Components on the Index's performance – in order to maintain the historical realized volatility of the Base Index below a stated Volatility Target. This can cause the level of the Index to underperform a strategy similar to the Index without such a volatility control mechanism, potentially materially so.

The Index's volatility-driven allocation methodology and volatility control mechanism may each generate significant rebalancings

The Index's volatility-driven allocation methodology and volatility control mechanism may each generate significant rebalancings within the Index which will impact performance due to the resulting embedded rebalancing costs and therefore negatively impact Index performance.

Additional embedded rebalancing costs may impact performance at the level of the Index Components

Additional embedded rebalancing costs may impact performance at the level of the Index Components and for their components, as described in greater detail above.

There is no guarantee that the Gold Component may outperform traditional exposure to gold

The Gold Component provides long exposure to the Bloomberg Gold Subindex, which is a subindex of the BCOM that is comprised of futures contracts on gold and short exposure to indices with exposure to foreign exchange single currency against the United States Dollar (-57.6% to Euro, -13.6% to Japanese Yen, -11.9% to Pound Sterling, -3.6% to Swiss Franc, -9.1% to Canadian Dollar, and -4.2% to the Swedish Krona). This may lead to lower Index performance when such futures contracts on gold and foreign exchange single currency indices underperform. There can be no guarantee that Gold Component may outperform traditional exposure to gold or exposure to the above foreign exchange single currency indices.

The Treasury Components' reliance on the Individual Treasury Momentum Signals may not result in outperformance relative to traditional long-only treasury exposure

The Treasury Components provide exposure to U.S. Treasury Bonds, through an index referencing futures contracts on U.S. 10-year Treasuries and U.S. 2-year Treasuries. On each Index Trading Day, a weight is calculated for each of three lookback windows, each representing 6 months, 9 months, or 12 months (each an "**Individual Treasury Momentum Signal**"), equal to (i) 50% if the Long-Term Treasury Component has had positive performance over the relevant lookback period or equal to -25% if it has had negative performance (or no change in performance) over the relevant lookback period and (ii) equal to 200% if the Short-Term Treasury Component has had positive performance over the relevant lookback period or equal to -100% if it has had negative performance (or no change in performance) over the relevant lookback period. The Treasury Momentum Weight is then calculated by taking the average of each Individual Treasury Momentum Signals and then averaged over the past 10 Index Trading Days. There can be no assurance or guarantee that the Individual Treasury Momentum Signals methodology will result in outperformance relative to traditional long-only treasury exposure.

The Cross Asset Reversion Strategy forming part of the Alternatives Component is subject to certain limitations

The Cross Asset Reversion Strategy forming part of the Alternatives Component does not capture every type of reversion behavior and may underperform in certain market conditions, such as when the level of an underlying asset constituent keeps on relatively increasing (decreasing) despite exhibiting a higher (lower) relative skewness with respect to other underlying asset constituents of the same asset class.

The Cross Asset Trend Strategy forming part of the Alternatives Component is subject to certain limitations

The Cross Asset Trend Strategy forming part of the Alternatives Component may not be able to rebalance the full amount in accordance with the relevant signal on a particular day, as a result of the maximum rebalance move constraint. As such, the Cross Asset Trend Strategy may take longer to fully reflect the direction of the signal (for example changing from synthetically long exposure to synthetically short exposure) in particular with respect to those less liquid underlying constituents. Having the underlying constituents remain in the opposite direction of the signal could have a negative impact on the Cross Asset Trend Strategy's performance compared to a strategy without such rebalance move constraints, potentially materially so.

The Cross Asset Trend Constituent does not capture every type of trending behavior and may underperform in certain market conditions, such as when the level of an underlying asset over time fluctuates between an upper and lower limit.

The Index Components may not reflect actual performance data at the Launch Date

The Index was launched on the Launch Date and may reflect assumptions rather than actual performance data, which are not available in all cases. Performance indicated before the relevant inception date is hypothetical and has been calculated back to the relevant base date using the methodology and assumptions about certain of the components and decisions the Index Committee or Calculation Agent of the Index or the Index Component may have made. Index Levels calculated for periods in which the Index, an Index Component or an Index constituent did not yet exist may not reflect the actual levels that would have been calculated on that date if, in fact, such strategy or value had existed at that point in time or earlier.

Certain other market activities

Goldman Sachs is a full-service financial services firm engaged in a range of market activities. Goldman Sachs may issue, arrange for the issue of, or enter into financial instruments or derivatives linked to, the Index, other indices that are based on the Index Component, or the Index Component and arrange for the distribution of these financial instruments or derivatives, including the payment of distribution fees and commissions to any intermediaries. These activities could adversely affect the Index Level and the Index Component.

The Gold Component is subject to certain idiosyncratic risks

The Gold Component seeks to establish a synthetic alternative to direct physical ownership of bullion. The Gold Components is still subject to idiosyncratic risks associated with gold, including, among others, jurisdictional and legal risks, tariff risks, and custodial risks. Accordingly, the certain risks associated with owning gold may materially and adversely affect the Gold Components performance, and consequentially, the Index.

Allocation based on historical volatility may not change exposure ahead of significant market moves

The Index's volatility-driven allocation methodology and volatility control mechanism are determined by historical volatility, which may not increase or decrease exposure to the relevant measure before or during a significant and quick downturn in the market or market recovery. Accordingly, the Index may have material adverse impact on its performance.

Suspension or disruptions of market trading in the commodity and related options futures markets may adversely affect the value of the Index

The commodity markets are subject to temporary distortions or other market disruptions due to various factors, including the lack of liquidity in the markets, the participation of speculators and government regulation and intervention. In addition, U.S. futures exchanges and some foreign exchanges have regulations that limit the amount of fluctuation in futures contract prices that may occur during a single business day. These limits are generally referred to as "daily price fluctuation limits" and the maximum or minimum price of a contract on any given day as a result of these limits is referred to as a "limit price". Once the limit price has been reached in a particular contract, no trades may be made at a different price. Limit prices have the effect of precluding trading in a particular contract or forcing the liquidation of contracts at disadvantageous times or prices. These circumstances could adversely affect the level of the terminal components in the Index and, therefore, the value of the Index and the value of any financial instruments linked to the Index.

Suspension or disruptions of market trading in the commodity and related options futures markets may adversely affect the value of the Index

The commodity markets are subject to temporary distortions or other market disruptions due to various factors, including the lack of liquidity in the markets, the participation of speculators and government regulation and intervention. In addition, U.S. futures exchanges and some foreign exchanges have regulations that limit the amount of fluctuation in futures contract prices that may occur during a single business day. These limits are generally referred to as "daily price fluctuation limits" and the maximum or minimum price of a contract on any given day as a result of these limits is referred to as a "limit price". Once the limit price has been reached in a particular contract, no trades may be made at a different price. Limit prices have the effect of precluding trading in a particular contract or forcing the liquidation of contracts at disadvantageous times or prices. These circumstances could adversely affect the level of the terminal components in the Index and, therefore, the value of the Index and the value of any financial instruments linked to the Index.

Commodities are subject to legal and regulatory regimes that may change in ways that could affect the level of the Index to enter into or maintain hedging transactions

Commodities are subject to legal and regulatory regimes in the United States and, in some cases, in other countries that may change in ways that could negatively affect the value of the Index and are expected to increase the cost of transacting derivatives. This could have an adverse impact on the level of the Index.

The performance of futures contracts may not correspond to the performance of their underlying assets, and are subject to certain risks that are not associated with their underlying assets.

The Index holds, or may hold, futures contracts. Futures contracts normally specify a certain date for settlement of a financial future (such as a futures contract on a securities index) or delivery of the underlying physical commodity. Thus, for example, a futures contract purchased and held in August may specify a September expiration. As time passes, the contract expiring in September may be replaced by a contract for delivery in December. This process is referred to as "rolling." Because of the potential effects of negative roll yields, it is possible for the value futures

contracts to decrease significantly over time even when the relevant securities indices or near-term or spot prices of underlying commodities are stable or increasing. It is also possible, when the relevant securities indices or the near-term or spot prices of the underlying assets are decreasing, for the value of any futures held by the Index to decrease significantly over time.

The Index relies on data from third party data providers, as well as methodologies licensed from third parties

The Index relies on data provided by a third party data provider. The Index Sponsor is under no obligation to confirm third-party data that may be relied on by the Methodology. The Methodology relies on information from third-party sponsors of the Index Component or their calculation agents and other public sources. The Index Sponsor makes no warranty as to the correctness of that information and takes no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the Index.

The Index also uses methodologies related to exposure to and weight allocation of Index Components that are based on research and analysis provided by a third-party licensee. The Index Sponsor makes no warranty as to the appropriateness of the methodologies and that they will function as expected over time.

The Index Components are referenced in other investment products, and trading in and related to such products may negatively impact the performance of the Index

The Index Components (or similar assets) are referenced in or linked to other investment products that are not related to the Index. Trading relating to such products, by parties hedging exposure to such products or by parties anticipating any adjustments, increases, or decreases to such hedging, may affect the performance of the Portfolios and Index Components, which may reduce the level of the Index, potentially materially so.

The Cross Asset Tail Reversion Strategy is not notional neutral

The Cross Asset Tail Reversion Strategy employs a long/short strategy that aims to hold a similar amount of risk on both long and short positions, and therefore does not intend to be notional neutral at each point in time, as the volatilities of underlying assets are heterogenous and fluctuate over time. Investors should note that targeting such a similar amount of risk on each leg could generate additional turnover and costs compared to a strategy that would not have such an objective.

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ANNEX A: OVERVIEW OF THE INDEX COMPONENTS

Index Component	Bloomberg Ticker	Asset Name	Currency	Exchange(s)	Reference Level of the Index Component	Index Component Sponsor	Return Type	Asset Trading Days	Risk Budget	Rebalancing Cost Rate**	Servicing Cost Rate**	Additional Information
Equity Component	FRSIUSE Index	US Equity Futures Rolling Strategy Index	USD	Chicago Mercantile Exchange	The closing level as published by Goldman Sachs International, the index's calculation agent, or as reported by a third party vendor	Goldman Sachs International	Total Return	Each "Index Business Day" in respect of the Index Component (such "Index Trading Day" as defined in the strategy description applicable to the Index Component).	40%	0.02%	0.20%	https://www.goldmansachsindices.com
Short-Term Treasury Component	GSCCTU01 Index	The Goldman Sachs 2-year Treasury Future Exchange Close Index N1 Class C	USD	Chicago Mercantile Exchange Globex	The closing level as published by Goldman Sachs International, the index's calculation agent, or as reported by a third party vendor	Goldman Sachs International	Excess Return	Each "Index Business Day" in respect of the Index Component (such "Index Trading Day" as defined in the strategy description applicable to the Index Component).	N/A	0.01%	0.10%	https://www.goldmansachsindices.com
Long-Term Treasury Component	GSCCTY01 Index	The Goldman Sachs 10-year Treasury Future Exchange Close Index N1 Class C	USD	Chicago Mercantile Exchange Globex	The closing level as published by Goldman Sachs International, the index's calculation agent, or as reported by a third party vendor	Goldman Sachs International	Excess Return	Each "Index Business Day" in respect of the Index Component (such "Index Trading Day" as defined in the strategy description applicable to the Index Component).	20%	0.02%	0.15%	https://www.goldmansachsindices.com
Gold Component	GSGCDMFX Index	Goldman Sachs Gold vs DM FX USD ER Index	USD	Trading Facilities* of the Commodity Contracts included in the Bloomberg Gold Index	The closing level as published by Goldman Sachs International, the index's calculation agent, or as reported by a third party vendor	Goldman Sachs International	Excess Return	Each "Index Business Day" in respect of the Index Component (such "Index Trading Day" as defined in the strategy description applicable to the Index Component).	20%	0.03%	0.00%	https://www.goldmansachsindices.com
Alternatives Component	GSXABL1T Index	Goldman Sachs XA Linear Portfolio Strategy GSXABL1T	USD	Trading Facilities of the contracts included in the Goldman Sachs XA Linear Portfolio Strategy GSXABL1T except South African, Thailand, Korean and Swedish Exchange*	The closing level as published by Goldman Sachs International, the index's calculation agent, or as reported by a third party vendor	Goldman Sachs International	Excess Return	Each calendar day which satisfies each of the following criteria: (i) It is a Strategy Calculation Day for GSXABL1T Index; and (ii) It is a Component Trading Day in respect of each Terminal Component of GSXABL1T Index except South African, Thai, Korean and Swedish Equity Rolling Futures Strategy.	20%	0.12%	0.00%	https://www.goldmansachsindices.com

* **"Trading Facility"** means, in respect of a relevant contract, the exchange or trading facility or principal trading market on which such contract is traded, or any successor to such exchange or trading facility or principal trading market to which trading in such contract has temporarily relocated, as determined by the Calculation Agent.

** The Gold Component and Alternatives Component include embedded Rebalancing and Servicing Cost. Please see documentation specific to those Index Components for additional information.

"Commodity Contract" means, in respect of the Gold Component, each of the commodity contracts that is traded on a Trading Facility and that provides for future delivery of or provides for cash settlement based on the price of, a deliverable commodity included in the Gold Component.

ANNEX B: METHODOLOGY SUMMARY OF THE CROSS ASSET TREND STRATEGY

*The following methodology summary (the "**Methodology Summary**") of the Goldman Sachs Cross Asset Trend Strategy (the "**Cross Asset Trend Strategy**") is necessarily incomplete. This methodology summary should be read in conjunction with, and is qualified in its entirety by, the more detailed methodology documents associated with the Cross Asset Trend Strategy and its constituents, and their operations, that are available upon request from whom you purchase any products linked to the Goldman Sachs Enhanced Multi-Asset Index (the "**Cross Asset Trend Strategy Methodology**").*

For further information relating to selected risks associated with the Cross Asset Trend Strategy, see the "Certain Risk Factors and Additional Information about the Index" section at the end of the Methodology for the Index. The "Selected Key Risks" section is not complete, omits important risks associated with the Cross Asset Trend Strategy and should not be regarded as offering advice on the advisability of investing in products or other indices (including the Goldman Sachs Enhanced Multi-Asset Index) that may be linked to the Cross Asset Trend Strategy. You should also read any relevant materials which may describe additional risks associated with the Cross Asset Trend Strategy and its constituents, highlight further risks particular to products linked to the Goldman Sachs Enhanced Multi-Asset Index, or arising from the relationship between the terms of such products and the features of the Goldman Sachs Enhanced Multi-Asset Index and the Cross Asset Trend Strategy (see "Additional Information Regarding the Index— Where You Can Find More Information" in the Overview section of the Goldman Sachs Enhanced Multi-Asset Index for resources providing further information relating to the Cross Asset Trend Strategy and other Index Components). In particular, you should read the relevant materials relating to the constituents of the Cross Asset Trend Strategy described below and any discussions of risks contained therein. Neither Goldman Sachs International nor any of its affiliates guarantee the quality, accuracy and/or the completeness of the Cross Asset Trend Strategy or any data included therein or on which the Cross Asset Trend Strategy or any constituent thereof is based, and neither Goldman Sachs International nor any of its affiliates shall be liable to any third party for any loss or damage, direct, indirect or consequential, arising from (i) any inaccuracy or incompleteness in, or delays, interruptions, errors or omissions in the Cross Asset Trend Strategy or any data included therein or on which the Cross Asset Trend Strategy is based or (ii) any decision made or action taken by any third party in reliance upon the Cross Asset Trend Strategy or any data included therein or on which the Cross Asset Trend Strategy is based.

The Cross Asset Trend Strategy is Goldman Sachs Cross Asset Trend Strategy (GSXATL1T) and represents a notional (i.e., reflecting a synthetic position rather than an actual investment) exposure to an underlying investment strategy, which is comprised of several constituents across several asset classes, including global equities, rates, and commodities. The Cross Asset Trend Strategy aims to generate overall positive returns by using an optimization to allocate risk exposure to the constituent assets proportional to the components trend signal in respect of each constituent asset, subject to certain constraints. The rationale of the Cross Asset Trend Strategy is that constituent assets that have been "trending" either positively (which will have a larger trend metric) or negatively (which would have a smaller trend metric) are likely to continue to trend in the same

way, and the strategy assigns long or short positions on such constituent assets accordingly. However, past performance is no guide to, and may not be indicative of, future performance.

In assigning weights, the Cross Asset Trend Strategy seeks to limit the realized volatility of any resulting basket of such constituent assets over a defined lookback period to less than or equal to 5% and also subject to limitations on rebalancing. As a result, these realized volatility and rebalancing limits act as constraints on the optimization.

The trend signal used by the Cross Asset Trend Strategy provides an indication of whether the level of a constituent asset has been increasing or decreasing. The trend metric is calculated on a daily basis in respect of each constituent asset as the arithmetic average of each exponentially weighted average of daily returns over the previous two years (and then annualized), each with a different half-life (where "half-life" signifies the period taken for exponential weight attributed to the most recent daily returns to halve), divided by the volatility of the respective constituent asset. The final trend signal is then subject to tapering in order to treat extreme values and is further adjusted to account for variable number of assets in each asset class.

Costs and Deductions

The value of the Cross Asset Trend Strategy is reduced by certain transaction and servicing costs. The servicing costs and transaction costs (and, in respect of certain credit index constituents, certain credit costs) are specified in the rulebooks for the Cross Asset Trend Strategy. The transaction costs for each underlying asset constituent ranges from 0.0025% to 0.06%, and the servicing costs for each other underlying asset constituent ranges from 0.015% to 0.8% per annum.

Contact Information

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Cross Asset Trend Strategy Index Sponsor Website

https://www.goldmansachsindices.com (or any successor page).

ANNEX C: METHODOLOGY SUMMARY OF THE CROSS ASSET TAIL REVERSION STRATEGY

*The following methodology summary (the "**Methodology Summary**") of the Goldman Sachs Cross Asset Tail Reversion Strategy (the "**Cross Asset Tail Reversion Strategy**") is necessarily incomplete. This methodology summary should be read in conjunction with, and is qualified in its entirety by, the more detailed methodology documents associated with the Cross Asset Tail Reversion Strategy and its constituents, and their operations, that are available upon request from whom you purchase any products linked to the Goldman Sachs Enhanced Multi-Asset Index (the "**Cross Asset Tail Reversion Component Methodology**").*

For further information relating to selected risks associated with the Cross Asset Tail Reversion Strategy, see the "Certain Risk Factors and Additional Information about the Index" section at the end of the Methodology for the Index. The "Selected Key Risks" section is not complete, omits important risks associated with the Cross Asset Tail Reversion Strategy and should not be regarded as offering advice on the advisability of investing in products or other indices (including the Goldman Sachs Enhanced Multi-Asset Index) that may be linked to the Cross Asset Tail Reversion Strategy. You should also read any relevant materials which may describe additional risks associated with the Cross Asset Tail Reversion Strategy and its constituents, highlight further risks particular to products linked to the Goldman Sachs Enhanced Multi-Asset Index, or arising from the relationship between the terms of such products and the features of the Goldman Sachs Enhanced Multi-Asset Index and the Cross Asset Tail Reversion Strategy (see "Additional Information Regarding the Index— Where You Can Find More Information" in the Overview section of the Goldman Sachs Enhanced Multi-Asset Index for resources providing further information relating to the Cross Asset Tail Reversion Strategy and other Index Components). In particular, you should read the relevant materials relating to the constituents of the Cross Asset Tail Reversion Strategy described below and any discussions of risks contained therein. Neither Goldman Sachs International nor any of its affiliates guarantee the quality, accuracy and/or the completeness of the Cross Asset Tail Reversion Strategy or any data included therein or on which the Goldman Cross Asset Tail Reversion Strategy or any Cross Asset Constituent (as defined below) is based, and neither Goldman Sachs International nor any of its affiliates shall be liable to any third party for any loss or damage, direct, indirect or consequential, arising from (i) any inaccuracy or incompleteness in, or delays, interruptions, errors or omissions in the Cross Asset Tail Reversion Strategy or any data included therein or on which the Cross Asset Tail Reversion Strategy is based or (ii) any decision made or action taken by any third party in reliance upon the Cross Asset Tail Reversion Strategy or any data included therein or on which the Cross Asset Tail Reversion Strategy is based.

The Cross Asset Tail Reversion Strategy is Goldman Sachs Cross-Asset Tail Reversion Strategy (GSXASL1T) and represents a notional (i.e., reflecting a synthetic position rather than an actual investment) exposure to an underlying investment strategy, which is comprised of several constituents across several asset classes, including global equities, rates, and commodities. Goldman Sachs Cross-Asset Tail Reversion Strategy attempts to benefit from a tendency of asset returns to return to their mean by taking notional short positions in constituent assets that have exhibited higher performance relative to their historical averages and taking notional long positions in constituent assets that have exhibited lower performance relative to their historical

averages. Such historical averages are calculated based on various lookback periods and then averaged. The strategy ranks the constituent assets based on the strength of the signal and allocates greater exposure to those constituents with the highest relative strength. The strategy allocates about half of the exposures into short positions and half of the exposures in long positions. The strategy also measures the historical daily return of each constituent over a one-year lookback period and adjusts the weights of the constituents based on their relative volatilities to target a median volatility across constituents. There are also constraints on the maximum turnover of constituent assets that may limit the rebalancing that would have been otherwise effected pursuant to the strategy methodology.

Costs and Deductions

The value of the Cross Asset Tail Reversion Strategy is reduced by certain transaction and servicing costs. The servicing costs and transaction costs (and, in respect of certain credit index constituents, certain credit costs) are specified in the rulebooks for the Cross Asset Tail Reversion Strategy. The transaction costs for each underlying asset constituent ranges from 0.0025% to 0.06%, and the servicing costs for each other underlying asset constituent ranges from 0.015% to 0.8% per annum.

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Cross Asset Tail Reversion Strategy Index Sponsor Website

https://www.goldmansachsindices.com (or any successor page).

ANNEX D: DIAGRAM OF GOLDMAN SACHS ENHANCED MULTI-ASSET INDEX METHODOLOGY INDEX COMPONENTS AND SUBCOMPONENTS