Appendix 1
The US Equity Futures Rolling Strategy Index

A. Additional Risk Factors

The US Equity Futures Rolling Strategy Index Relies on the Use of Third Party Information

The US Equity Futures Rolling Strategy Index relies on information published by the reference exchange specified in the table under "Overview of the Underlying Assets" in the relevant Strategy Supplement. The respective index calculation agents and Goldman Sachs International as the sponsor of the US Equity Futures Rolling Strategy Index make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the US Equity Futures Rolling Strategy Index.

The US Equity Futures Rolling Strategy Index Is Not Actively Managed

The US Equity Futures Rolling Strategy Index operates in accordance with a set of pre-determined rolling methodology and formulae and its index calculation agent does not exercise any discretion with respect to the US Equity Futures Rolling Strategy Index. The US Equity Futures Rolling Strategy Index is, therefore, not managed. Goldman Sachs International as the sponsor of the US Equity Futures Rolling Strategy Index is not acting as an investment adviser or performing a discretionary management role with respect to the US Equity Futures Rolling Strategy Index and, as a result, has no fiduciary duty to any person in respect of the US Equity Futures Rolling Strategy Index.

The US Equity Futures Rolling Strategy Index Procures No Rights with Respect to the Underlying Futures Contracts

The investment exposure provided by the US Equity Futures Rolling Strategy Index is synthetic. An investment linked to the US Equity Futures Rolling Strategy Index will therefore not make an investor a holder of, or give an investor a direct investment position in, any futures contracts underlying the US Equity Futures Rolling Strategy Index.

The Index Calculation Agent Is Contractually Required to Publish a Level for the US Equity Futures Rolling Strategy Index Even if the Price of Underlying Futures Contracts Is Unavailable or Disrupted

If the price of an underlying futures contract is unavailable, or a market disruption event has occurred or is continuing on any given exchange business day, the index calculation agent is nonetheless contractually required to calculate and publish a value based on pre-determined valuation rules. As further described above in the Strategy Description, in those circumstances the Strategy Calculation Agent may, however, delay the volatility or basket rebalancing of the Strategy and use replacement values that may be different from, and higher or lower than, the level of the US Equity Futures Rolling Strategy Index as calculated by the index calculation agent.

The Goldman Sachs Group, Inc. May Create and Publish Indices Similar to the US Equity Futures Rolling Strategy Index

The Goldman Sachs Group, Inc. may in the future create and publish other indices, the concepts of which are similar, or identical, to those of the US Equity Futures Rolling Strategy Index.

The levels being published on the Bloomberg page of the US Equity Futures Rolling Strategy Index (or any successor pages), however, are the only levels that will be used for the calculation of the Strategy, subject to limited exceptions where the level is disrupted. Accordingly, no other published indices (if any) on the futures contracts underlying the US Equity Futures Rolling Strategy Index should be treated as the levels of the US Equity Futures Rolling Strategy Index, even where the concepts of such indices are similar, or identical, to those of the US Equity Futures Rolling Strategy Index.

B. Additional Market Disruption Events

N/A

C. Summary Description

The following overview of the US Equity Futures Rolling Strategy Index is a summary and, as such, is necessarily incomplete. This overview should be read in conjunction with, and is qualified in its entirety by, the more detailed description of the US Equity Futures Rolling Strategy Index and its operation that follows in this document.

The US Equity Futures Rolling Strategy Index (the "**US Equity Futures Strategy Index**" or the "**Index**") is a proprietary index designed to provide investors with exposure to the total return (including income from interest accruing at the relevant overnight interest rate (as described below)) of E-mini futures contracts on the S&P 500® Index currently listed for trading on the Chicago Mercantile Exchange (the "**CME**"). We refer to these E-mini futures contracts as the "**US Equity Futures Contracts**". For further information on the US Equity Futures Contracts and the S&P 500® Index, please see the sections below entitled "The E-mini S&P 500® Index Futures Contracts" and "The S&P 500® Index".

Each US Equity Futures Contract expires on a specific quarter end date (one of March, June, September or December). At any given time, there is more than one listed US Equity Futures Contract on the CME (for example, with expirations of September 2014, December 2014, March 2015, June 2015 and September 2015), and the Index will include the first nearby US Equity Futures Contract that has not reached expiration or a roll period (the September 2014 contract in the example). As the first nearby US Equity Futures Contract comes to its expiration on the third Friday of the relevant month (September), it will be replaced by the next US Equity Futures Contract (December 2014 in our example), which is known as the second nearby futures contract. This replacement process is referred to as "rolling". Rolling will be carried out during the three CME exchange business days starting from, and including, the third to last CME exchange business day prior to the last trade date of the expiring US Equity Futures Contract (*i.e.*, the third to last CME exchange business day prior to the third Friday of the expiration month) to, and including, the last CME exchange business day prior to the last trade date of such expiring US Equity Futures Contract. Such period is referred to as the "**roll period**". For further information on the roll methodology, please refer to the section entitled "Roll Methodology" below.

The Index is calculated in United States dollars on a total return basis and the value of the Index (the "**Index Value**") is calculated on each CME exchange business day (as defined in "Daily Strategy Value Calculation").

Goldman Sachs International (the "**Index Sponsor**") has retained S&P Opco, LLC (a subsidiary of S&P Dow Jones Indices LLC) to serve as calculation agent (the "**Calculation Agent**") for the Index. In the event the Index Committee (as described below) appoints a replacement Calculation Agent, a public announcement will be made via press release.

Unless otherwise indicated, any public announcement contemplated by this Methodology shall be posted at:

http://www.goldmansachsindices.com or any successor website

We are not incorporating by reference such website or any other website or any materials from any website into this index methodology.

US Equity Futures Strategy Index – Various Roles

The US Equity Futures Strategy Index is sponsored by Goldman Sachs International but is calculated by the Calculation Agent. The US Equity Futures Strategy Index operates in accordance with a set of pre-determined rolling methodologies and set of formulae, and the Calculation Agent does not exercise any discretion with respect thereto except in limited cases where a US Equity Futures Contract Valuation Price is not published or otherwise unavailable. The US Equity Futures Strategy Index is, therefore, not a managed index. As the Index Sponsor, Goldman Sachs International is not acting as an investment adviser or performing a discretionary management role with respect to the US Equity Futures Strategy Index and, as a result, has no fiduciary duty to any person in respect of the US Equity Futures Strategy Index. The Index Committee may exercise discretion, however, in a limited number of exceptional circumstances, including, without limitation, where the S&P 500® Index is rebased or otherwise adjusted or modified or where a US Equity Futures Contract Valuation Price is not published or otherwise unavailable.

US Equity Futures Strategy Index Starting Value

The US Equity Futures Strategy Index has been given a starting value of 100 as of December 31, 1991, which is the base date ("**Base Date**").

Daily Strategy Value Calculation

The US Equity Futures Strategy Index is a U.S. dollar denominated index and is calculated on each day on which the CME is open for trading (a "**CME exchange business day**"). The value of the US Equity Futures Strategy Index on each CME exchange business day will be calculated as the *product* of (i) the value of the US Equity Futures Strategy Index as of the immediately preceding CME exchange business day *multiplied* by (ii) the *sum* of (x) the daily return ratio of the value of the US Equity Futures Contracts (calculated as described below) on such CME exchange business day *plus* (y) the overnight interest rate for the immediately preceding CME exchange business day *multiplied* by the applicable day count fraction based on the number of calendar days in the calculation period.

Daily Return Ratio of the Value of the US Equity Futures Contracts: On each CME exchange business day (other than during the roll period as described below), the daily return ratio of the value of US Equity Futures Contracts is calculated as the *quotient* of (a) the US Equity Futures Contract Valuation Price on the relevant CME exchange business day *divided* by (b) the US Equity Futures Contract Valuation Price on the immediately preceding CME exchange business day. During each roll period, the daily return ratio of the values of the US Equity Futures Contracts is calculated as the *quotient* of (a) the US Equity Futures Contract Valuation Price of the second nearby US Equity Futures Contract on such CME exchange business day *divided* by (b) the US Equity Futures Contract Valuation Price of the second nearby US Equity Futures Contract on the immediately preceding CME exchange business day, rather than the first nearby US Equity Futures Contract to the extent the Index's investment has been rolled over.

US Equity Futures Contract Valuation Price: The US Equity Futures Contract Valuation Price on each CME exchange business day is the official daily settlement price per US Equity Futures Contracts quoted by the CME on such CME exchange business day.

Overnight Interest Rate: The overnight interest rate used for purposes of calculating the value of the US Equity Futures Strategy Index is the overnight interest rate as published on Global Insight DRI page USD-FEDERAL-FUNDS-H15, which follows the ACT/360 day count fraction convention (meaning the actual number of days in the relevant period divided by 360). If this overnight interest rate is not published or is otherwise unavailable for any CME exchange business day, then the last available overnight interest rate published on such page will be used as the overnight interest rate for such CME exchange business day.

Unavailability of US Equity Futures Contract Valuation Price: The Calculation Agent will not, however, calculate the value of the US Equity Futures Strategy Index, or will calculate such value pursuant to a different methodology (as described below under "Price of US Equity Futures Contracts Unavailable – Unavailable Within the Roll Period"), as the case may be, at any time where the US Equity Futures Contract Valuation Price for the first nearby and/or the second nearby US Equity Futures Contracts, as applicable, is not published or is otherwise unavailable as further described below.

- **Publication of Changes to the Methodology**

Changes to the Methodology made by the Index Committee will be publicly announced at least 60 CME exchange business days prior to their effective date. Adjustments made by the Calculation Agent in response to the unavailability of the US Equity Futures Contract Valuation Price will be publicly announced as promptly as is reasonably practicable.

- **Index Committee**

An Index Committee is responsible for overseeing the Index and the Methodology, while the Calculation Agent is responsible for the day to day implementation of the Methodology, for the calculation of the Index, including responding to events as described under "Price of US Equity Futures Contracts Unavailable", and for publication of the Index Value. The Index Committee is committed to maintaining the Index as a liquid, tradable index. The Index Committee is currently comprised of three full-time employees of The Goldman Sachs Group, Inc. or one or more of its affiliates.

The Index Committee may exercise limited discretion with respect to the Index, as contemplated by the Methodology. Any such changes or actions are publicly announced as promptly as is reasonably practicable and normally at least five CME exchange business days prior to their effective date. The Calculation Agent may from time to time consult the Index Committee on matters of interpretation with respect to the Methodology and when the price of the US Equity Futures Contracts are unavailable. 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, are confidential. The Index Committee will determine the successor of any of its members.

Roll Methodology

Each US Equity Futures Contract has an expiration on specified quarter end dates (March, June, September or December). At any given time, the US Equity Futures Strategy Index will include the first nearby US Equity Futures Contract. As the first nearby US Equity Futures Contract comes to expiration, it is be replaced by the second nearby US Equity Futures Contract. For example, a US Equity Futures Contract may specify a June expiration. As time passes, the contract expiring in June is replaced by a US Equity Futures Contract with a September expiration during the relevant roll period. This process is referred to as "rolling".

Roll Period: Rolling will be carried out during the three CME exchange business days starting from, and including, the third to last CME exchange business day prior to the last trade date of the first nearby US Equity Futures Contract to, and including, the last CME exchange business day prior to the last trade date of such US Equity Futures Contracts. Such period is referred to from time to time as the "roll period". On each CME exchange business day of the roll period, one third of the notional investment in the first nearby US Equity Futures Contract will be rolled into the second nearby US Equity Futures Contract, and the prices at which the US Equity Futures Contracts are rolled will be based on the US Equity Futures Contract Valuation Prices for each of the first nearby and second nearby US Equity Futures Contracts. Rolling will, however, be carried out pursuant to a different methodology when at any time during the roll period the US Equity Futures Contract Valuation Prices for either or both of the first nearby and second nearby US Equity Futures Contracts are not published or are otherwise unavailable as further described below.

Price of US Equity Futures Contracts Unavailable

Unavailable Outside of the Roll Period: If, on any CME exchange business day that does not fall within the roll period, the US Equity Futures Contract Valuation Price for the first nearby US Equity Futures Contract is not published or is otherwise unavailable, then the Calculation Agent will not calculate any value for the US Equity Futures Strategy Index but will publish the last available value.

In such an instance, if, on the immediately following CME exchange business day, the US Equity Futures Contract Valuation Price for the first nearby US Equity Futures Contract is available, the daily return ratio of the value of the US Equity Futures Contracts will be calculated as the *quotient* of (a) the US Equity Futures Contract Valuation Price on that immediately following CME exchange business day *divided* by (b) the last available US Equity Futures Contract Valuation Price; *provided*, *however*, that, for the avoidance of doubt, if such immediately following CME exchange business day is the first day of the roll period and the US Equity Futures Contract Valuation Price for the second nearby US Equity Futures Contract is not published or is otherwise unavailable on that immediately following CME exchange business day, then, as further described below, the Calculation Agent will not calculate any value for the US Equity Futures Strategy Index but will publish the last available value.

Unavailable Within the Roll Period: If the US Equity Futures Contract Valuation Price is not published or is otherwise unavailable for either or both of the first nearby and second nearby US Equity Futures Contracts at any time during the roll period, then that rolling will be carried out pursuant to the following alternative rolling methodology:

- **Case 1:** If (a) the US Equity Futures Contract Valuation Price is not published or is otherwise unavailable on the first CME exchange business day of the roll period for either or both of the first nearby and second nearby US Equity Futures Contracts *and* (b) the US Equity Futures Contract Valuation Price is available on the second CME exchange business day of the roll period for both the first nearby and second nearby US Equity Futures Contracts, then:

  - one half of the notional investment in the first nearby US Equity Futures Contract will be rolled into the second nearby US Equity Futures Contract on that second CME exchange business day of the roll period; *and*

  - if the US Equity Futures Contract Valuation Price is also available on the third CME exchange business day of the roll period for both the first nearby and second nearby US Equity Futures Contracts, then the second half of the notional investment in the first nearby US Equity Futures Contract will be rolled over into the second nearby US Equity Futures Contract on that third CME exchange business day of the roll period; *but*

  - if the US Equity Futures Contract Valuation Price is not published or is otherwise unavailable on such third CME exchange business day of the roll period for either or both of the first nearby and second nearby US Equity Futures Contracts, then rolling of any remaining portion of the notional investment in the first nearby US Equity Futures Contract will be carried out as set out below under Case 4.

- **Case 2:** If the US Equity Futures Contract Valuation Price is not published or is otherwise unavailable on both the first and second CME exchange business days of the roll period for either or both of the first nearby and second nearby US Equity Futures Contracts, then:

  - if the US Equity Futures Contract Valuation Price is available on the third CME exchange business day of the roll period for both the first nearby and second nearby US Equity Futures Contracts, then the entire notional investment in the first nearby US Equity Futures Contract will be rolled into the second nearby US Equity Futures Contract on the third CME exchange business day of the roll period; *but*

- otherwise, the rolling of any remaining portion of the notional investment in the first nearby US Equity Futures Contract will be carried out as set out below under Case 4.

- **Case 3:** If the US Equity Futures Contract Valuation Price is available on the first CME exchange business day of the roll period for both of the first nearby and second nearby US Equity Futures Contracts (on which day one-third of the notional investment in the first nearby US Equity Futures Contract is rolled over into the second nearby US Equity Futures Contract), but the US Equity Futures Contract Valuation Price is not published or is otherwise unavailable on the second CME exchange business day of the roll period for either or both of the first nearby and second nearby US Equity Futures Contracts, then the remaining two-thirds of the notional investment in the first nearby US Equity Futures Contract will be rolled into the second nearby US Equity Futures Contract on the third CME exchange business day of the roll period, *unless* the US Equity Futures Contract Valuation Price is not published or is otherwise unavailable on such third CME exchange business day of the roll period for either or both of the first nearby and second nearby US Equity Futures Contracts (in which case the rolling of any remaining portion of the notional investment in the first nearby US Equity Futures Contract will be carried out as set out below under Case 4).

- **Case 4:** In any situation where the US Equity Futures Contract Valuation Price for either or both of the first nearby and second nearby US Equity Futures Contracts is not published or is otherwise unavailable on the third CME exchange business day of the roll period (including where such price is not published or is otherwise unavailable on both the first and third CME exchange business days of the roll period only, on both the second and third CME exchange business days of the roll period only or on all three CME exchange business days of the roll period), then any remaining amount of the notional investment in the first nearby US Equity Futures Contract will be rolled into the second nearby US Equity Futures Contract on the last trade date of the first nearby US Equity Futures Contract, which is the CME exchange business day immediately following the third CME exchange business day of the roll period. On such last trade date, rolling will be effected by using the special opening quotation for the first nearby US Equity Futures Contract and the first traded price for the second nearby US Equity Futures Contract, provided that if, on such last trade date, the special opening quotation for the first nearby US Equity Futures Contract and/or the first traded price for the second nearby US Equity Futures Contract is not published or otherwise unavailable, then the first nearby US Equity Futures Contract will be sold at the US Equity Futures Contract Valuation Price for such first nearby US Equity Futures Contract on the last reference day (as defined below) and the second nearby US Equity Futures Contract will be bought at the US Equity Futures Contract Valuation Price for such second nearby US Equity Futures Contract on the last reference day.

On each CME exchange business day on which rolling does not occur because the US Equity Futures Contract Valuation Price is not published or is otherwise unavailable for either or both of the first nearby and second nearby US Equity Futures Contracts (such day, a “no-roll CME exchange business day”; for the avoidance of doubt, a no-roll CME exchange business day may include any CME exchange business day of the roll period), the Calculation Agent will not calculate any value for the US Equity Futures Strategy Index but will publish the last available value.

If, on any CME exchange business day immediately following such no-roll CME exchange business day, the US Equity Futures Contracts are rolled over pursuant to the alternative methodology described above, then the Calculation Agent will apply alternative calculation methods to compute the level of the US Equity Futures Strategy Index on such CME exchange business day, which can be summarized as follows:

On such CME exchange business day immediately following such no-roll CME exchange business day, the level of the US Equity Futures Strategy Index will be computed as the *product* of:

- the value of the US Equity Futures Strategy Index as of the last CME exchange business day on which the US Equity Futures Contract Valuation Prices for both of the first nearby and second nearby US Equity Futures Contracts were available (such day, the “last reference day”); *multiplied* by

- the *sum* of:

  (i) the *daily return ratio* reflecting either:

    (a) if such CME exchange business day falls within the roll period, the weighted performance of the first nearby US Equity Futures Contract and the weighted performance of the second nearby US Equity Futures Contract from the last reference day to such CME exchange business day; or

    (b) if such CME exchange business day is a last trade date of the first nearby US Equity Futures Contract, the *product* of (x) the weighted performance of the first nearby US Equity Futures Contract from the last reference day up to the rolling effected as of the opening of the market on such last trade date, (y) the weighted performance of the second nearby US Equity Futures Contract from the last reference day up to the rolling effected as of the opening of the market on such last trade date and (z) the performance of the second nearby US Equity Futures Contract, including the second nearby contracts into which any remaining portion of the first nearby US Equity Futures Contract are rolled over on such last trade date, calculated based on the opening price and the official daily settlement price of the second nearby US Equity Futures Contract on such last trade date (for the avoidance of doubt, if the official daily settlement price of the second nearby US Equity Futures Contract is not published or is otherwise unavailable on such last trade date, then the Calculation Agent will not calculate any value for the US Equity Futures Strategy Index but will publish the last available value),

  plus

  (ii) the overnight interest rate for the calculation period.

Publication

The value of the US Equity Futures Strategy Index is published on the Bloomberg page FRSIUSE <Index> (or any successor page).

- **Historical Data**

The Base Date for the Index is a date earlier than that on which the Calculation Agent began calculating the Index. Therefore, historical information provided from the Base Date to the date on which the Calculation Agent began calculating the index 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 Base Date using the Methodology. This data does not reflect actual performance, nor was a contemporaneous investment model run of the Index.

Historical levels of the Index are calculated with reference to the US Equity Futures Contract Valuation Prices determined based on the latest available data published by the CME.

US Equity Futures Strategy Index Calculation Formulae

The formulae for the calculation of the US Equity Futures Strategy Index are presented below. Investors, however, should be aware that these formulae do not reflect the alternative rolling and calculation methodologies applied when the value of the relevant US Equity Futures Contracts is not published or is otherwise unavailable (as further described above).

$$TRI_t = (r_t + \frac{i_{t-n}}{360} \cdot n)\, TRI_{t-n};$$

$$\begin{cases} r_t = \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}}, \\ \text{when NOT in the 3-day roll period} \\ r_t = (1 - \dfrac{m-1}{3}) \cdot \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}} + \dfrac{m-1}{3} \cdot \dfrac{{}_cP_{2,t}}{{}_cP_{2,t-n}} \\ \text{when on the m}^{\text{th}} \text{ day of the roll period, } m = 1, 2, 3 \end{cases}$$

Where

t =The relevant CME exchange business day;

TRI_t = The value of US Equity Futures Strategy Index as of day t;

$i_{t\text{-}n}$ =Overnight interest rate as of (t - n);

n = The number of actual calendar days between t and the immediately preceding CME exchange business day (t - n);

r_t = Daily price return of the value of the US Equity Futures Contracts on t;

${}_cP_{1,t}$ = US Equity Futures Contract Valuation Price of the first nearby US Equity Futures Contract on t; *provided* that, for the avoidance of doubt, once the rolling has been effected in accordance with the above roll methodology and there is no remaining amount to be rolled, the first nearby US Equity Futures Contract shall mean the US Equity Futures Contracts into which the notional investment has been rolled; and

${}_cP_{2,t}$ = US Equity Futures Contract Valuation Price of the second nearby US Equity Futures Contract on t.

Note: All calculations are based on seven significant figures (rounded at the eighth significant figure), and the value is published up to two decimal places (rounded at the third decimal place).

Adjustment; Rebasement

Investors should be aware that if the terms of the US Equity Futures Contracts are modified or the S&P 500® Index is rebased or otherwise adjusted or modified, the Index Committee may take such steps as it considers appropriate in response to such modification, rebasement or adjustment.

THE E-MINI S&P 500® INDEX FUTURES CONTRACTS

The E-mini S&P 500® Index futures contracts underlying the US Equity Futures Strategy Index are contracts (with maturities as defined by the reference exchange) to buy or sell standardized trading "units". At the time the US Equity Futures Strategy Index invests in them, the futures contracts will have a term to maturity as defined by the reference exchange. One trading unit of E-mini S&P 500® Index futures contracts equals US$50 *multiplied* by the S&P 500® Index (price return version). The E-mini S&P 500® Index futures contract closest to expiration at any given time is known as the "first nearby" futures contract, and the E-mini S&P 500® Index futures contract that is second closest to expiration at any given time is known as the "second nearby" futures contract.

The S&P 500® Index

According to S&P Dow Jones Indices, which created the S&P 500® Index in 1957, the S&P 500® is widely regarded as the best single gauge of large cap U.S. equities. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization. Additional information on the S&P 500® Index is available through a variety of media sources and at http://us.spindices.com/indices/equity/sp-500. None of these media materials, the S&P website nor any of the material it includes is incorporated by reference herein.

- **Licensing Information**

Goldman Sachs International is the sole licensing agent for the Index. Questions about licensing the Index can be directed to the individuals listed under "Contact Information" below.

- **Contact Information**

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- **Calculation Agent Website**

http://www.standardandpoors.com/

The US Equity Futures Rolling Strategy Index (the "Index") is the exclusive property of Goldman Sachs International, which has contracted with S&P Opco, LLC (a subsidiary of S&P Dow Jones Indices LLC) ("S&P Dow Jones Indices") to calculate and maintain the Index based on an objective pre-agreed methodology. S&P® is a registered trademark of Standard & Poor's Financial Services LLC ("SPFS"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); and, these trademarks have been licensed to S&P Dow Jones Indices. Neither S&P Dow Jones Indices, SPFS, Dow Jones nor any of their affiliates sponsor and promote the Index and none shall be liable for any errors or omissions in calculating the Index.

The Index relies on information published by the exchange regarding the price of the US Equity Futures Contracts as well as other matters. The Calculation Agent and Index Sponsor make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the US Equity Futures Strategy Index.

Appendix 2
US Technology Equity Futures Rolling Strategy Series Q Total Return Index

Date: 26 November 2019

The information specified in the table below with respect to the US Technology Equity Futures Rolling Strategy Series Q Total Return Index (the "**Strategy**") constitutes the Strategy Supplement relating to the Strategy. The General Description of the Strategy is set out in the document headed "**The Goldman Sachs Asset Conversion Strategies**". Terms defined in this Strategy Supplement shall be deemed to be defined as such for purposes of such General Description. Unless otherwise specified, terms used but not defined in this Strategy Supplement shall have the meanings given to them in the Common Strategy Terms and the General Description. This Strategy Supplement is supplemental to and must be read in conjunction with the Common Strategy Terms and the General Description.

This version of the Strategy Supplement in respect of the Strategy is dated as indicated above. Upon each update to a new version of this Strategy Supplement, the most recent version shall be deemed to be in force from the date of such update and replace in its entirety the preceding version such that, in the event of any conflict between the preceding version and the most recent version, the most recent version shall prevail.

This Strategy Supplement to the General Description referred to above contains certain items in relation to the Strategy.

Additional Risk Factors:

Risk Factors in the Goldman Sachs Common Strategy Terms
Investors in any product linked to this Strategy should read and understand the risk factors in the section “Risk Factors” of the document headed “The Goldman Sachs Common Strategy Terms”.

Additional Conflicts of Interest:

Third Party Interests

Goldman Sachs International may from time to time have a direct or indirect ownership interest in the Strategy Calculation Agent and/or other third party data providers.

General Parameters

Strategy Calculation Agent
Goldman Sachs International

Strategy Currency
US Dollar ("**USD**")

Strategy Bloomberg Ticker
GSISNQET Index

Strategy Value Publication Precision
4 decimal places with 0.00005 rounded upwards

Strategy Publication Data Source
https://marquee.gs.com/studio or any successor page

Strategy Parameters

Strategy Return Type
Total Return

Strategy Inception Date
30 April 2013

Strategy Initial Value
100

Strategy Value Floor
Applicable

Strategy Business Day
The Strategy Inception Date and thereafter each Asset Business Day

Strategy Rebalancing Day
The Strategy Inception Date and thereafter each Strategy Business Day.

Strategy Trading Day
Business days according to the Chicago Mercantile Exchange trading calendar

Strategy Deduction Rate
0.0% (Not Applicable)

Strategy Deduction Day Count Fraction Convention
Not Applicable

Asset Parameters

Asset
US Technology Equity Futures Rolling Strategy Series Q Excess Return Index

Asset Currency
USD

Asset Return Type
Excess Return

Asset Sponsor / Asset Data Sponsor
Goldman Sachs International

Asset Bloomberg Ticker
FRSINQEE Index

Asset Inception Date

30 April 2013 Asset Initial Value
100.0

Asset Value Floor
Applicable

Asset Business Day
Each "Strategy Business Day" (such "Strategy Business Day" as defined in the strategy description of the Asset)

Asset Value Convention
In respect of an Asset and a day which is not an Asset Business Day the Asset Value shall be the Asset Value of such Asset as of the immediately preceding Asset Business Day.

Asset Rebalancing Day
In respect of an Asset, each Asset Business Day from and including the Asset Inception Date on which both the Asset Value and the Adjusted Reference Level of such Asset are strictly greater than zero.

Reference Level
For all Assets, on any given calendar day in respect of an Asset, the closing level of the relevant Asset as determined by the relevant Asset Sponsor in respect of such calendar day.

Additional Information on the Asset
Appendix 2.

Money Market Index Parameters

Money Market Indices

Currency	Money Market Index	Money Market Index Bloomberg Ticker*	Money Market Business Days	Additional Information
USD	USD Goldman Sachs Overnight Money Market Index	GSMMUSD Index	Index Business Days** of the USD Goldman Sachs Overnight Money Market Index	Appendix 1

* Please note that the value of each Money Market Index published on each Money Market Index Bloomberg Ticker is automatically rounded by Bloomberg with its own methodology. Therefore, such value can be different from the Reference Level of each Money Market Index.

** Such Index Business Days are defined in the index description of the relevant Money Market Index.

Reference Level of the Money Market Indices
In respect of a Money Market Index and:

1. a Money Market Business Day for such Money Market Index, its Index Value as calculated by the Index Sponsor of such Money Market Index in respect of such Money Market Business Day; and
2. any day other than a Money Market Business Day for such Money Market Index, its Index Value as calculated by the Index Sponsor of the Money Market Index in respect of the immediately preceding Money Market Business Day.

Currency Exchange Rate, Reference Currency and Reference Country

Currency Exchange Rate	Reference Currency	Reference Country
Not Applicable	Not Applicable	Not Applicable

Appendix 1

The Goldman Sachs Overnight Money Market Indices

Additional Risk Factors

See the separate strategy description of The Goldman Sachs Overnight Money Market Indices.

Additional Market Disruption Events

See the separate strategy description of The Goldman Sachs Overnight Money Market Indices.

Summary Description

See the separate strategy description of The Goldman Sachs Overnight Money Market Indices.

Appendix 2

US Technology Equity Futures Rolling Strategy Series Q Excess Return Index

Additional Risk Factors

See the separate strategy description of US Technology Equity Futures Rolling Strategy Series Q Excess Return Index.

Additional Market Disruption Events

See the separate strategy description of US Technology Equity Futures Rolling Strategy Series Q Excess Return Index.

Summary Description

See the separate strategy description of US Technology Equity Futures Rolling Strategy Series Q Excess Return Index.

Appendix 3

Index Disclaimers

Asset Disclaimer

No sponsor of any index referenced in this material endorses, promotes or guarantees the quality, accuracy and/or completeness of any strategy or any product linked to any strategy and no such sponsor shall have any liability in relation to any strategy or any product linked to any strategy.

This material is strictly private and confidential

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The Goldman Sachs Asset Conversion Strategies

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THE GOLDMAN SACHS ASSET CONVERSION STRATEGIES

GENERAL DESCRIPTION

Date: 24 June 2014

1. Introduction, Strategy purpose and important information

A. Introduction

The Goldman Sachs Asset Conversion Strategies (each, a "**Strategy**" and together, the "**Strategies**") are a group of notional rules-based proprietary Strategies which Goldman Sachs International (or its successor) as strategy sponsor (the "**Strategy Sponsor**") may create from time to time.

This description (the "**General Description**") together with the most recently published version of the Goldman Sachs Common Strategy Terms (as updated from time to time, the "**Common Strategy Terms**") which are incorporated herein, sets out the rules and methodology applicable to a Strategy. References in this General Description and to the "Strategy" shall be construed as references to the relevant Strategy named in the supplement (the **"Strategy Supplement"**) for such Strategy and all provisions in the General Description shall be construed, unless otherwise stated, in relation to such Strategy. Capitalised terms used in this General Description but not defined herein shall have the meanings given to them in the relevant Strategy Supplement. The General Description, the Common Strategy Terms and the Strategy Supplement for a Strategy are together the "**Strategy Description**" for such Strategy.

INVESTORS IN ANY PRODUCT LINKED TO A STRATEGY ARE ADVISED TO READ AND UNDERSTAND THIS GENERAL DESCRIPTION, THE COMMON STRATEGY TERMS AND THE RELEVANT STRATEGY SUPPLEMENT. IN PARTICULAR INVESTORS MUST READ THE SECTIONS HEADED "RISK FACTORS", "CONFLICTS OF INTEREST" AND "DISCLAIMERS" PRIOR TO MAKING ANY INVESTMENT DECISION.

B. Strategy Purpose of the Strategies

Each Strategy is designed to provide investors with a synthetic exposure to the performance of an "**Asset**", as specified in the relevant Strategy Supplement.

Each Strategy tracks the performance of the Asset.

If the performance of the Asset is calculated on a total return basis (specified as the Asset Return Type in the relevant Strategy Supplement) and the Strategy Return Type is specified as excess return, then the performance of the Strategy will reflect the performance of the Asset as reduced by a synthetic interest rate return on a notional cash amount.

If the performance of the Asset is calculated on an excess return basis (specified as the Asset Return Type in the relevant Strategy Supplement) and the Strategy Return Type is specified as total return, then the performance of the Strategy will reflect the performance of the Asset as increased by a synthetic interest rate return on a notional cash amount.

Each Strategy is denominated in a currency specified in the Strategy Supplement (the **"Strategy Currency"**). Unless specified otherwise in the Strategy Supplement, a Strategy has an internal simulated currency hedge mechanism if the corresponding Asset is denominated in a currency (the **"Asset Currency"**) other than the Strategy Currency, that seeks to offset a substantial portion of the positive or negative effects of currency exchange rate fluctuations in such Asset Currency against the Strategy Currency on the value of such Asset.

If a Strategy Deduction Rate is specified in the relevant Strategy Supplement, a "**Strategy Deduction Amount**" will be deducted from the value of a Strategy, which will have the effect of reducing the performance of a Strategy.

The general principles described in this Section 1.B "*Strategy Purpose of the Strategies*" of this

General Description are referred to as the "**Strategy Purpose**" for a Strategy.

C. Important Information

The information set out in the General Description reflects the policies of the Strategy Sponsor, and is subject to change in accordance with the parts of the Common Strategy Terms entitled "*Disruption Events and Consequences*" and "*Change in Strategy Methodology*".

The purposes, aims and intentions of the algorithms and methodologies summarised in the Strategy Description may not be achieved. Investors should read each of the General Description, the Common Strategy Terms and the Strategy Supplement in their entirety. Investors should pay particular attention to the risk factors set out in each of the General Description, the Common Strategy Terms and the Strategy Supplement.

The part entitled "Description of the Strategies" is subject to and qualified by the parts entitled "Computation of the Asset Value" and "Computation of the Strategy Value" of this General Description. In particular, in the event of any inconsistency between the provisions of (i) "Description of the Strategies", and (ii) "Computation of the Asset Value" and "Computation of the Strategy Value", such latter parts will prevail.

The value of a Strategy could become negative, unless specified otherwise in the relevant Strategy Supplement.

Each Strategy is initially calculated and published by Goldman Sachs International as Strategy Calculation Agent and may thereafter be such person as the Strategy Sponsor may appoint from time to time to make certain determinations and calculations and to publish the value of the Strategies as described in the Strategy Description (the "**Strategy Calculation Agent**"). The Strategy Sponsor does not have any obligation to ensure that the Strategy Calculation Agent continues to publish the value of a Strategy and the Strategy Calculation Agent may discontinue publication at any time.

Each Strategy operates according to a set of pre-determined rules as summarised in the Strategy Description, and the Strategy Sponsor and Strategy Calculation Agent do not exercise discretion except in the limited circumstances summarised in the Strategy Description. Such circumstances include but are not limited to those summarised in the parts entitled *"Disruption Events and Consequences*", "*Change in Strategy Methodology*" and "*The Effect of Deductions on the Strategy Value*" of the General Description and/or Common Strategy Terms. Neither of the Strategy Sponsor or Strategy Calculation Agent owes any person any fiduciary duties in respect of a Strategy and are not required to take the interest of any person into account in making any determination with respect thereto. The Strategies are, therefore, not managed strategies.

The Strategy Sponsor owns the copyright and all other rights in each Strategy and in the Strategy Description. Any use of any such intellectual property rights may only be made with the prior written consent of the Strategy Sponsor. The "Goldman Sachs *Asset Conversion* Strategy" and the "Goldman Sachs Asset Conversion Strategies" are service marks of Goldman Sachs International.

Each version of this document is dated. Upon each update to a new version of this document, the most recent version shall be deemed to be in force from the date of such update and replace in its entirety the preceding version such that, in the event of any conflict between the preceding version and the most recent version, the most recent version shall prevail.

2. Description of the Strategies

A. Description of the Asset and Determination of the Asset Value

Description of the Asset: The Asset of a Strategy and any information (including any additional risk factors) related to it are specified in the Strategy Supplement for such Strategy.

Determination of Asset Value: The value of the Asset (the "**Asset Value**") is calculated on each "**Asset Business Day**" (as specified in the Strategy Supplement). The Asset Value of the Asset on the Asset Inception Date is specified in the Strategy Supplement. The Asset Value of the Asset in respect of an Asset Business Day falling after the Asset Inception Date is determined based on the Reference Level of such Asset, and which is adjusted to reflect:

(i) any adjustments following the occurrence of a Potential Adjustment Event and/or an Ex Day (as further described under the Section "*Computation of the Asset Value*" of this General Description);

(ii) where the Asset Currency is not the same as the Strategy Currency, unless specified differently in the Strategy Supplement, an internal simulated currency hedge mechanism utilising a series of transactions which seeks to offset a substantial portion of the positive or negative effects of any fluctuations in the relevant Currency Exchange Rate in respect of such Asset Currency;

(iii) the addition and/or deduction of the return of one or more synthetic cash deposits denominated in the Strategy Currency and/or the Asset Currency to change the type of return of the Asset (the "**Asset Return Type**", as specified in the Strategy Supplement) and/or a Strategy, from or to a total return or an excess return basis.

If the Asset Value Floor (as specified in the Strategy Supplement) is applicable then the Asset Value is floored at zero.

The calculation of the Asset Value is described in more detail in the Section "*Computation of the Asset Value*" of this General Description.

The Strategy Calculation Agent may also make adjustments to the determination of the Asset Value under certain circumstances as described in the Part entitled "*Disruption Events and Consequences*" of the Common Strategy Terms.

B. Calculation of the Strategy Value

Composition of the Strategy: The exposure of a Strategy to the performance of the Asset is one hundred per cent. (100%) at all times, and is rebalanced regularly (such rebalancing a **"Strategy Rebalancing"**) to reflect the Strategy Deduction Amount, if applicable.

Calculation of the Strategy Value: The value of a Strategy (the **"Strategy Value"**) is calculated on each "**Strategy Business Day**" (as specified in the Strategy Supplement). The Strategy Value as of the Strategy Inception Date is specified in the Strategy Supplement. On each Strategy Business Day following the Strategy Inception Date, the Strategy Value is determined based on the Asset Value which is adjusted to reflect the Strategy Deduction Amount (if applicable), as summarised in Section "*The Effect of Deductions on the Strategy Value*" of this General Description. The calculation of the Strategy Value is described in more detail in the Section "*Computation of the Strategy Value*" of this General Description.

If the Strategy Value Floor (as specified in the Strategy Supplement) is applicable and the Strategy Value in respect of a Strategy Business Day would be zero or less than zero, then the Strategy Value in respect of such Strategy Business Day and all following Strategy Business Days shall be zero. If the Strategy Value Floor is not specified to be applicable then the Strategy Value of a Strategy may be a negative value.

Under certain circumstances described in the part entitled "*Disruption Events and Consequences*" of the Common Strategy Terms, the Strategy Calculation Agent may delay or amend the calculation of the Strategy Value.

C. The Effect of Deductions on the Strategy Value

Deduction made in the calculation of the Strategy Value: The Strategy Value is calculated so as to include the following deduction:

- **Strategy Deduction Amount**: If a Strategy Deduction Rate is specified in the relevant Strategy Supplement, then a "**Strategy Deduction Amount**" will be deducted from the Strategy Value on each Strategy Business Day falling after the Strategy Inception Date. The Strategy Deduction Amount is based on the Strategy Deduction Rate, which is a fixed annual rate, expressed as a percentage (and specified in the relevant Strategy Supplement). The Strategy Deduction Amount has the effect of reducing the performance of a Strategy.

The effects of the Strategy Deduction Amount on the Strategy Value are described in further detail in the Section *"Computation of the Strategy Value"* of this General Description.

3. Computation of the Asset Value

Asset Value

The Asset Value on the Asset Inception Date is equal to its Asset Initial Value.

On any given Asset Business Day following the relevant Asset Inception Date, the Asset Value will be calculated as follows:

(i) Asset denominated in the Strategy Currency:

$$A_t = A_{ARt} \times \left(\frac{MM_t^A}{MM_{ARt}^A} - \frac{MM_t^I}{MM_{ARt}^I} + \frac{I_t}{I_{ARt}} \right)$$

(ii) Asset denominated in a currency other than the Strategy Currency:

$$A_t = A_{ARt} \times \left(\frac{MM_t^A}{MM_{ARt}^A} - \frac{MM_t^I \times FX_t}{MM_{ARt}^I \times FX_{ARt}} + \frac{I_t \times FX_t}{I_{ARt} \times FX_{ARt}} \right)$$

Where:

Subscript $_{(t)}$ refers to the given Asset Business Day;

Subscript $_{(ARt)}$ refers to the Asset Rebalancing Day immediately preceding (but not including) Asset Business Day$_{(t)}$;

A_{date} is the Asset Value on calendar date$_{(date)}$;

I_{date} is the Adjusted Reference Level on calendar date$_{(date)}$;

MM_{date}^A (i) has a the constant value of 1 (one) if the Strategy Return Type is "Excess Return", or (ii) is the Reference Level of the Money Market Index in the Strategy Currency as of calendar date$_{(date)}$ if the Strategy Return Type is "Total Return";

MM_{date}^I (i) has a constant value of 1 (one) if the Asset Return Type of the Asset is "Excess Return", or (ii) is the Reference Level of the Money Market Index in the Asset Currency of the Asset as of calendar date$_{(date)}$ if the Asset Return Type is "Total Return";

FX_{date} is the applicable Currency Exchange Rate to convert one unit of the Asset Currency into the Strategy Currency as of calendar date$_{(date)}$.

If the Asset Value Floor (as specified in the Strategy Supplement) is applicable and the Asset Value in respect of an Asset Business Day would be zero or less than zero, then the Asset Value in respect of such Asset Business Day and all following Asset Business Days shall be zero. If the Asset Value Floor is not specified to be applicable then the Asset Value may be a negative value.

Adjusted Reference Level

On any Asset Business Day, the Adjusted Reference Level will be determined by the Strategy Calculation Agent by adjusting the Reference Level to account for the occurrence of (i) any Potential Adjustment Event, or (ii) an Ex Day of an Ordinary Dividend, each as further described in the Common Strategy Terms.

Reference Level

On any Asset Business Day in respect of the Asset or a Money Market Index, the Reference Level will be determined by the Strategy Calculation Agent according to the methodology described in the relevant Strategy Supplement in respect of such Asset Business Day.

4. Computation of the Strategy Value

Strategy Value

The Strategy Value on the Strategy Inception Date is equal to the Strategy Initial Value.

On each Strategy Business Day following the Strategy Inception Date the Strategy Value is calculated as follows:

$$V_t = V_{VRt} \times \left(\frac{A_t}{A_{VRt}} - DCF_{VRt,t} \times SF_{VRt}\right)$$

Where:

Subscript $_{(t)}$ refers to the given Strategy Business Day;

Subscript $_{(VRt)}$ refers to the Strategy Rebalancing Day (as specified in the relevant Strategy Supplement) immediately preceding (but not including) Strategy Business Day$_{(t)}$;

V_{date} is the Strategy Value on calendar date$_{(date)}$;

A_{date} is the Asset Value on calendar date$_{(date)}$;

$DCF_{date1,date2}$ is the day count fraction for the period from (and including) calendar date$_{(date1)}$ to (but excluding) calendar date$_{(date2)}$, computed by using the Strategy Deduction Day Count Fraction Convention; and

SF_{date} is the Strategy Deduction Rate on calendar date $_{(date)}$.

If the Strategy Value Floor (as specified in the Strategy Supplement) is applicable and the Strategy Value in respect of a Strategy Business Day would be zero or less than zero, then the Strategy Value in respect of such Strategy Business Day and all following Strategy Business Days shall be zero. If the Strategy Value Floor is not specified to be applicable then the Strategy Value of a Strategy may be a negative value.

Strategy Supplement

Date: 20 October 2020

The information specified below constitutes the Strategy Supplement relating to the following strategies (each a "**Strategy**" and together the "**Strategies**"):

1. **US Technology Equity Futures Rolling Strategy Series Q Excess Return Index**

The General Description of the Strategy is set out in the document headed "**The Goldman Sachs Rolling Futures Strategies**". Terms defined in this Strategy Supplement shall be deemed to be defined as such for purposes of such General Description. Unless otherwise specified, terms used but not defined in this Strategy Supplement shall have the meanings given to them in such General Description. This Strategy Supplement is supplemental to and must be read in conjunction with such General Description.

This version of the Strategy Supplement in respect of the Strategy is dated as indicated above. Upon each update to a new version of this Strategy Supplement, the most recent version shall be deemed to be in force from the date of such update and replace in its entirety the preceding version such that, in the event of any conflict between the preceding version and the most recent version, the most recent version shall prevail.

This Strategy Supplement to the General Description referred to above contains certain items in relation to the Strategy.

General Parameters

Strategy Calculation Agent	Solactive AG
Strategy Value Publication Precision	4 decimal places with 0.00005 rounded upwards
Strategy Publication Data Source	https://360.gs.com/go/gs-systematic-strategies

Strategy Parameters

Strategy Initial Value	100
Strategy Business Day	Each Exchange Business Day.
Strategy Value Floor	Applicable

Futures Parameters

Exchange Business Day
Any day on which the Reference Exchange is open for a trading session, including days for which the Reference Exchange has scheduled shortened trading hours.

Reference Level
With respect to a Futures Contract and an Exchange Business Day, the settlement price published by the Reference Exchange.

Front Futures Contract
With respect to a Strategy Business Day the 1st Nearby Futures Contract with respect to such day.

Back Futures Contract
With respect to a Strategy Business Day the 2nd Nearby Futures Contract with respect to such day.

Roll Period
In respect of a Futures Contract the period from, and including, the day which falls 5 Strategy Business Days before the Futures Contract Selection Date to, but not including the Futures Contract Selection Date of such Futures Contract.

Front Contract Weight
In respect of a Strategy Rebalancing Day, the Front Contract Weight is calculated as:

(i) The number of Strategy Rebalancing Days in the relevant Roll Period which fall strictly after such Strategy Rebalancing Day, divided by

(ii) the number of Strategy Rebalancing Days in the relevant Roll Period.

Back Contract Weight
In respect of a Strategy Rebalancing Day the Back Contract Weight is calculated as one (1) minus the Front Contract Weight in respect of such day.

Futures Contract Selection Date
In respect of a Strategy and a Futures Contract:

(i) If the Month Letter Code of the Futures Contract Identifier (Bloomberg) of such Futures Contract is an Eligible Futures Contract Expiration for such Strategy, then the Futures Contract Selection Date is the Exchange Business Day immediately prior to the Last Trading Date of such Futures

Contract.

(ii) Otherwise the Futures Contract Selection Date shall not be defined for such Futures Contract and such Futures Contract shall not be a Front Futures Contract or a Back Futures Contract for the purpose of the relevant Strategy.

Last Trading Date In respect of a Futures Contract, the last scheduled trading day of such contract according to the trading calendar of the Reference Exchange.

Money Market Index Parameters

Currency	Money Market Index	Money Market Index Bloomberg Ticker	Money Market Business Days	Additional Information
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Strategy-Specific Parameters

The following parameters are specific to a given Strategy:

Strategy	Strategy Currency	Strategy Bloomberg Ticker	Strategy Reuters Ticker	Strategy Return Type	Strategy Inception Date	Futures Contract	Futures Contract Identifier (Bloomberg)	Reference Exchange	Additional Risk Factors	Eligible Futures Contract Expiration
US Technology Equity Futures Rolling Strategy Series Q Excess Return Index	USD	FRSINQEE Index	.FRSINQEE	Excess Return	30 April 2013	NASDAQ 100 Stock Index	NQ	Chicago Mercantile Exchange (CME)	None	H, M, U, Z

Month Letter Codes are shown in the table below

Month	Month Letter Code
January	F
February	G
March	H
April	J
May	K
June	M
July	N
August	Q
September	U
October	V
November	X
December	Z

Disclaimers

The relevant disclaimers are set out below. Any required amendments to these disclaimers will be notified by Goldman Sachs from time to time:

Chicago Mercantile Exchange (CME):

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The Goldman Sachs Rolling Futures Strategies

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THE GOLDMAN SACHS ROLLING FUTURES STRATEGIES

GENERAL DESCRIPTION

Date: 15 September 2014

1. Introduction, Strategy purpose and important information

A. Introduction

The Goldman Sachs Rolling Futures Strategies (each, a "**Strategy**" and together, the "**Strategies**") are a group of notional rules-based proprietary Strategies which Goldman Sachs International (or its successor) as strategy sponsor (the "**Strategy Sponsor**") may create from time to time.

This description (the "**General Description**") together with the most recently published version of the Goldman Sachs Common Strategy Terms (as updated from time to time, the "**Common Strategy Terms**") which are incorporated herein, sets out the rules and methodology applicable to a Strategy. References in this General Description and to the "Strategy" shall be construed as references to the relevant Strategy named in the supplement (the **"Strategy Supplement"**) for such Strategy and all provisions in the General Description shall be construed, unless otherwise stated, in relation to such Strategy. Capitalised terms used in this General Description but not defined herein shall have the meanings given to them in the relevant Strategy Supplement. The General Description, the Common Strategy Terms and the Strategy Supplement for a Strategy are together the "**Strategy Description**" for such Strategy.

INVESTORS IN ANY PRODUCT LINKED TO A STRATEGY ARE ADVISED TO READ AND UNDERSTAND THIS GENERAL DESCRIPTION, THE COMMON STRATEGY TERMS AND THE RELEVANT STRATEGY SUPPLEMENT. IN PARTICULAR INVESTORS MUST READ THE SECTIONS HEADED "RISK FACTORS", "CONFLICTS OF INTEREST" AND "DISCLAIMERS" IN THE STRATEGY DESCRIPTION PRIOR TO MAKING ANY INVESTMENT DECISION.

B. Strategy Purpose of the Strategies

Each Strategy is designed to provide investors with a synthetic exposure to the performance of certain futures contracts by notionally entering into, and then rolling, two futures contracts (each a “**Futures Contract**”) with different expiration dates. Each Strategy is rolling from a near-dated Futures Contract (the “**Front Futures Contract**”) to a further-dated Futures Contract (the “**Back Futures Contract**”). The Strategy Supplement for a Strategy will set out details of the Futures Contracts.

Each Strategy tracks the dynamically weighted returns of such pair of Futures Contracts. The weights of the Futures Contracts reflecting the rolling methodology are referred to herein as the “**Futures Contract Weights**”. A Strategy may be calculated on a total return basis or an excess return basis (the “**Strategy Return Type**”). The performance of a Strategy calculated on an excess return basis does not include a synthetic interest rate return on a notional cash amount.

If the Strategy Value Floor is specified in the Strategy Supplement as applicable in respect of a Strategy and the Strategy Value in respect of a Strategy Business Day would be zero or less than zero, then the Strategy Value in respect of such Strategy Business Day and all following Strategy Business Days shall be zero. If the Strategy Value Floor is not specified to be applicable then the Strategy Value of a Strategy may be a negative value. Each Strategy is denominated in a currency specified in the Strategy Supplement (the “**Strategy Currency**”).

The general principles described in this Section 1.B "*Strategy Purpose of the Strategies*" of this General Description are referred to as the “**Strategy Purpose**” for a Strategy.

C. Important Information

The information set out in the General Description reflects the policies of the Strategy Sponsor, and is subject to change in accordance with the parts of the Common Strategy Terms entitled "*Disruption Events and Consequences*" and "*Change in Strategy Methodology*".

The purposes, aims and intentions of the algorithms and methodologies summarised in the Strategy Description may not be achieved. Investors should read each of the General Description, the Common Strategy Terms and the Strategy Supplement in their entirety. Investors should pay particular attention to the risk factors set out in each of the General Description, the Common Strategy Terms and the Strategy Supplement.

The part entitled "*Description of the Strategies*" is subject to and qualified by the part entitled "*Computation of the Strategy Value*" of this General Description. In particular, in the event of any inconsistency between the provisions of "*Description of the Strategies*", and "*Computation of the Strategy Value*", such latter part will prevail.

Each Strategy is initially calculated and published by Goldman Sachs International as Strategy Calculation Agent and may thereafter be such person as the Strategy Sponsor may appoint from time to time to make certain determinations and calculations and to publish the value of the Strategies as described in the Strategy Description (the "**Strategy Calculation Agent**"). The Strategy Sponsor does not have any obligation to ensure that the Strategy Calculation Agent continues to publish the value of a Strategy and the Strategy Calculation Agent may discontinue publication at any time.

Each Strategy operates according to a set of pre-determined rules as summarised in the Strategy Description, and the Strategy Sponsor and Strategy Calculation Agent do not exercise discretion except in the limited circumstances summarised in the Strategy Description. Such circumstances include but are not limited to those summarised in the parts entitled *"Disruption Events and Consequences*", and "*Change in Strategy Methodology*" of the Common Strategy Terms. Neither of the Strategy Sponsor or Strategy Calculation Agent owes any person any fiduciary duties in respect of a Strategy and are not required to take the interests of any person into account in making any determination with respect thereto. The Strategies are, therefore, not managed strategies.

The Strategy Sponsor owns the copyright and all other rights in each Strategy and in the Strategy Description. Any use of any such intellectual property rights may only be made with the prior written consent of the Strategy Sponsor. The "*Goldman Sachs Rolling Futures Strategy*" is a service mark of Goldman Sachs International.

Each version of this document is dated. Upon each update to a new version of this document, the most recent version shall be deemed to be in force from the date of such update and replace in its entirety the preceding version such that, in the event of any conflict between the preceding version and the most recent version, the most recent version shall prevail.

2. Description of the Strategies

A. Description of the Futures Contracts

The Futures Contracts for a Strategy and any information (including any additional risk factors) related to them are set out in the Strategy Supplement for such Strategy, together with the specification of the Front Futures Contract and the Back Futures Contract.

The level of a Futures Contract (the "**Reference Level**") is determined by the Strategy Calculation Agent according to the methodology specified in the Strategy Supplement.

The Strategy Calculation Agent may make adjustments to the determination of the Reference Level of a Futures Contract under certain circumstances as described in the Part entitled "*Disruption Events and Consequences*" of the Common Strategy Terms.

B. Calculation of the Strategy Value

Composition of the Strategy: The Strategy periodically rolls its synthetic exposure from the Front Futures Contract to the Back Futures Contract. Each period during which such rolling occurs is referred to herein as a **"Roll Period".** Futures Contract Weights are assigned and rebalanced periodically to the Front Futures Contract (such weight the "**Front Contract Weight**", as specified in the Strategy Supplement) and the Back Futures Contract (such weight the "**Back Contract Weight**", as specified in the Strategy Supplement) to reflect the rolling methodology. Such rebalancing of the Futures Contract Weights is referred to herein as a "**Strategy Rebalancing**", and each day in a Roll Period on which a rebalancing of the Futures Contracts takes place is referred to herein as a **"Strategy Rebalancing Day"**.

Under certain circumstances described in the part entitled "*Disruption Events and Consequences*" of the Common Strategy Terms, the Strategy Calculation Agent may postpone a Strategy Rebalancing in respect of one or more Futures Contracts.

Calculation of the Strategy Value: The value of a Strategy (the **"Strategy Value"**) is calculated on each "**Strategy Business Day**" (as specified in the Strategy Supplement). The Strategy Value as of the Strategy Inception Date is specified in the Strategy Supplement. On each Strategy Business Day following the Strategy Inception Date, the Strategy Value is calculated based on the returns of the Front Futures Contract and the Back Futures Contract during the period since the last Strategy Rebalancing Day, weighted by the Futures Contract Weights. The return of a Futures Contract is determined based on the Reference Level of such Futures Contract. The calculation of the Strategy Value is described in more detail in Section 3 "*Computation of the Strategy Value*" of this General Description.

Under certain circumstances described in the part entitled "*Disruption Events and Consequences*" of the Common Strategy Terms, the Strategy Calculation Agent may postpone or amend the calculation or publication of the Strategy Value.

3. Computation of the Strategy Value

Strategy Value

The Strategy Value with respect to the Strategy Inception Date is equal to the Strategy Initial Value.

With respect to each Strategy Business Day following the Strategy Inception Date the Strategy Value is calculated as follows:

$$E_t = E_{Rt} \times \left[1 + w_{Rt}^F \times \left(\frac{F_t^{F,Rt}}{F_{Rt}^{F,Rt}} - 1\right) + w_{Rt}^B \times \left(\frac{F_t^{B,Rt}}{F_{Rt}^{B,Rt}} - 1\right)\right]$$

$$V_t = V_{CR_t} \times \left[\frac{E_t}{E_{CR_t}} + \frac{MM_t}{MM_{CR_t}} - 1\right]$$

Where:

Subscript $_{(t)}$ refers to the given Strategy Business Day;

Subscript $_{(Rt)}$ refers to the Strategy Rebalancing Day (as specified in the relevant Strategy Supplement) immediately preceding (but not including) Strategy Business Day$_{(t)}$;

Subscript $_{(CRt)}$ refers to the Cash Rebalancing Day immediately preceding (but not including) the given Strategy Business day $_{(t)}$;

E_{date} is the Excess Return Value on calendar date $(date)$. On the Strategy Inception Date the Excess Return Value is equal to the Strategy Inception Value.

V_{date} is the Strategy Value on calendar date $(date)$;

w_{date}^F is the Front Contract Weight on calendar date $(date)$;

w_{date}^B is the Back Contract Weight on calendar date $(date)$;

$F_{date_2}^{F,date_1}$ is the Reference Level on calendar date $(date_2)$ of the Front Futures Contract in respect of calendar date $(date_1)$;

$F_{date_2}^{B,date_1}$ is the Reference Level on calendar date $(date_2)$ of the Back Futures Contract in respect of calendar date $(date_1)$; and

MM_{date} (i) has a constant value of 1 if the Strategy Return Type is "Excess Return", or (ii) is the Reference Level of the Money Market Index in the Strategy Currency on calendar date $(date)$ if the Strategy Return Type is "Total Return".

If the Strategy Value Floor (as specified in the Strategy Supplement) is applicable and the Strategy Value in respect of a Strategy Business Day would be zero or less than zero, then the Strategy Value in respect of such Strategy Business Day and all following Strategy Business Days shall be zero. If the Strategy Value Floor is not specified to be applicable then the Strategy Value of a Strategy may be a negative value.

If on any Strategy Business Day, the Excess Return Value or the Strategy Value is zero or a negative value, then no further Strategy Rebalancing Day or Cash Rebalancing Day will occur on or after such a day.

Cash Rebalancing Day	Each Strategy Business Day from and including the Strategy Inception Date.
Nearby Futures Contract	The "**0^{th} Nearby Futures Contract"** with respect to a Strategy Business Day is the Futures Contract with the latest Futures Contract Selection Date which falls on or before such day. The "**n^{th} Nearby Futures Contract"**, where n is a number greater than zero, is the Futures Contract with the earliest Futures Contract Selection Date which falls strictly after the Futures Contract Selection Date of the $(n-1)^{th}$ Nearby Futures Contract.

4. Risk Factors

Risk factors relating to a synthetic investment in the Strategies are set out below. This section does not purport to describe all of the risks associated with a synthetic investment in the Strategies. Risk factors in relation to a transaction or product which is linked to the performance of the Strategies may also be set out in the relevant documents in respect of such transaction or product. In addition, investors should review carefully the risk factors in the Common Strategy Terms and any risk factors specific to a Strategy as out in the Strategy Supplement for a Strategy.

The Rolling Methodology of the Futures Contracts and Other Factors May Have a Negative Impact on the Value of a Strategy

Each Strategy is designed to provide investors with a synthetic exposure to the performance of certain Futures Contracts by notionally entering into, and then rolling, two Futures Contracts.

The relevant underlying asset of the Futures Contracts may fluctuate in value quite differently from the performance of the Futures Contracts due to losses or gains that may arise from the rolling. In addition, the rolling methodology may be disclosed, and such disclosure may result in market activity that could adversely affect the value of a Strategy.

Hedging Activity by Goldman Sachs International By Way of Active Trades In Futures Contracts Underlying a Strategy Index May Have a Detrimental Impact on the Value of a Strategy

Goldman Sachs International may hedge its exposure to a Strategy, including by actively trading in the Futures Contracts underlying a Strategy. Such activities may be particularly frequent during, but are not necessarily confined to, periods in which Goldman Sachs International's exposure fluctuates as a result of either the rebalancing methodologies used by the Strategy, or the rolling of Futures Contracts in accordance with the methodology of a Strategy. The market for the Futures Contracts which are tracked by a Strategy Index may have limited liquidity. Trading by Goldman Sachs International in the Futures Contracts underlying a Strategy Index may negatively affect the value of a Strategy.

Sponsors of the underlying assets of Futures Contracts included in a Strategy Have Authority to Make Determinations That Could Materially Affect the Value of a Strategy

Determinations that the sponsors and operators of the underlying assets of the Futures Contracts included in a Strategy may make in connection with the composition, calculation and maintenance of this underlying asset may materially affect the values of the Futures Contracts and, in turn, the value of a Strategy. Those sponsors and operators have no obligation to take the interests of Goldman Sachs International or any holders of investments linked to a Strategy into consideration for any reason in carrying out their functions and have generally disclaimed all liability to the extent permitted by law.

In addition, sponsors of such underlying assets may have licensed, and may continue to license, their underlying assets for use by other market participants, for publication in newspapers and periodicals, for distribution by information and data dissemination services and for various other purposes, any of which may contribute to an increased level of investment in these indices, which could affect the value of the Futures Contracts and, in turn, the value of a Strategy.

The Strategy May Provide Exposure to Stock Markets in Emerging Markets, Which Are Subject to Special Risks

The Strategy may provide exposure, although indirect, to the stock markets in emerging markets. Political and economic structures in countries with emerging economies or stock markets may be undergoing or may undergo significant evolution and rapid development, and such countries may lack the social, political, economic and regulatory stability of more developed countries including, without limitation, a significant risk of currency value fluctuation or inflation, change in law or regulations or change in the interpretation of law and regulations or the implementation of policies. Such instability may result from, among other things, authoritarian governments, or military involvement in political and economic decision-making, including changes or attempted changes in governments through extra-constitutional or constitutional means; popular unrest associated with demands for improved political, economic, social or regulatory conditions; internal insurgencies; hostile relations with neighboring countries; and ethnic, religious and racial disaffections or conflict. Certain of such countries may have in the past failed to recognize private property rights and may have at times nationalized or expropriated the assets of private companies or significantly restricted the direct or indirect investment by foreign entities. As a result, the risks from investing in those countries, including, without limitation, the risks of nationalization, expropriation or forced divestiture of assets, may be heightened. In addition, unanticipated political, social, economic or regulatory developments may affect the values or liquidity of investments in those countries. In addition, any change in the law or regulations or any change in the interpretation of law or regulations or the implementation of policies may impact the availability of replacement assets in the event any relevant underlying security is discontinued, cancelled, terminated, delisted or otherwise ceased to exist. Furthermore, the small size and inexperience of the securities markets in certain countries and the limited volume of trading in securities may make an investment in those countries illiquid and more volatile than investments in more established markets. There may be little financial or accounting information available with respect to local issuers, and it may be difficult as a result to assess the value or prospects of an investment in one of these issuers. All of these factors may have an effect on the value of a Strategy providing exposure to stock markets in emerging markets.

Appendix 3

The European Equity Futures Rolling Strategy Index

A. Additional Risk Factors

The European Equity Futures Rolling Strategy Index Relies on the Use of Third Party Information

The European Equity Futures Rolling Strategy Index relies on information published by the reference exchange specified in the table under “Overview of the Underlying Assets” in the relevant Strategy Supplement. The respective index calculation agents and Goldman Sachs International as the sponsor of the European Equity Futures Rolling Strategy Index make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the European Equity Futures Rolling Strategy Index.

The European Equity Futures Rolling Strategy Index Is Not Actively Managed

The European Equity Futures Rolling Strategy Index operates in accordance with a set of pre-determined rolling methodology and formulae and its index calculation agent does not exercise any discretion with respect to the European Equity Futures Rolling Strategy Index. The European Equity Futures Rolling Strategy Index is, therefore, not managed. Goldman Sachs International as the sponsor of the European Equity Futures Rolling Strategy Index is not acting as an investment adviser or performing a discretionary management role with respect to the European Equity Futures Rolling Strategy Index and, as a result, has no fiduciary duty to any person in respect of the European Equity Futures Rolling Strategy Index.

The European Equity Futures Rolling Strategy Index Procures No Rights with Respect to the Underlying Futures Contracts

The investment exposure provided by the European Equity Futures Rolling Strategy Index is synthetic. An investment linked to the European Equity Futures Rolling Strategy Index will therefore not make an investor a holder of, or give an investor a direct investment position in, any futures contracts underlying the European Equity Futures Rolling Strategy Index.

The Index Calculation Agent Is Contractually Required to Publish a Level for the European Equity Futures Rolling Strategy Index Even if the Price of Underlying Futures Contracts Is Unavailable or Disrupted

If the price of an underlying futures contract is unavailable, or a market disruption event has occurred or is continuing on any given exchange business day, the index calculation agent is nonetheless contractually required to calculate and publish a value based on pre-determined valuation rules. As further described above in the Strategy Description, in those circumstances the Strategy Calculation Agent may, however, delay the volatility or basket rebalancing of the Strategy and use replacement values that may be different from, and higher or lower than, the level of the European Equity Futures Rolling Strategy Index as calculated by the index calculation agent.

The Goldman Sachs Group, Inc. May Create and Publish Indices Similar to the European Equity Futures Rolling Strategy Index

The Goldman Sachs Group, Inc. may in the future create and publish other indices, the concepts of which are similar, or identical, to those of the European Equity Futures Rolling Strategy Index.

The levels being published on the Bloomberg page of the European Equity Futures Rolling Strategy Index (or any successor pages), however, are the only levels that will be used for the calculation of the Strategy, subject to limited exceptions where the level is disrupted. Accordingly, no other published indices (if any) on the futures contracts underlying the European Equity Futures Rolling Strategy Index should be treated as the levels of the European Equity Futures Rolling Strategy Index, even where the concepts of such indices are similar, or identical, to those of the European Equity Futures Rolling Strategy Index.

B. Additional Market Disruption Events

N/A

C. Summary Description

The following overview of the European Equity Futures Rolling Strategy Index is a summary and, as such, is necessarily incomplete. This overview should be read in conjunction with, and is qualified in its entirety by, the more detailed description of the European Equity Futures Rolling Strategy Index and its operation that follows in this document.

The European Equity Futures Rolling Strategy Index (the "**European Equity Futures Strategy Index**" or the "**Index**") is a proprietary index designed to provide investors with exposure to the total return (including income from interest accruing at the relevant overnight interest rate (as described below)) of **"European Equity Futures Contracts**" on the Dow Jones EURO STOXX 50® Index currently listed for trading on the Eurex Exchange (the "**Eurex**"). For further information on the European Equity Futures Contracts and the Dow Jones EURO STOXX 50® Index, please see the sections below entitled "Dow Jones EURO STOXX 50® Index Futures Contracts" and "The Dow Jones EURO STOXX 50® Index".

Each European Equity Futures Contract expires on a specific quarter end date (one of March, June, September or December). At any given time, there is more than one European Equity Futures Contract listed on the Eurex (for example, with expirations of September 2014, December 2014 and March 2015), and the Index will include the first nearby European Equity Futures Contract that has not reached expiration or a roll period (the September 2014 contract in the example). As the first nearby European Equity Futures Contract comes to its expiration at the end of the relevant month, it will be replaced by the next European Equity Futures Contract (December 2014 in our example), which is known as the second nearby futures contract. This replacement process is referred to as "rolling". Rolling will be carried out during the three Eurex exchange business days starting from, and including, the third to last Eurex exchange business day prior to the last trade date of the expiring European Equity Futures Contract (*i.e.*, the third to last Eurex exchange business day prior to the third Friday of the expiration month) to, and including, the last Eurex exchange business day prior to the last trade date of such expiring European Equity Futures Contract. Such period is referred to as the "**roll period**". For further information on the roll methodology, please refer to the section entitled "Roll Methodology" below.

The Index is calculated in euros on a total return basis and the value of the Index (the "**Index Value**") is calculated on each Eurex exchange business day (as defined in "Daily Strategy Value Calculation").

Goldman Sachs International (the "**Index Sponsor**") has retained STOXX Limited to serve as calculation agent (the "**Calculation Agent**") for the Index. In the event the Index Committee (as described below) appoints a replacement Calculation Agent, a public announcement will be made via press release.

Unless otherwise indicated, any public announcement contemplated by this Methodology shall be posted at:

http://www.goldmansachsindices.com or any successor website

We are not incorporating by reference such website or any other website or any materials from any website into this index methodology.

European Equity Futures Strategy Index – Various Roles

The European Equity Futures Strategy Index is sponsored by Goldman Sachs International but is calculated by the Calculation Agent. The European Equity Futures Strategy Index operates in accordance with a pre-determined rolling methodology and set of formulae and the Calculation Agent does not exercise any discretion with respect thereto except in limited cases where a European Equity Futures Contract Valuation Price is not published or otherwise unavailable. The European Equity Futures Strategy Index is, therefore, not a managed index. As the Index Sponsor, Goldman Sachs International is not acting as an investment adviser or performing a discretionary management role with respect to the European Equity Futures Strategy Index and, as a result, has no fiduciary duty to any person in respect of the European Equity Futures Strategy Index. The Index Committee may exercise discretion, however, in a limited number of exceptional circumstances, including, without limitation, where the Dow Jones EURO STOXX 50® Index is rebased or otherwise adjusted or modified or where a European Equity Futures Contract Valuation Price is not published or otherwise unavailable.

European Equity Futures Strategy Index Starting Value

The European Equity Futures Strategy Index has been given a starting value of 100 as of December 31, 1991, which is the base date ("**Base Date**").

Daily Strategy Value Calculation

The European Equity Futures Strategy Index is a euro denominated index and is calculated on each day on which the Eurex is open for trading (a "**Eurex exchange business day**"). The value of the European Equity Futures Strategy Index on each Eurex exchange business day will be calculated as the *product* of (i) the value of the European Equity Futures Strategy Index as of the immediately preceding Eurex exchange business day *multiplied* by (ii) the *sum* of (x) the daily return ratio of the value of the European Equity Futures Contracts (calculated as described below) on such Eurex exchange business day *plus* (y) the overnight interest rate for the immediately preceding Eurex exchange business day *multiplied* by the applicable day count fraction based on the number of calendar days in the calculation period.

Daily Return Ratio of the Value of the European Equity Futures Contracts: On each Eurex exchange business day (other than during the roll period as described below), the daily return ratio of the value of European Equity Futures Contracts is calculated as the *quotient* of (a) the European Equity Futures Contract Valuation Price on the relevant Eurex exchange business day *divided* by (b) the European Equity Futures Contract Valuation Price on the immediately preceding Eurex exchange business day. During each roll period, the daily return ratio of the values of the European Equity Futures Contracts is calculated as the *quotient* of (a) the European Equity Futures Contract Valuation Price of the second nearby European Equity Futures Contract on such Eurex exchange business day *divided* by (b) the European Equity Futures Contract Valuation Price of the second nearby European Equity Futures Contract on the immediately preceding Eurex exchange business day, rather than the first nearby European Equity Futures Contract to the extent the Index's investment has been rolled over.

European Equity Futures Contract Valuation Price: The European Equity Futures Contract Valuation Price on each Eurex exchange business day is the official daily settlement price per European Equity Futures Contract published by Eurex on such Eurex exchange business day.

Overnight Interest Rate: The overnight interest rate used for purposes of calculating the value of the European Equity Futures Strategy Index is the overnight interest rate as published on Reuters page EUR-EONIA-OIS-COMPOUND on EONIA RSF.REC.EONIA=.NaE, which follows the ACT/360 day count fraction convention meaning the actual number of days in the relevant period divided by 360. If this overnight interest rate is not published or is otherwise unavailable for any Eurex exchange business day, then the last available overnight interest rate published on such page will be used as the overnight interest rate for such Eurex exchange business day.

Unavailability of European Equity Futures Contract Valuation Price: The Calculation Agent will not, however, calculate the value of the European Equity Futures Strategy Index, or will calculate such value pursuant to a different methodology (as described below under "Price of European Equity Futures Contracts Unavailable – Unavailable Within the Roll Period"), as the case may be, at any time where the European Equity Futures Contract Valuation Price for the first nearby and/or the second nearby European Equity Futures Contracts, as applicable, is not published or is otherwise unavailable as further described below.

Publication of Changes to the Methodology

Changes to the Methodology made by the Index Committee will be publicly announced at least 60 Eurex exchange business days prior to their effective date. Adjustments made by the Calculation Agent in response to the unavailability of the European Equity Futures Contract Valuation Price will be publicly announced as promptly as is reasonably practicable.

Index Committee

An Index Committee is responsible for overseeing the Index and the Methodology, while the Calculation Agent is responsible for the day to day implementation of the Methodology, for the calculation of the Index, including responding to events as described under "Price of European Equity Futures Contracts Unavailable", and for publication of the Index Value. The Index Committee is committed to maintaining the Index as a liquid, tradable index. The Index Committee is currently comprised of three full-time employees of The Goldman Sachs Group, Inc. or one or more of its affiliates.

The Index Committee may exercise limited discretion with respect to the Index, as contemplated by the Methodology. Any such changes or actions are publicly announced as promptly as is reasonably practicable and normally at least five Eurex exchange business days prior to their effective date. The Calculation Agent may from time to time consult the Index Committee on matters of interpretation with respect to the Methodology and when the price of the European Equity Futures Contracts are unavailable. 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, are confidential. The Index Committee will determine the successor of any of its members.

Roll Methodology

Each European Equity Futures Contract has an expiration on specified quarter end dates (March, June, September or December). At any given time, the European Equity Futures Strategy Index will include the first nearby European Equity Futures Contract. As the first nearby European Equity Futures Contract comes to expiration, it is replaced by the second nearby European Equity Futures Contract. For example, a European Equity Futures Contract may specify a June expiration. As time passes, the contract expiring in June is replaced by a European Equity Futures Contract with a September expiration during the relevant "roll" period. This process is referred to as "rolling".

Roll Period: Rolling will be carried out during the three Eurex exchange business days starting from, and including, the fourth to last Eurex exchange business day prior to the last trading date of the first nearby European Equity Futures Contract to, and including, the second to last Eurex exchange business day prior to the last trading date of such European Equity Futures Contract. Such period is referred to from time to time as the "roll period". On each Eurex exchange business day of the roll period, one third of the notional investment in the first nearby European Equity Futures Contract will be rolled into the second nearby European Equity Futures Contract, and the prices at which the European Equity Futures Contracts are rolled will be based on the European Equity Futures Contract Valuation Prices for each of the first nearby and second nearby European Equity Futures Contracts. Rolling will, however, be carried out pursuant to a different methodology when at any time during the roll period the European Equity Futures Contract Valuation Prices for either or both of the first nearby and second nearby European Equity Futures Contracts are not published or are otherwise unavailable as further described below.

Price of European Equity Futures Contracts Unavailable

Unavailable Outside of the Roll Period: If, on any Eurex exchange business day that does not fall within the roll period, the European Equity Futures Contract Valuation Price for the first nearby European Equity Futures Contract is not published or is otherwise unavailable, then the Calculation Agent will not calculate any value for the European Equity Futures Strategy Index but will publish the last available value.

In such an instance, if, on the immediately following Eurex exchange business day, the European Equity Futures Contract Valuation Price for the first nearby European Equity Futures Contract is available, the daily return ratio of the value of the European Equity Futures Contracts will be calculated as the *quotient* of (a) the European Equity Futures Contract Valuation Price on that immediately following Eurex exchange business day *divided* by (b) the last available European Equity Futures Contract Valuation Price; *provided, however*, that, for the avoidance of doubt, if such immediately following Eurex exchange business day is the first day of the roll period and the European Equity Futures Contract Valuation Price for the second nearby European Equity Futures Contract is not published or is otherwise unavailable on that immediately following Eurex exchange business day, then, as further described below, the Calculation Agent will not calculate any value for the European Equity Futures Strategy Index but will publish the last available value; and, in addition, if such Eurex exchange business day is the last trading day of the first nearby European Equity Futures Contract on which, in derogation of the rolling methodology described above, rolling of any remaining portion of the notional investment in the first nearby European Equity Futures Contract takes place pursuant to the alternative rolling methodology described below in the sub-section entitled "*Unavailable Within the Roll Period*", then the Calculation Agent will apply the alternative calculation methodology summarized in such sub-section.

Unavailable Within the Roll Period: If the European Equity Futures Contract Valuation Price is not published or is otherwise unavailable for either or both of the first nearby and second nearby European Equity Futures Contracts at any time during the roll period, then that rolling will be carried out pursuant to the following alternative rolling methodology:

- **Case 1:** If (a) the European Equity Futures Contract Valuation Price is not published or is otherwise unavailable on <u>the first Eurex exchange business day of the roll period</u> for either or both of the first nearby and second nearby European Equity Futures Contracts *and* (b) the European Equity Futures Contract Valuation Price is available on the second Eurex exchange business day of the roll period for both the first nearby and second nearby European Equity Futures Contracts, then:

- one half of the notional investment in the first nearby European Equity Futures Contract will be rolled into the second nearby European Equity Futures Contract on that second exchange business day of the roll period; *and*

- if the European Equity Futures Contract Valuation Price is also available on the third Eurex exchange business day of the roll period for both the first nearby and second nearby European Equity Futures Contracts, the second half of the notional investment in the first nearby European Equity Futures Contract will be rolled over into the second nearby European Equity Futures Contract on that third Eurex exchange business day of the roll period; *but*

- if the European Equity Futures Contract Valuation Price is not published or is otherwise unavailable on such third Eurex exchange business day of the roll period for either or both of the first nearby and second nearby European Equity Futures Contracts, then rolling of any remaining portion of the notional investment in the first nearby European Equity Futures Contract will be carried out as set out below under Case 4.

- **Case 2:** If the European Equity Futures Contract Valuation Price is not published or is otherwise unavailable on both the first and second Eurex exchange business days of the roll period for either or both of the first nearby and second nearby European Equity Futures Contracts, then:

  - if the European Equity Futures Contract Valuation Price is available on the third Eurex exchange business day of the roll period for both the first nearby and second nearby European Equity Futures Contracts, then the entire notional investment in the first nearby European Equity Futures Contract will be rolled into the second nearby European Equity Futures Contract on the third Eurex exchange business day of the roll period; *but*

  - otherwise, the rolling of any remaining portion of the notional investment in the first nearby European Equity Futures Contract will be carried out as set out below under Case 4.

- **Case 3:** If the European Equity Futures Contract Valuation Price is available on the first Eurex exchange business day of the roll period for both the first nearby and second nearby European Equity Futures Contracts (on which day one-third of the notional investment in the first nearby European Equity Futures Contract is rolled over into the second nearby European Equity Futures Contract), but the European Equity Futures Contract Valuation Price is not published or is otherwise unavailable on the second Eurex exchange business day of the roll period for either or both of the first nearby and second nearby European Equity Futures Contracts, then the remaining two-thirds of the notional investment in the first nearby European Equity Futures Contract will be rolled into the second nearby European Equity Futures Contract on the third Eurex exchange business day of the roll period, *unless* the European Equity Futures Contract Valuation Price is not published or is otherwise unavailable on such third Eurex exchange business day of the roll period for either or both of the first nearby and second nearby European Equity Futures Contracts (in which case the rolling of any remaining portion of the notional investment in the first nearby European Equity Futures Contract will be carried out as set out below under Case 4).

- **Case 4:** In any situation where the European Equity Futures Contract Valuation Price for either or both of the first nearby and second nearby European Equity Futures Contracts is not published or is otherwise unavailable on the third Eurex exchange business day of the roll period (including where such price is not published or is otherwise unavailable on both the first and third Eurex exchange business days of the roll period only, on both the second and third Eurex exchange business days of the roll period only or on all three Eurex exchange business days of the roll period), then any remaining amount of the notional investment in the first nearby European Equity Futures Contract will be rolled into the second nearby European Equity Futures Contract on the Eurex exchange business day immediately following the third Eurex exchange business day of the roll period. On such Eurex exchange business day, rolling will be effected by using the first nearby European Equity Futures Contract Valuation Price and the second nearby European Equity Futures Contract Valuation Price, provided that if either or both of such European Equity Futures Contract Valuation Prices is not published or is otherwise unavailable on such Eurex exchange business day, then no rolling will be effected on such day and the entire remaining amount of the notional investment in the first nearby European Equity Futures Contract will be rolled into the second nearby European Equity Futures Contract on the last trading date of the first nearby European Equity Futures Contract, which is the second Eurex exchange business day following the third Eurex exchange business day of the roll period. On such last trading date, rolling will be effected by using the first traded prices for the first nearby European Equity Futures Contract and the second nearby European Equity Futures Contract, provided that if, on such last trading date, the first traded price for the first nearby European Equity Futures Contract and/or the second nearby European Equity Futures Contract is not published or is otherwise unavailable, then the first nearby European Equity Futures Contract will be sold at the European Equity Futures Contract Valuation Price for such first nearby European Equity Futures Contract on the last reference day (as defined below) and the second nearby European Equity Futures Contract will be bought at the European Equity Futures Contract Valuation Price for such second nearby European Equity Futures Contract on the last reference day.

On each Eurex exchange business day on which rolling does not occur because the European Equity Futures Contract Valuation Price is not published or is otherwise unavailable for either or both of the first nearby and second nearby European Equity Futures Contracts (such day, an "Equity no-roll Eurex exchange business day"; for the avoidance of doubt, an Equity no-roll Eurex exchange business day may include any Eurex exchange business day of the roll period and the Eurex exchange business day immediately following the third Eurex exchange business day of the roll period), the Calculation Agent will not calculate any value for the European Equity Futures Strategy Index but will publish the last available value.

If, on any Eurex exchange business day immediately following such Equity no-roll Eurex exchange business day, the European Equity Futures Contracts are rolled over pursuant to the alternative methodology described above, then the Calculation Agent will apply alternative calculation methods to compute the level of the European Equity Futures Strategy Index on such Eurex exchange business day, which can be summarized as follows:

On such Eurex exchange business day immediately following such Equity no-roll Eurex exchange business day, the level of the European Equity Futures Strategy Index will be computed as the *product* of:

- the value of the European Equity Futures Strategy Index as of the last Eurex exchange business day on which the European Equity Futures Contract Valuation Prices for both of the first nearby and second nearby European Equity Futures Contracts were available (such day, the "last reference day"); *multiplied* by

- the *sum* of:

  (i) the *daily return ratio* reflecting either:

    (a) if such Eurex exchange business day falls within the roll period or is the Eurex exchange business day immediately following the third Eurex exchange business day of the roll period, the weighted performance of the first nearby European Equity Futures Contract and the weighted performance of the second nearby European Equity Futures Contract from the last reference day to such Eurex exchange business day; or

    (b) if such Eurex exchange business day is the last trading date of the first nearby European Equity Futures Contract, the *product* of (x) the weighted performance of the first nearby European Equity Futures Contract from the last reference day up to the rolling effected as of the opening of the market on such last trading date, (y) the weighted performance of the second nearby European Equity Futures Contract from the last reference day up to the rolling effected as of the opening of the market on such last trading date and (z) the performance of the second nearby European Equity Futures Contract, including the second nearby contracts into which any remaining portion of the first nearby European Equity Futures Contract are rolled over on such last trading date, calculated based on the opening price and the official daily settlement price of the second nearby European Equity Futures Contract on such last trading date (for the avoidance of doubt, if the official daily settlement price of the second nearby European Equity Futures Contract is not published or is otherwise unavailable on such last trading date, then the Calculation Agent will not calculate any value for the European Equity Futures Strategy Index but will publish the last available value),

  plus

  (ii) the overnight interest rate for the calculation period.

Publication

The value of the European Equity Futures Strategy Index is published on the Bloomberg page FRSIEUE <Index> (or any successor page).

Historical Data

The Base Date for the Index is a date earlier than that on which the Calculation Agent began calculating the Index. Therefore, historical information provided from the Base Date to the date on which the Calculation Agent began calculating the index 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 Base Date using the Methodology. This data does not reflect actual performance, nor was a contemporaneous investment model run of the Index.

Historical levels of the Index are calculated with reference to the European Equity Futures Contract Valuation Prices determined based on the latest available data published by the Eurex.

European Equity Futures Strategy Index Calculation Formulae

The formulae for the calculation of the European Equity Futures Strategy Index are presented below. Investors, however, should be aware that these formulae do not reflect the alternative rolling and calculation methodologies applied when the value of the relevant European Equity Futures Contracts is not published or is otherwise unavailable (as further described above).

$$TRI_t = (r_t + \frac{i_{t\text{-}n}}{360} \cdot n)\, TRI_{t-n};$$

$$\begin{cases} r_t = \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}}, \\ \text{when NOT in the 3-day roll period} \\ r_t = (1 - \dfrac{m-1}{3}) \cdot \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}} + \dfrac{m-1}{3} \cdot \dfrac{{}_cP_{2,t}}{{}_cP_{2,t-n}} \\ \text{when on the } \mathrm{m}^{\mathrm{th}} \text{ day of the roll period, } \mathrm{m} = 1, 2, 3 \end{cases}$$

Where

t = The relevant Eurex exchange business day;

TRI_t = The value of European Equity Futures Strategy Index as of day t;

$i_{t\text{-}n}$ = Overnight interest rate as of (t - n);

n = The number of actual calendar days between t and the immediately preceding Eurex exchange business day (t - n);

r_t = Daily price return of the value of the European Equity Futures Contracts on t;

${}_cP_{1,t}$ = European Equity Futures Contract Valuation Price of the first nearby European Equity Futures Contract on t; *provided* that, for the avoidance of doubt, once the rolling has been effected in accordance with the above roll methodology and there is no remaining amount to be rolled, the first nearby European Equity Futures Contract shall mean the European Equity Futures Contracts into which the notional investment has been rolled; and

${}_cP_{2,t}$ = European Equity Futures Contract Valuation Price of the second nearby European Equity Futures Contract on t.

Note: All calculations are based on seven significant figures (rounded at the eighth significant figure), and the value is published up to two decimal places (rounded at the third decimal place).

Adjustment; Rebasement

Investors should be aware that if the terms of the European Equity Futures Contracts are modified or the Dow Jones EURO STOXX 50® Index is rebased or otherwise adjusted or modified, the Index Committee may take such steps as it considers appropriate in response to such modification, rebasement or adjustment.

THE DOW JONES EURO STOXX 50® INDEX FUTURES CONTRACTS

The Dow Jones EURO STOXX 50® Index futures contracts underlying the European Equity Futures Strategy Index are contracts (with maturities as defined by the reference exchange) to buy or sell standardized trading "units". At the time the European Equity Futures Strategy Index invests in them, the futures contracts will have a term to maturity as defined by the reference exchange. One trading unit of Dow Jones EURO STOXX 50® Index futures contracts equals €10 *multiplied* by the Dow Jones EURO STOXX 50® Index (price return version). The Dow Jones EURO STOXX 50® Index futures contract closest to expiration at any given time is known as the "first nearby" futures contract, and the Dow Jones EURO STOXX 50® Index futures contract that is second closest to expiration at any given time is known as the "second nearby" futures contract.

THE DOW JONES EURO STOXX 50® INDEX

The Dow Jones EURO STOXX 50® Index is a capitalization-weighted index of 50 European blue-chip companies. The index was developed with a base level of 1,000 as of December 31, 1991. The index represents the Eurozone portion of the Dow Jones STOXX Total Market Index.

The index is calculated in accordance with the Laspeyres formula, which measures price changes against a fixed base quantity weight. The index is weighted by free-float market capitalization. Each index component weight is capped at 10% of the index's total free-float market capitalization. Weights are reviewed quarterly.

The index composition is reviewed annually in September. Within each of the 18 Dow Jones EURO STOXX Supersector indices, the respective index component stocks are ranked by free-float market capitalization. The largest stocks are added to the selection list until the coverage is close to, but still less than, 60% of the free-float market capitalization of the corresponding Dow Jones EURO STOXX TMI Supersector index. If the next-ranked stock brings the coverage closer to 60% in absolute terms, then it is also added to the selection list. Any remaining stocks that are current Dow Jones EURO STOXX 50® components are added to the selection list. The stocks on the selection list are ranked by free-float market capitalization. In exceptional cases, the STOXX Limited Supervisory Board may make additions and deletions to the selection list. The 40 largest stocks on the selection list are chosen as index components. Any remaining current components of the Dow Jones EURO STOXX 50® ranked between 41 and 60 are added as index components. If the number of index components is still below 50, then the largest stocks on the selection list are added until the index contains 50 stocks.

The index is published by STOXX Limited, a joint venture of Deutsche Börse AG, Dow Jones & Company, Inc., and the SWX group. It is calculated daily, subject to the rules of its sponsor, and is disseminated every 15 seconds to numerous public information sources. It is available on Bloomberg SX5E page.

Additional information on the Dow Jones EURO STOXX 50® Index is available at http://www.stoxx.com. Neither this website nor any of the material it includes is incorporated by reference herein.

Licensing Information

Goldman Sachs International is the sole licensing agent for the Index. Questions about licensing the Index can be directed to the individuals listed under "Contact Information" below.

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The Index relies on information published by the exchange regarding the price of the European Equity Futures Contracts as well as other matters. The Calculation Agent and Index Sponsor make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the European Equity Futures Strategy Index.

Appendix 4
The Japanese Equity Futures Rolling Strategy Index

A. Additional Risk Factors

The Japanese Equity Futures Rolling Strategy Index Relies on the Use of Third Party Information

The Japanese Equity Futures Rolling Strategy Index relies on information published by the reference exchange specified in the table under “Overview of the Underlying Assets” in the relevant Strategy Supplement. The respective index calculation agents and Goldman Sachs International as the sponsor of the Japanese Equity Futures Rolling Strategy Index make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the Japanese Equity Futures Rolling Strategy Index.

The Japanese Equity Futures Rolling Strategy Index Is Not Actively Managed

The Japanese Equity Futures Rolling Strategy Index operates in accordance with a set of pre-determined rolling methodology and formulae and its index calculation agent does not exercise any discretion with respect to the Japanese Equity Futures Rolling Strategy Index. The Japanese Equity Futures Rolling Strategy Index is, therefore, not managed. Goldman Sachs International as the sponsor of the Japanese Equity Futures Rolling Strategy Index is not acting as an investment adviser or performing a discretionary management role with respect to the Japanese Equity Futures Rolling Strategy Index and, as a result, has no fiduciary duty to any person in respect of the Japanese Equity Futures Rolling Strategy Index.

The Japanese Equity Futures Rolling Strategy Index Procures No Rights with Respect to the Underlying Futures Contracts

The investment exposure provided by the Japanese Equity Futures Rolling Strategy Index is synthetic. An investment linked to the Japanese Equity Futures Rolling Strategy Index will therefore not make an investor a holder of, or give an investor a direct investment position in, any futures contracts underlying the Japanese Equity Futures Rolling Strategy Index.

The Index Calculation Agent Is Contractually Required to Publish a Level for the Japanese Equity Futures Rolling Strategy Index Even if the Price of Underlying Futures Contracts Is Unavailable or Disrupted

If the price of an underlying futures contract is unavailable, or a market disruption event has occurred or is continuing on any given exchange business day, the index calculation agent is nonetheless contractually required to calculate and publish a value based on pre-determined valuation rules. As further described above in the Strategy Description, in those circumstances the Strategy Calculation Agent may, however, delay the volatility or basket rebalancing of the Strategy and use replacement values that may be different from, and higher or lower than, the level of the Japanese Equity Futures Rolling Strategy Index as calculated by the index calculation agent.

The Goldman Sachs Group, Inc. May Create and Publish Indices Similar to the Japanese Equity Futures Rolling Strategy Index

The Goldman Sachs Group, Inc. may in the future create and publish other indices, the concepts of which are similar, or identical, to those of the Japanese Equity Futures Rolling Strategy Index.

The levels being published on the Bloomberg page of the Japanese Equity Futures Rolling Strategy Index (or any successor pages), however, are the only levels that will be used for the calculation of the Strategy, subject to limited exceptions where the level is disrupted. Accordingly, no other published indices (if any) on the futures contracts underlying the Japanese Equity Futures Rolling Strategy Index should be treated as the levels of the Japanese Equity Futures Rolling Strategy Index, even where the concepts of such indices are similar, or identical, to those of the Japanese Equity Futures Rolling Strategy Index.

B. Additional Market Disruption Events

N/A

C. Summary Description

The following overview of the Japanese Equity Futures Rolling Strategy Index is a summary and, as such, is necessarily incomplete. This overview should be read in conjunction with, and is qualified in its entirety by, the more detailed description of the Japanese Equity Futures Rolling Strategy Index and its operation that follows in this document.

The Japanese Equity Futures Rolling Strategy Index (the "**Japanese Equity Futures Strategy Index**" or the "**Index**") is a proprietary index designed to provide investors with exposure to the total return (including income from interest accruing at the relevant overnight interest rate (as described below)) of "**Japanese Equity Futures Contracts**" on the TOPIX® Stock Price Index currently listed for trading on the Osaka Securities Exchange (the "**OSE**"). For further information on the Japanese Equity Futures Contracts and the TOPIX® Stock Price Index, please refer to the sections below entitled "Japanese Equity Futures Contracts" and "The TOPIX® Stock Price Index".

Each Japanese Equity Futures Contract expires on a specific quarter end date (one of March, June, September or December). At any given time, there is more than one listed Japanese Equity Futures Contract on the OSE (for example, with expirations of September 2014, December 2014, March 2015, June 2015 and September 2015), and the Index will include the first nearby Japanese Equity Futures Contract that has not reached expiration or a roll period (the September 2014 contract in the example). As the first nearby Japanese Equity Futures Contract comes to its expiration, it will be replaced by the next Japanese Equity Futures Contract (December 2014 in our example), which is known as the second nearby futures contract. Rolling will be carried out during the three exchange business days starting from, and including, the third to last exchange business day prior to the special quotation date (as described below) of the first nearby Japanese Equity Futures Contract to, and including, the last exchange business day prior to the special quotation date of such Japanese Equity Futures Contract. Such period is referred to as the "**roll period**". For further information on the roll methodology, please refer to the section entitled "Roll Methodology" below.

The Index is calculated in Japanese yen on a total return basis and the value of the Index (the "**Index Value**") is calculated on each exchange business day (as defined in "Daily Strategy Value Calculation").

Goldman Sachs International (the "**Index Sponsor**") has retained S&P Opco, LLC (a subsidiary of S&P Dow Jones Indices LLC) to serve as calculation agent (the "**Calculation Agent**") for the Index. In the event the Index Committee (as described below) appoints a replacement Calculation Agent, a public announcement will be made via press release.

Unless otherwise indicated, any public announcement contemplated by this Methodology shall be posted at:

http://www.goldmansachsindices.com or any successor website

We are not incorporating by reference such website or any other website or any materials from any website into this index methodology.

Japanese Equity Futures Strategy Index – Various Roles

The Japanese Equity Futures Strategy Index is sponsored by Goldman Sachs International but is calculated by the Calculation Agent. The Japanese Equity Futures Strategy Index operates in accordance with a pre-determined rolling methodology and set of formulae and the Calculation Agent, does not exercise any discretion with respect thereto except in limited cases where a Japanese Equity Futures Contract Valuation Price is not published or otherwise unavailable. The Japanese Equity Futures Strategy Index is, therefore, not a managed index. As the Index Sponsor, Goldman Sachs International is not acting as an investment adviser or performing a discretionary management role with respect to the Japanese Equity Futures Strategy Index and, as a result, has no fiduciary duty to any person in respect of the Japanese Equity Futures Strategy Index. The Index Committee may exercise discretion, however, in a limited number of exceptional circumstances, including, without limitation, where the TOPIX® Stock Price Index is rebased or otherwise adjusted or modified or where a Japanese Equity Futures Contract Valuation Price is not published or otherwise unavailable.

Japanese Equity Futures Strategy Index Starting Value

The Japanese Equity Futures Strategy Index has been given a starting value of 100 as of December 30, 1991, which is the base date ("**Base Date**").

Daily Strategy Value Calculation

The Japanese Equity Futures Strategy Index is a Japanese yen denominated index and is calculated on each day on which the OSE is open for trading (a "**exchange business day**"). The value of the Japanese Equity Futures Strategy Index on each exchange business day will be calculated as the *product* of (i) the value of the Japanese Equity Futures Strategy Index as of the immediately preceding exchange business day *multiplied* by (ii) the *sum* of (x) the daily return ratio of the value of the Japanese Equity Futures Contracts (calculated as described below) on such exchange business day *plus* (y) the overnight interest rate for the immediately preceding exchange business day *multiplied* by the applicable day count fraction based on the number of calendar days in the calculation period.

Daily Return Ratio of the Value of the Japanese Equity Futures Contracts: On each exchange business day (other than during the roll period as described below), the daily return ratio of the value of Japanese Equity Futures Contracts is calculated as the *quotient* of (a) the Japanese Equity Futures Contract Valuation Price on the relevant exchange business day *divided* by (b) the Japanese Equity Futures Contract Valuation Price on the immediately preceding exchange business day. During each roll period, the daily return ratio of the values of the Japanese Equity Futures Contracts is calculated as the *quotient* of (a) the Japanese Equity Futures Contract Valuation Price of the second nearby Japanese Equity Futures Contract on such exchange business day *divided* by (b) the Japanese Equity Futures Contract Valuation Price of the second nearby Japanese Equity Futures Contract on the immediately preceding exchange business day, rather than the first nearby Japanese Equity Futures Contract to the extent the Index's investment has been rolled over.

Japanese Equity Futures Contract Valuation Price: The Japanese Equity Futures Contract Valuation Price on each exchange business day is the last traded price per Japanese Equity Futures Contract quoted by the OSE on such exchange business day, *provided* that, if there is a closing special quote per Japanese Equity Futures Contract quoted by the OSE (*tokubetsu kehai*), such quote shall be deemed to be the relevant Japanese Equity Futures Contract last traded price. Special quotes are mechanisms designed to prevent short-term wild price fluctuations.

Overnight Interest Rate: The overnight interest rate used for purposes of calculating the value of the Japanese Equity Futures Strategy Index is the overnight interest rate as published on Reuters page JPY-BOJ-TONAT, which follows the ACT/365 (Fixed) day count fraction convention as defined in the 2006 ISDA Definitions. If this overnight interest rate is not published or is otherwise unavailable for any exchange business day, then the last available overnight interest rate published on such page will be used as the overnight interest rate for such exchange business day.

Unavailability of Japanese Equity Futures Contract Valuation Price: The Calculation Agent will not, however, calculate the value of the Japanese Equity Futures Strategy Index, or will calculate such value pursuant to a different methodology (as described below under "Price of Japanese Equity Futures Contracts Unavailable – Unavailable Within the Roll Period"), as the case may be, at any time where the Japanese Equity Futures Contract Valuation Price for the first nearby and/or the second nearby Japanese Equity Futures Contracts, as applicable, is not published or is otherwise unavailable as further described below.

Publication of Changes to the Methodology

Changes to the Methodology made by the Index Committee will be publicly announced at least 60 exchange business days prior to their effective date. Adjustments made by the Calculation Agent in response to the unavailability of the Japanese Equity Futures Contract Valuation Price will be publicly announced as promptly as is reasonably practicable.

Index Committee

An Index Committee is responsible for overseeing the Index and the Methodology, while the Calculation Agent is responsible for the day to day implementation of the Methodology, for the calculation of the Index, including responding to events as described under "Price of Japanese Equity Futures Contracts Unavailable", and for publication of the Index Value. The Index Committee is committed to maintaining the Index as a liquid, tradable index. The Index Committee is currently comprised of three full-time employees of The Goldman Sachs Group, Inc. or one or more of its affiliates.

The Index Committee may exercise limited discretion with respect to the Index, as contemplated by the Methodology. Any such changes or actions are publicly announced as promptly as is reasonably practicable and normally at least five exchange business days prior to their effective date. The Calculation Agent may from time to time consult the Index Committee on matters of interpretation with respect to the Methodology and when the price of the Japanese Equity Futures Contracts are unavailable. 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, are confidential. The Index Committee will determine the successor of any of its members.

Roll Methodology

Each Japanese Equity Futures Contract has an expiration on specified quarter end dates (March, June, September or December). At any given time, the Japanese Equity Futures Strategy Index will include the first nearby Japanese Equity Futures Contract. As the first nearby Japanese Equity Futures Contract comes to expiration, it is be replaced by the second nearby Japanese Equity Futures Contract. For example, a Japanese Equity Futures Contract may specify a June expiration. As time passes, the contract expiring in June is replaced by a Japanese Equity Futures Contract with a September expiration during the relevant roll period. This process is referred to as “rolling”.

Roll Period: Rolling will be carried out during the three exchange business days starting from, and including, the third to last exchange business day prior to the special quotation date of the first nearby Japanese Equity Futures Contract to, and including, the last exchange business day prior to the special quotation date of such Japanese Equity Futures Contract. The special quotation day is the first exchange business day following the last trading day of the expiring contract (such last trading day is usually the exchange business day preceding the second Friday of the expiration month). Such period is referred to from time to time as the “roll period”. On each exchange business day of the roll period, one third of the notional investment in the first nearby Japanese Equity Futures Contract will be rolled into the second nearby Japanese Equity Futures Contract, and the prices at which the Japanese Equity Futures Contracts are rolled will be based on the Japanese Equity Futures Contract Valuation Prices for each of the first nearby and second nearby Japanese Equity Futures Contracts. Rolling will, however, be carried out pursuant to a different methodology when at any time during the roll period the Japanese Equity Futures Contract Valuation Prices for either or both of the first nearby and second nearby Japanese Equity Futures Contracts are not published or are otherwise unavailable as further described below.

Price of Japanese Equity Futures Contracts Unavailable

Unavailable Outside of the Roll Period: If, on any exchange business day that does not fall within the roll period, the Japanese Equity Futures Contract Valuation Price for the first nearby Japanese Equity Futures Contract is not published or is otherwise unavailable, then the Calculation Agent will not calculate any value for the Japanese Equity Futures Strategy Index but will publish the last available value.

In such an instance, if, on the immediately following exchange business day, the Japanese Equity Futures Contract Valuation Price for the first nearby Japanese Equity Futures Contract is available, the daily return ratio of the value of the Japanese Equity Futures Contracts will be calculated as the *quotient* of (a) the Japanese Equity Futures Contract Valuation Price on that immediately following exchange business day *divided* by (b) the last available Japanese Equity Futures Contract Valuation Price; *provided*, *however*, that, for the avoidance of doubt, if such immediately following exchange business day is the first day of the roll period and the Japanese Equity Futures Contract Valuation Price for the second nearby Japanese Equity Futures Contract is not published or is otherwise unavailable on that immediately following exchange business day, then, as further described below, the Calculation Agent will not calculate any value for the Japanese Equity Futures Strategy Index but will publish the last available value.

Unavailable Within the Roll Period: If the Japanese Equity Futures Contract Valuation Price is not published or is otherwise unavailable for either or both of the first nearby and second nearby Japanese Equity Futures Contracts at any time during the roll period, then that rolling will be carried out pursuant to the following alternative rolling methodology:

- **Case 1:** If (a) the Japanese Equity Futures Contract Valuation Price is not published or is otherwise unavailable on the first exchange business day of the roll period for either or both of the first nearby and second nearby Japanese Equity Futures Contracts *and* (b) the Japanese Equity Futures Contract Valuation Price is available on the second exchange business day of the roll period for both the first nearby and second nearby Japanese Equity Futures Contracts, then:

- one half of the notional investment in the first nearby Japanese Equity Futures Contract will be rolled into the second nearby Japanese Equity Futures Contract on that second exchange business day of the roll period; *and*

- if the Japanese Equity Futures Contract Valuation Price is also available on the third exchange business day of the roll period for both the first nearby and second nearby Japanese Equity Futures Contracts, then the second half of the notional investment in the first nearby Japanese Equity Futures Contract will be rolled over into the second nearby Japanese Equity Futures Contract on that third exchange business day of the roll period; *but*

- if the Japanese Equity Futures Contract Valuation Price is not published or is otherwise unavailable on such third exchange business day of the roll period for either or both of the first nearby and second nearby Japanese Equity Futures Contracts, then rolling of any remaining portion of the notional investment in the first nearby Japanese Equity Futures Contract will be carried out as set out below under Case 4.

- **Case 2:** If the Japanese Equity Futures Contract Valuation Price is not published or is otherwise unavailable on <u>both the first and second exchange business days of the roll period</u> for either or both of the first nearby and second nearby Japanese Equity Futures Contracts, then:

  - if the Japanese Equity Futures Contract Valuation Price is available on the third exchange business day of the roll period for both the first nearby and second nearby Japanese Equity Futures Contracts, then the entire notional investment in the first nearby Japanese Equity Futures Contract will be rolled into the second nearby Japanese Equity Futures Contract on the third exchange business day of the roll period; *but*

  - otherwise, the rolling of any remaining portion of the notional investment in the first nearby Japanese Equity Futures Contract will be carried out as set out below under Case 4.

- **Case 3:** If the Japanese Equity Futures Contract Valuation Price is available on the first exchange business day of the roll period for both of the first nearby and second nearby Japanese Equity Futures Contracts (on which day one-third of the notional investment in the first nearby Japanese Equity Futures Contract is rolled over into the second nearby Japanese Equity Futures Contract), but the Japanese Equity Futures Contract Valuation Price is not published or is otherwise unavailable on <u>the second exchange business day of the roll period</u> for either or both of the first nearby and second nearby Japanese Equity Futures Contracts, then the remaining two-thirds of the notional investment in the first nearby Japanese Equity Futures Contract will be rolled into the second nearby Japanese Equity Futures Contract on the third exchange business day of the roll period, *unless* the Japanese Equity Futures Contract Valuation Price is not published or is otherwise unavailable on such third exchange business day of the roll period for either or both of the first nearby and second nearby Japanese Equity Futures Contracts (in which case the rolling of any remaining portion of the notional investment in the first nearby Japanese Equity Futures Contract will be carried out as set out below under Case 4).

- **Case 4:** In any situation where the Japanese Equity Futures Contract Valuation Price for either or both of the first nearby and second nearby Japanese Equity Futures Contracts is not published or is otherwise unavailable on <u>the third exchange business day of the roll period</u> (including where such price is not published or is otherwise unavailable on both the first and third exchange business days of the roll period only, on both the second and third exchange business days of the roll period only or on all three exchange business days of the roll period), then any remaining amount of the notional investment in the first nearby Japanese Equity Futures Contract will be rolled into the second nearby Japanese Equity Futures Contract on the special quotation date, which is the exchange business day immediately following the third exchange business day of the roll period. On such special quotation date, rolling will be effected by using the special quotation price for the first nearby Japanese Equity Futures Contract and the first traded price for the second nearby Japanese Equity Futures Contract, provided that if, on such special quotation date, the special quotation price for the first nearby Japanese Equity Futures Contract and/or the first traded price for the second nearby Japanese Equity Futures Contract is not published or is otherwise unavailable, then the first nearby Japanese Equity Futures Contract will be sold at the Japanese Equity Futures Contract Valuation Price for such first nearby Japanese Equity Futures Contract on the last reference day (as defined below) and the second nearby Japanese Equity Futures Contract will be bought at the Japanese Equity Futures Contract Valuation Price for such second nearby Japanese Equity Futures Contract on the last reference day.

On each exchange business day on which rolling does not occur because the Japanese Equity Futures Contract Valuation Price is not published or is otherwise unavailable for either or both of the first nearby and second nearby Japanese Equity Futures Contracts (such day, a "no-roll exchange business day"; for the avoidance of doubt, a no-roll exchange business day may include any exchange business day of the roll period), the Calculation Agent will not calculate any value for the Japanese Equity Futures Strategy Index but will publish the last available value.

If, on any exchange business day immediately following such no-roll exchange business day, the Japanese Equity Futures Contracts are rolled over pursuant to the alternative methodology described above, then the Calculation Agent will apply alternative calculation methods to compute the level of the Japanese Equity Futures Strategy Index on such exchange business day, which can be summarized as follows:

On such exchange business day immediately following such no-roll exchange business day, the level of the Japanese Equity Futures Strategy Index will be computed as the *product* of:

- the value of the Japanese Equity Futures Strategy Index as of the last exchange business day on which the Japanese Equity Futures Contract Valuation Prices for both of the first nearby and second nearby Japanese Equity Futures Contracts were available (such day, the "last reference day"); *multiplied* by
- the *sum* of:

(i) the *daily return ratio* reflecting either:

(a) if such exchange business day falls within the roll period, the weighted performance of the first nearby Japanese Equity Futures Contract and the weighted performance of the second nearby Japanese Equity Futures Contract from the last reference day to such exchange business day; or

(b) if such exchange business day is a special quotation date of the first nearby Japanese Equity Futures Contract, the *product* of (x) the weighted performance of the first nearby Japanese Equity Futures Contract from the last reference day up to the rolling effected as of the opening of the market on such special quotation date, (y) the weighted performance of the second nearby Japanese Equity Futures Contract from the last reference day up to the rolling effected as of the opening of the market on such special quotation date and (z) the performance of the second nearby Japanese Equity Futures Contract, including the second nearby contracts into which any remaining portion of the first nearby Japanese Equity Futures Contract are rolled over on such special quotation date, from the opening of the market to market close on such special quotation date (for the avoidance of doubt, if the last traded price of the second nearby Japanese Equity Futures Contract is not published or is otherwise unavailable on such special quotation date, then the Calculation Agent will not calculate any value for the Japanese Equity Futures Strategy Index but will publish the last available value),

plus

(ii) the overnight interest rate for the calculation period.

Publication

The value of the Japanese Equity Futures Strategy Index is published on the Bloomberg page FRSIJPE <Index> (or any successor page).

Historical Data

The Base Date for the Index is a date earlier than that on which the Calculation Agent began calculating the Index. Therefore, historical information provided from the Base Date to the date on which the Calculation Agent began calculating the index 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 Base Date using the

Methodology. This data does not reflect actual performance, nor was a contemporaneous investment model run of the Index.

Historical levels of the Index are calculated with reference to the Japanese Equity Futures Contract Valuation Prices determined based on the latest available data published by the OSE and its predecessor for the relevant futures contracts, the Tokyo Stock Exchange.

Japanese Equity Futures Strategy Index Calculation Formulae

The formulae for the calculation of the Japanese Equity Futures Strategy Index are presented below. Investors, however, should be aware that these formulae do not reflect the alternative rolling and calculation methodologies applied when the value of the relevant Japanese Equity Futures Contracts is not published or is otherwise unavailable (as further described above).

$$TRI_t = (r_t + \frac{i_{t-n}}{365} \cdot n)\, TRI_{t-n};$$

$$\begin{cases} r_t = \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}}, \\ \text{when NOT in the 3-day roll period} \\ r_t = (1 - \dfrac{m-1}{3}) \cdot \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}} + \dfrac{m-1}{3} \cdot \dfrac{{}_cP_{2,t}}{{}_cP_{2,t-n}} \\ \text{when on the } m^{th} \text{ day of the roll period, } m = 1, 2, 3 \end{cases}$$

Where

t = The relevant exchange business day;

TRI_t = The value of Japanese Equity Futures Strategy Index as of day t;

i_{t-n} = Overnight interest rate as of (t - n);

n = The number of actual calendar days between t and the immediately preceding exchange business day (t - n);

r_t = Daily price return of the value of the Japanese Equity Futures Contracts on t;

${}_cP_{1,t}$ = Japanese Equity Futures Contract Valuation Price of the first nearby Japanese Equity Futures Contract on t; *provided* that, for the avoidance of doubt, once the rolling has been effected in accordance with the above roll methodology and there is no remaining amount to be rolled, the first nearby Japanese Equity Futures Contract shall mean the Japanese Equity Futures Contracts into which the notional investment has been rolled; and

${}_cP_{2,t}$ = Japanese Equity Futures Contract Valuation Price of the second nearby Japanese Equity Futures Contract on t.

Note: All calculations are based on seven significant figures (rounded at the eighth significant figure), and the value is published up to two decimal places (rounded at the third decimal place).

Adjustment; Rebasement

Investors should be aware that if the terms of the Japanese Equity Futures Contracts are modified or the TOPIX® Stock Price Index is rebased or otherwise adjusted or modified, the Index Committee may take such steps as it considers appropriate in response to such modification, rebasement or adjustment.

THE TOPIX® STOCK PRICE INDEX FUTURES CONTRACTS

The TOPIX® Stock Price futures contracts underlying the Japanese Equity Futures Strategy Index are contracts (with maturities as defined by the reference exchange) to buy or sell standardized trading “units”. At the time the Japanese Equity Futures Strategy Index invests in them, the futures contracts will have a term to maturity as defined by the reference exchange. One trading unit of TOPIX® Stock Price Index futures contracts equals 10,000 yen *multiplied* by the TOPIX® Stock Price Index. The TOPIX® Stock Price Index futures contract closest to expiration at any given time is known as the "first nearby" futures contract, and the TOPIX® Stock Price Index futures contract that is second closest to expiration at any given time is known as the "second nearby" futures contract.

THE TOPIX® STOCK PRICE INDEX

The TOPIX® Stock Price Index is a free-float adjusted market capitalization-weighted index of all the domestic common stocks listed on the First Section of the Tokyo Stock Exchange (the "**TSE**"). Domestic stocks admitted to the TSE are assigned either to the First Section or the Second Section. Stocks listed in the First Section, are among the most actively traded stocks on the TSE. The index was first calculated and published in 1969.

The TOPIX® Stock Price Index is computed and published every 15 seconds via TSE's Market Information System. It is reported to securities companies across Japan and is available worldwide through computerized information networks.

Additional information on the TOPIX® Stock Price Index is available at http://www.tse.or.jp. Neither this website nor any of the material it includes is incorporated by reference herein.

Licensing Information

Goldman Sachs International is the sole licensing agent for the Index. Questions about licensing the Index can be directed to the individuals listed under "Contact Information" below.

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The Index relies on information published by the exchange regarding the price of the Japanese Equity Futures Contracts as well as other matters. The Calculation Agent and Index Sponsor make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the Japanese Equity Futures Strategy Index.

Appendix 5
The US Government Bond Futures Rolling Strategy Index

A. Additional Risk Factors

The US Government Bond Futures Rolling Strategy Index Relies on the Use of Third Party Information

The US Government Bond Futures Rolling Strategy Index relies on information published by the reference exchange specified in the table under “Overview of the Underlying Assets” in the relevant Strategy Supplement. The respective index calculation agents and Goldman Sachs International as the sponsor of the US Government Bond Futures Rolling Strategy Index make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the US Government Bond Futures Rolling Strategy Index.

The US Government Bond Futures Rolling Strategy Index Is Not Actively Managed

The US Government Bond Futures Rolling Strategy Index operates in accordance with a set of pre-determined rolling methodology and formulae and its index calculation agent does not exercise any discretion with respect to the US Government Bond Futures Rolling Strategy Index. The US Government Bond Futures Rolling Strategy Index is, therefore, not managed. Goldman Sachs International as the sponsor of the US Government Bond Futures Rolling Strategy Index is not acting as an investment adviser or performing a discretionary management role with respect to the US Government Bond Futures Rolling Strategy Index and, as a result, has no fiduciary duty to any person in respect of the US Government Bond Futures Rolling Strategy Index.

The US Government Bond Futures Rolling Strategy Index Procures No Rights with Respect to the Underlying Futures Contracts

The investment exposure provided by the US Government Bond Futures Rolling Strategy Index is synthetic. An investment linked to the US Government Bond Futures Rolling Strategy Index will therefore not make an investor a holder of, or give an investor a direct investment position in, any futures contracts underlying the US Government Bond Futures Rolling Strategy Index.

The Index Calculation Agent Is Contractually Required to Publish a Level for the US Government Bond Futures Rolling Strategy Index Even if the Price of Underlying Futures Contracts Is Unavailable or Disrupted

If the price of an underlying futures contract is unavailable, or a market disruption event has occurred or is continuing on any given exchange business day, the index calculation agent is nonetheless contractually required to calculate and publish a value based on pre-determined valuation rules. As further described above in the Strategy Description, in those circumstances the Strategy Calculation Agent may, however, delay the volatility or basket rebalancing of the Strategy and use replacement values that may be different from, and higher or lower than, the level of the US Government Bond Futures Rolling Strategy Index as calculated by the index calculation agent.

The Goldman Sachs Group, Inc. May Create and Publish Indices Similar to the US Government Bond Futures Rolling Strategy Index

The Goldman Sachs Group, Inc. may in the future create and publish other indices, the concepts of which are similar, or identical, to those of the US Government Bond Futures Rolling Strategy Index.

The levels being published on the Bloomberg page of the US Government Bond Futures Rolling Strategy Index (or any successor pages), however, are the only levels that will be used for the calculation of the Strategy, subject to limited exceptions where the level is disrupted. Accordingly, no other published indices (if any) on the futures contracts underlying the US Government Bond Futures Rolling Strategy Index should be treated as the levels of the US Government Bond Futures Rolling Strategy Index, even where the concepts of such indices are similar, or identical, to those of the US Government Bond Futures Rolling Strategy Index.

B. Additional Market Disruption Events

N/A

C. Summary Description

The following overview of the US Government Bond Futures Rolling Strategy Index is a summary and, as such, is necessarily incomplete. This overview should be read in conjunction with, and is qualified in its entirety by, the more detailed description of the US Government Bond Futures Rolling Strategy Index and its operation that follows in this document.

The US Government Bond Futures Rolling Strategy Index (the "**UST Futures Index**" or the "**Index**") is a proprietary index designed to provide investors with exposure to the total return (including income from interest) of 10-Year U.S. Treasury Notes futures contracts (the "**10Y U.S. Treasury Futures Contracts**") currently listed on the Chicago Board of Trade, part of the CME Group (the "**CBOT**") and traded via CME Globex. For more details on the 10Y U.S. Treasury Futures Contracts and 10-Year U.S. Treasury notes deliverable under such contracts (the "**U.S. Treasury Notes**"), please see the section below entitled "10Y U.S. Treasury Futures Contracts" and the "U.S. Treasury Notes".

The 10Y U.S. Treasury Futures Contracts expire on specific quarter end dates (one of March, June, September or December). At any given time, there is more than one listed 10Y U.S. Treasury Futures Contract on the CBOT (for example, with expirations of September 2014, December 2014, March 2015, June 2015 and September 2015), and the Index will include the first nearby 10Y U.S. Treasury Futures Contract that has not reached expiration or a roll period (the September 2014 contract in the example). As the first nearby 10Y U.S. Treasury Futures Contract approaches its expiration month, the CBOT rules require that any holder of a contract that will be delivering U.S. Treasury Notes to its counterparty at expiration give notice within a specified period (beginning on August 29, 2014 in our example) that it will make such delivery. The first such date is called the first notice date. As the first nearby 10Y U.S. Treasury Futures Contract approaches its first notice date, it will be replaced by the next 10Y U.S. Treasury Futures Contract (December 2014 in our example), which is known as the second nearby futures contract. This replacement process is referred to as "rolling". Rolling will be carried out during the three exchange business days starting from, and including, the third to last exchange business day prior to the first notice date (the first notice date is August 29, 2014 in our example) of the expiring 10Y U.S. Treasury Futures Contract) to, and including, the last exchange business day prior to the first notice date of such expiring 10Y U.S. Treasury Futures Contract. Such period is referred to as the "**roll period**". For further information on the roll methodology, please refer to the section entitled "Roll Methodology" below.

The Index is calculated in United States dollars on a total return basis and the value of the Index (the "**Index Value**") is calculated on each exchange business day (as defined in "Daily Strategy Value Calculation").

Goldman Sachs International (the "**Index Sponsor**") has retained S&P Opco, LLC (a subsidiary of S&P Dow Jones Indices LLC) to serve as calculation agent (the "**Calculation Agent**") for the Index. In the event the Index Committee (as described below) appoints a replacement Calculation Agent, a public announcement will be made via press release.

Unless otherwise indicated, any public announcement contemplated by this Methodology shall be posted at:

http://www.goldmansachsindices.com or any successor website

We are not incorporating by reference such website or any other website or any materials from any website into this index methodology.

UST Futures Index – Various Roles

The UST Futures Index is sponsored by Goldman Sachs International but is calculated by the Calculation Agent. The UST Futures Index operates in accordance with a set of pre-determined rolling methodologies and formulae, and the Calculation Agent does not exercise any discretion with respect to the UST Futures Index. The UST Futures Index is, therefore, not a managed index. As the Index Sponsor, Goldman Sachs International is not acting as an investment adviser or performing a discretionary management role with respect to the UST Futures Index and, as a result, has no fiduciary duty to any person in respect of the UST Futures Index.

UST Futures Index Starting Value

The UST Futures Index has been given a starting value of 100 as of December 31, 1991, which is the base date ("**Base Date**").

Daily Strategy Value Calculation

The UST Futures Index is a U.S. dollar denominated index and is calculated on each day on which the CBOT is open for trading (an "**exchange business day**"). The value of the UST Futures Index on any given exchange business day will be calculated as the *product* of (i) the value of the UST Futures Index as of the immediately preceding exchange business day *multiplied by* (ii) the *sum* of (x) the daily return ratio of the value of the 10Y U.S. Treasury Futures Contracts (calculated as described below) on such exchange business day and (y) the overnight interest rate for the immediately preceding exchange business day multiplied by the applicable day count fraction based on the number of calendar days in the calculation period.

Daily Return Ratio of the Value of the 10Y U.S. Treasury Futures Contracts: On each exchange business day (other than during the roll period as described below), the daily return ratio of the value of 10Y U.S. Treasury Futures Contracts is calculated as the *quotient* of (a) the 10Y U.S. Treasury Futures Contract Valuation Price on the relevant exchange business day *divided by* (b) the 10Y U.S. Treasury Futures Contract Valuation Price on the immediately preceding exchange business day. During the roll period, the calculation of the daily return ratio of 10Y U.S. Treasury Futures Contracts will reflect the price of the second nearby 10Y U.S. Treasury Futures Contract rather than the first nearby 10Y U.S. Treasury Futures Contract to the extent the Index's investment has been rolled over during the roll period.

10Y U.S. Treasury Futures Contract Valuation Price: The 10Y U.S. Treasury Futures Contract Valuation Price on any given exchange business day means the official daily settlement price per 10Y U.S. Treasury Futures Contract quoted by the CBOT on such exchange business day. The Calculation Agent will not calculate the daily index value or will calculate such value pursuant to a different methodology when at any given time the 10Y U.S. Treasury Futures Contract Valuation Price for the first nearby 10Y U.S. Treasury Futures Contract and/or the second nearby 10Y U.S. Treasury Futures Contract, as applicable, are not published or are otherwise unavailable as further described below under "Price of 10Y U.S. Treasury Futures Contracts Unavailable".

Overnight Interest Rate: The overnight interest rate used for purposes of calculating the value of the UST Future Index is the overnight interest rate as published on Global Insight DRI page USD-FEDERAL-FUNDS-H15 and the ACT/360 day count fraction convention (meaning the actual number of days in the relevant period *divided by* 360). If the overnight interest rate is not published or is otherwise unavailable for an applicable calculation period, then the last available overnight interest rate published on such page will be used as the overnight interest rate for such calculation period.

- **Publication of Changes to the Methodology**

Changes to the Methodology made by the Index Committee will be publicly announced at least 60 exchange business days prior to their effective date. Adjustments made by the Calculation Agent in response to the unavailability of the 10Y U.S. Treasury Futures Contract Valuation Prices will be publicly announced as promptly as is reasonably practicable.

- **Index Committee**

An Index Committee is responsible for overseeing the Index and the Methodology, while the Calculation Agent is responsible for the day to day implementation of the Methodology, for the calculation of the Index, including responding to events as described under "Price of 10Y U.S. Treasury Futures Contracts Unavailable", and for publication of the Index Value. The Index Committee is committed to maintaining the Index as a liquid, tradable index. The Index Committee is currently comprised of three full-time employees of The Goldman Sachs Group, Inc. or one or more of its affiliates.

The Index Committee may exercise limited discretion with respect to the Index, as contemplated by the Methodology. Any such changes or actions are publicly announced as promptly as is reasonably practicable and normally at least five exchange business days prior to their effective date. The Calculation Agent may from time to time consult the Index Committee 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, are confidential. The Index Committee will determine the successor of any of its members.

Roll Methodology

As 10Y U.S. Treasury Futures Contracts have an expiration on specified quarter end dates (March, June, September or December), when the first nearby 10Y U.S. Treasury Futures Contract come to expiration, it is replaced by the second nearby 10Y U.S. Treasury Futures Contract. For example, a 10Y U.S. Treasury Futures Contract may specify a June expiration. As time passes, the contract expiring in June is replaced by a 10Y U.S. Treasury Futures Contract for delivery in September. This process is referred to as "rolling".

Roll Period: Rolling will be carried out during the three exchange business days starting from, and including, the third to last exchange business day prior to the first notice date of the first nearby 10Y U.S. Treasury Futures Contract to, and including, the last exchange business day prior to the first notice date of such 10Y U.S. Treasury Futures Contract. Such period is referred to from time to time as the "roll period". On each exchange business day of the roll period, one third of the notional investment in the first nearby 10Y U.S. Treasury Futures Contract will be rolled into the second nearby 10Y U.S. Treasury Futures Contract, and the prices at which 10Y U.S. Treasury Futures Contracts are rolled will be based on the 10Y U.S. Treasury Futures Contract Valuation Price for each of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts. Rolling will, however, be carried out pursuant to a different methodology when at any time during the roll period the 10Y U.S. Treasury Futures Contract Valuation Prices for one or both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts are not published or are otherwise unavailable as further described below.

Price of 10Y U.S. Treasury Futures Contracts Unavailable

Unavailable Outside of the Roll Period: If, on any exchange business day that does not fall within the roll period, the 10Y U.S. Treasury Futures Contract Valuation Price for the first nearby 10Y U.S. Treasury Futures Contract is not published or is otherwise unavailable, then the Calculation Agent will not calculate any value for the UST Futures Index but will publish the last available value.

If, on the immediately following exchange business day, the 10Y U.S. Treasury Futures Contract Valuation Price for the first nearby 10Y U.S. Treasury Futures Contract is available, the daily return ratio of the value of the 10Y U.S. Treasury Futures Contract will be calculated as the *quotient* of (a) the 10Y U.S. Treasury Futures Contract Valuation Price on that exchange business day and (b) the last available 10Y U.S. Treasury Futures Contract Valuation Price (however, for the avoidance of doubt, if such exchange business day is the first day of the roll period and the 10Y U.S. Treasury Futures Contract Valuation Price for the second nearby 10Y U.S. Treasury Futures Contract is not published or is otherwise unavailable on that exchange business day, then, as further described below, the Calculation Agent will not calculate any value for the UST Futures Index but will publish the last available value).

Unavailable Within the Roll Period: If the 10Y U.S. Treasury Futures Contract Valuation Price for one or both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts is not published or is otherwise unavailable at any time during the roll period, then rolling will be carried out pursuant to the following alternative rolling methodology:

- **Case 1:** If the 10Y U.S. Treasury Futures Contract Valuation Price for one or both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts is not published or is otherwise unavailable on <u>the first exchange business day of the roll period</u>, then one half of the notional investment in the first nearby 10Y U.S. Treasury Futures Contract will be rolled into the second nearby 10Y U.S. Treasury Futures Contract on the second exchange business day of the roll period if the 10Y U.S. Treasury Futures Contract Valuation Prices for both the first nearby and second nearby 10Y U.S. Treasury Futures Contracts are available on such second exchange business day, and the second half of the notional investment in the first nearby 10Y U.S. Treasury Futures Contract will be rolled over into the second nearby 10Y U.S. Treasury Futures Contract on the third exchange business day of the roll period if the 10Y U.S. Treasury Futures Contract Valuation Prices for both the first nearby and second nearby 10Y U.S. Treasury Futures Contracts are available on such third exchange business day; however, if the 10Y U.S. Treasury Futures Contract Valuation Price for one or both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts is not published or is otherwise unavailable on such third exchange business day, then rolling of any remaining portion of the notional investment in the first nearby 10Y U.S. Treasury Futures Contract will be carried out as set out below in respect of Case 4.

- **Case 2:** If the 10Y U.S. Treasury Futures Contract Valuation Price for one or both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts is not published or is otherwise unavailable on <u>both of the first and second exchange business days of the roll period</u>, then the entire notional investment in the first nearby 10Y U.S. Treasury Futures Contract will be rolled into the second nearby 10Y U.S. Treasury Futures Contract on the third exchange business day of the roll period; however, if the 10Y U.S. Treasury Futures Contract Valuation Price for one or both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts is not published or is otherwise unavailable on such third exchange business day, then rolling of any remaining portion of the notional investment in the first nearby 10Y U.S. Treasury Futures Contract will be carried out as set out below in respect of Case 4.

- **Case 3:** If the 10Y U.S. Treasury Futures Contract Valuation Price for both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts is available on the first exchange business day of the roll period, on which one third of the notional investment in the first nearby 10Y U.S. Treasury Futures Contract is rolled over into the second nearby 10Y U.S. Treasury Futures Contract, but the 10Y U.S. Treasury Futures Contract Valuation Price for one or both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts is not published or is otherwise unavailable on the second exchange business day of the roll period, then the remaining two thirds of the notional investment in the first nearby 10Y U.S. Treasury Futures Contract will be rolled into the second nearby 10Y U.S. Treasury Futures Contract on the third exchange business day of the roll period; however, if the 10Y U.S. Treasury Futures Contract Valuation Price for one or both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts is not published or is otherwise unavailable on such third exchange business day, then rolling of any remaining portion of the notional investment in the first nearby 10Y U.S. Treasury Futures Contract will be carried out as set out below in respect of Case 4.

- **Case 4:** In any situation where the 10Y U.S. Treasury Futures Contract Valuation Price for one or both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts is not published or is otherwise unavailable on the third exchange business day of the roll period (including where such price is not published or is otherwise unavailable on both of the first and third exchange business days of the roll period only, both of the second and third exchange business days of the roll period only or all of the three exchange business days of the roll period), then any remaining amount of the notional investment in the first nearby 10Y U.S. Treasury Futures Contract will be rolled into the second nearby 10Y U.S. Treasury Futures Contract on the first notice date, which is the exchange business day immediately following the third exchange business day of the roll period. On such first notice date, rolling will be effected by using the first traded prices for the first nearby 10Y U.S. Treasury Futures Contract and the second nearby 10Y U.S. Treasury Futures Contract, provided that if, on such first notice date, the first traded price for the first nearby 10Y U.S. Treasury Futures Contract and/or the second nearby 10Y U.S. Treasury Futures Contract is not published or is otherwise unavailable, then the first nearby 10Y U.S. Treasury Futures Contract will be sold at the Valuation Price for such first nearby 10Y U.S. Treasury Futures Contract on the last reference day (as defined below) and the second nearby 10Y U.S. Treasury Futures Contract will be bought at the Valuation Price for such second nearby 10Y U.S. Treasury Futures Contract on the last reference day.

On any given exchange business day on which rolling does not occur because the 10Y U.S. Treasury Futures Contract Valuation Price for one or both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts is not published or is otherwise unavailable (such day, a “no-roll exchange business day”; for the avoidance of doubt, a no-roll exchange business day may include any exchange business day of the roll period), the Calculation Agent will not calculate any value for the UST Futures Index but will publish the last available value.

If, on any exchange business day immediately following such no-roll exchange business day, the 10Y U.S. Treasury Futures Contracts are rolled over pursuant to the alternative methodology described above, then the Calculation Agent will apply alternative calculation methods to compute the level of the UST Futures Index on such exchange business day, which can be summarized as follows:

On such exchange business day, the level of the UST Futures Index will be computed as the *product* of:

- the value of the UST Futures Index as of the last exchange business day on which the Valuation Prices for both of the first nearby and second nearby 10Y U.S. Treasury Futures Contracts were available (such day, the “last reference day”); and

- the *sum* of:

  (i) the *daily return ratio* reflecting either:

(a) if such exchange business day falls within the roll period, the weighted performance of the first nearby 10Y U.S. Treasury Futures Contract and the weighted performance of the second nearby 10Y U.S. Treasury Futures Contract from the last reference day to such exchange business day; or

(b) if such exchange business day is a first notice date, the *product* of (x) the weighted performance of the first nearby 10Y U.S. Treasury Futures Contract from the last reference day up to the rolling effected as of the opening of the market on the first notice date, (y) the weighted performance of the second nearby 10Y U.S. Treasury Futures Contract from the last reference day up to the rolling effected as of the opening of the market on such first notice date and (z) the performance of the second nearby 10Y U.S. Treasury Futures Contract, including the second nearby contract into which any remaining portion of the first nearby 10Y U.S. Treasury Futures Contract is rolled over on such first notice date, calculated based on the opening price and the official daily settlement price of the second nearby 10Y U.S. Treasury Futures Contract on such first notice date (for the avoidance of doubt, if the official daily settlement price of the second nearby 10Y U.S. Treasury Futures Contract is not published or is otherwise unavailable on such first notice date, then the Calculation Agent will not calculate any value for the UST Futures Index but will publish the last available value),

and

(ii) the overnight interest rate for the calculation period.

Publication

The value of the UST Futures Index is published on the Bloomberg page FRSIUSB <Index> (or any successor page).

- **Historical Data**

The Base Date for the Index is a date earlier than that on which the Calculation Agent began calculating the Index. Therefore, historical information provided from the Base Date to the date on which the Calculation Agent began calculating the index 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 Base Date using the Methodology. This data does not reflect actual performance, nor was a contemporaneous investment model run of the Index.

Historical levels of the Index are calculated with reference to the 10Y U.S. Treasury Futures Contract Valuation Prices determined based on the latest available data published by the CBOT.

UST Futures Index Calculation Formulae

The formulae for the calculation of the UST Futures Index are presented below. Investors, however, should be aware that these formulae do not reflect the alternative rolling and calculation methodologies applied when the value of the relevant 10Y U.S. Treasury Futures Contracts is not published or is otherwise unavailable (as further described above).

$$TRI_t = (r_t + \frac{i_{t-n}}{360} \cdot n)\, TRI_{t-n};$$

$$\begin{cases} r_t = \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}}, \\ \text{when NOT in the 3-day roll period} \\ r_t = (1 - \dfrac{m-1}{3}) \cdot \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}} + \dfrac{m-1}{3} \cdot \dfrac{{}_cP_{2,t}}{{}_cP_{2,t-n}} \\ \text{when on the m}^{\text{th}} \text{ day of the roll period, } \mathrm{m} = 1, 2, 3 \end{cases}$$

Where

t = The relevant exchange business day;

TRI_t = The value of UST Futures Index as of day t;

i_{t-n} = Overnight interest rate as of (t - n);

n = The number of actual calendar days between t and the immediately preceding exchange business day (t - n);

r_t = Daily price return of the value of the 10Y U.S. Treasury Futures Contracts on t;

${}_cP_{1,t}$ = 10Y U.S. Treasury Futures Contract Valuation Price of the first nearby 10Y U.S. Treasury Futures Contract on t; *provided* that, for the avoidance of doubt, once the rolling has been effected in accordance with the above roll methodology and there is no remaining amount to be rolled, the first nearby 10Y U.S. Treasury Futures Contract shall mean the 10Y U.S. Treasury Futures Contract into which the notional investment has been rolled; and

${}_cP_{2,t}$ = 10Y U.S. Treasury Futures Contract Valuation Price of the second nearby 10Y U.S. Treasury Futures Contract on t.

Note: All calculations are based on seven significant figures (rounded at the eighth significant figure), and the value is published up to two decimal places (rounded at the third decimal place).

Adjustments to the UST Futures Index

Investors should be aware that if the terms of the 10Y U.S. Treasury Futures Contracts are modified, the Index Committee may take such steps as it considers appropriate in response.

10Y U.S. Treasury Futures Contracts

The 10Y U.S. Treasury Futures Contracts underlying the UST Futures Index are contracts to buy or sell standardized trading "units". At the time the UST Futures Index invests in them, the futures contracts will have a term to maturity as defined by the reference exchange. One trading unit of a 10Y U.S. Treasury Futures Contract equals one U.S. Treasury Note with a face value of $100,000 or a multiple thereof and has a remaining term to maturity from the first day of the delivery month defined by the reference exchange.

U.S. Treasury Notes: U.S. Treasury Notes are notes issued by the U.S. government with a range of maturity as defined by the reference exchange. U.S. Treasury Notes are sold in increments of $100. The price and interest rate of a note are determined at auction. The price may be greater than, less than or equal to the note's par amount.

- **Licensing Information**

Goldman Sachs International is the sole licensing agent for the Index. Questions about licensing the Index can be directed to the individuals listed under "Contact Information" below.

- **Contact Information**

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Media Relations

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- **Calculation Agent Website**

http://www.standardandpoors.com/

The Index is the exclusive property of Goldman Sachs International, which has contracted with S&P Opco, LLC (a subsidiary of S&P Dow Jones Indices LLC) ("S&P Dow Jones Indices") to calculate and maintain the Index based on an objective pre-agreed methodology. S&P® is a registered trademark of Standard & Poor's Financial Services LLC ("SPFS"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); and, these trademarks have been licensed to S&P Dow Jones Indices. Neither S&P Dow Jones Indices, SPFS, Dow Jones nor any of their affiliates sponsor and promote the Index and none shall be liable for any errors or omissions in calculating the Index.

The Index relies on information published by the exchange regarding the price of the 10Y U.S. Treasury Futures Contracts as well as the first notice date and other matters. The Calculation Agent and Index Sponsor make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the Index.

Appendix 6
European Government Bond Futures Rolling Strategy Index

A. Additional Risk Factors

The European Government Bond Futures Rolling Strategy Index Relies on the Use of Third Party Information.

The European Government Bond Futures Rolling Strategy Index relies on information published by the reference exchange specified in the table under “Overview of the Underlying Assets” in the relevant Strategy Supplement. The respective index calculation agents and Goldman Sachs International as the sponsor of the European Government Bond Futures Rolling Strategy Index make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the European Government Bond Futures Rolling Strategy Index.

The European Government Bond Futures Rolling Strategy Index Is Not Actively Managed.

The European Government Bond Futures Rolling Strategy Index operates in accordance with a set of pre-determined rolling methodology and formulae and its index calculation agent does not exercise any discretion with respect to the European Government Bond Futures Rolling Strategy Index. The European Government Bond Futures Rolling Strategy Index is, therefore, not managed. Goldman Sachs International as the sponsor of the European Government Bond Futures Rolling Strategy Index is not acting as an investment adviser or performing a discretionary management role with respect to the European Government Bond Futures Rolling Strategy Index and, as a result, has no fiduciary duty to any person in respect of the European Government Bond Futures Rolling Strategy Index.

The European Government Bond Futures Rolling Strategy Index Procures No Rights with Respect to the Underlying Futures Contracts.

The investment exposure provided by the European Government Bond Futures Rolling Strategy Index is synthetic. An investment linked to the European Government Bond Futures Rolling Strategy Index will therefore not make an investor a holder of, or give an investor a direct investment position in, any futures contracts underlying the European Government Bond Futures Rolling Strategy Index.

The Index Calculation Agent Is Contractually Required to Publish a Level for the European Government Bond Futures Rolling Strategy Index Even if the Price of Underlying Futures Contracts Is Unavailable or Disrupted.

If the price of an underlying futures contract is unavailable, or a market disruption event has occurred or is continuing on any given exchange business day, the index calculation agent is nonetheless contractually required to calculate and publish a value based on pre-determined valuation rules. As further described above in the Strategy Description, in those circumstances the Strategy Calculation Agent may, however, delay the volatility or basket rebalancing of the Strategy and use replacement values that may be different from, and higher or lower than, the level of the European Government Bond Futures Rolling Strategy Index as calculated by the index calculation agent.

The Goldman Sachs Group, Inc. May Create and Publish Indices Similar to the European Government Bond Futures Rolling Strategy Index.

The Goldman Sachs Group, Inc. may in the future create and publish other indices, the concepts of which are similar, or identical, to those of the European Government Bond Futures Rolling Strategy Index.

The levels being published on the Bloomberg page of the European Government Bond Futures Rolling Strategy Index (or any successor pages), however, are the only levels that will be used for the calculation of the Strategy, subject to limited exceptions where the level is disrupted. Accordingly, no other published indices (if any) on the futures contracts underlying the European Government Bond Futures Rolling Strategy Index should be treated as the levels of the European Government Bond Futures Rolling Strategy Index, even where the concepts of such indices are similar, or identical, to those of the European Government Bond Futures Rolling Strategy Index.

B. Additional Market Disruption Events

N/A

C. Summary Description

The following overview of the European Government Bond Futures Rolling Strategy Index is a summary and, as such, is necessarily incomplete. This overview should be read in conjunction with, and is qualified in its entirety by, the more detailed description of the European Government Bond Futures Rolling Strategy Index and its operation that follows in this document.

The European Government Bond Futures Rolling Strategy Index (the "**Euro Bond Futures Strategy Index**" or the "**Index**") is a proprietary index designed to provide investors with exposure to the total return (including income from interest accruing at the relevant overnight interest rate (as described below)) of futures contracts (Euro-Bund) (the "**Euro Bond Futures Contracts**") on bonds of the Federal Republic of Germany (the "**German Bonds**") currently listed for trading on the Eurex. For further information on the Euro Bond Futures Contracts and the German Bonds, please see the sections below entitled "The Euro Bond Futures Contracts" and "The German Bonds".

The Euro Bond Futures Contracts expire on specific quarter end date (one of March, June, September or December). At any given time, there is more than one listed Euro Bond Futures Contract on the Eurex (for example, with expirations of September 2014, December 2014 and March 2015), and the Index will include the first nearby Euro Bond Futures Contract that has not reached expiration or a roll period (the September 2014 contract in the example). As the first nearby Euro Bond Futures Contract approaches its expiration month, the Eurex rules require that any holder of a contract that will be delivering German Bonds to its counterparty at expiration give notice within a specified period (beginning on September 8, 2014 in our example) that it will make such delivery. The first such date is called the first notice date. As the first nearby Euro Bond Futures Contract approaches its first notice date, it will be replaced by the next Euro Bond Futures Contract (December 2014 in our example), which is known as the second nearby futures contract. This replacement process is referred to as "rolling". Rolling will be carried out during the three Eurex exchange business days starting from, and including, the third last Eurex exchange business day prior to the first notice date of the expiring Euro Bond Futures Contract) to, and including, the last Eurex exchange business day prior to the first notice date of such expiring Euro Bond Futures Contract. Such period is referred to as the "**roll period**". For further information on the roll methodology, please refer to the section entitled "Roll Methodology" below.

The Index is calculated in euros on a total return basis and the value of the Index (the "**Index Value**") is calculated on each Eurex exchange business day (as defined in "Daily Strategy Value Calculation").

Goldman Sachs International (the "**Index Sponsor**") has retained S&P Opco, LLC (a subsidiary of S&P Dow Jones Indices LLC) to serve as calculation agent (the "**Calculation Agent**") for the Index. In the event the Index Committee (as described below) appoints a replacement Calculation Agent, a public announcement will be made via press release.

Unless otherwise indicated, any public announcement contemplated by this Methodology shall be posted at:

http://www.goldmansachsindices.com or any successor website

We are not incorporating by reference such website or any other website or any materials from any website into this index methodology.

Euro Bond Futures Strategy Index – Various Roles

The Euro Bond Futures Strategy Index is sponsored by Goldman Sachs International but is calculated by the Calculation Agent The Euro Bond Futures Strategy Index operates in accordance with a set of pre-determined rolling methodologies and set of formulae, and the Calculation Agent does not exercise any discretion with respect thereto. The Euro Bond Futures Strategy Index is, therefore, not a managed index. As the Index Sponsor, Goldman Sachs International is not acting as an investment adviser or performing a discretionary management role with respect to the Euro Bond Futures Strategy Index and, as a result, has no fiduciary duty to any person in respect of the Euro Bond Futures Strategy Index.

The Euro Bond Futures Strategy Index Starting Value

The Euro Bond Futures Strategy Index has been given a starting value of 100 as of December 31, 1991, which is the base date ("**Base Date**").

Daily Strategy Value Calculation

The Euro Bond Futures Strategy Index is a euro denominated index and is calculated on each day on which the Eurex is open for trading (a "**Eurex exchange business day**"). The value of the Euro Bond Futures Strategy Index on each Eurex exchange business day will be calculated as the *product* of (i) the value of the Euro Bond Futures Strategy Index as of the immediately preceding Eurex exchange business day *multiplied* by (ii) the *sum* of (x) the daily return ratio of the value of the Euro Bond Futures Contracts (calculated as described below) on such Eurex exchange business day *plus* (y) the overnight interest rate for the immediately preceding Eurex exchange business day *multiplied* by the applicable day count fraction based on the number of calendar days in the calculation period.

Daily Return Ratio of the Value of the Euro Bond Futures Contracts: On each Eurex exchange business day (other than during the roll period as described below), the daily return ratio of the value of Euro Bond Futures Contracts is calculated as the *quotient* of (a) the Euro Bond Futures Contract Valuation Price on the relevant Eurex exchange business day *divided* by (b) the Euro Bond Futures Contract Valuation Price on the immediately preceding Eurex exchange business day. During each roll period, the daily return ratio of the values of the Euro Bond Futures Contracts is calculated as the *quotient* of (a) the Euro Bond Futures Contract Valuation Price of the second nearby Euro Bond Futures Contracts on such Eurex exchange business day *divided* by (b) the Euro Bond Futures Contract Valuation Price of the second nearby Euro Bond Futures Contract on the immediately preceding Eurex exchange business day, rather than the first nearby Euro Bond Futures Contract to the extent the Index's investment has been rolled over.

Euro Bond Futures Contract Valuation Price: The Euro Bond Futures Contract Valuation Price on each Eurex exchange business day is the official daily settlement price per Euro Bond Futures Contract quoted by Eurex on such Eurex exchange business day. The Calculation Agent will not calculate the daily index value or will calculate such value pursuant to a different methodology when at any given time the Euro Bond Futures Contract Valuation Prices for the first nearby Euro Bond Futures Contract and/or the second nearby Euro Bond Futures Contract, as applicable, are not published or are otherwise unavailable as further described below under "*Price of the Euro Bond Futures Contracts Unavailable*".

Overnight Interest Rate: The overnight interest rate used for purposes of calculating the value of the Euro Bond Futures Strategy Index is the overnight interest rate as published on Reuters page EUR-EONIA-OIS-COMPOUND on EONIA RSF.REC.EONIA=.NaE, which follows the ACT/360 day count fraction convention (meaning the actual number of days in the relevant period divided by 360). If this overnight interest rate is not published or is otherwise unavailable for an applicable calculation period, then the last available overnight interest rate published on such page will be used as the overnight interest rate for such calculation period.

Unavailability of Euro Bond Futures Contract Valuation Price: The Calculation Agent will not, however, calculate the value of the Euro Bond Futures Strategy Index, or will calculate such value pursuant to a different methodology (as described below under "Price of Euro Bond Futures Contracts Unavailable – Unavailable Within the Roll Period"), as the case may be, at any time where the Euro Bond Futures Contract Valuation Price for the first nearby and/or the second nearby Euro Bond Futures Contract, as applicable, is not published or is otherwise unavailable as further described below.

- **Publication of Changes to the Methodology**

Changes to the Methodology made by the Index Committee will be publicly announced at least 60 Eurex exchange business days prior to their effective date. Adjustments made by the Calculation Agent in response to the unavailability of the Euro Bond Futures Contract Valuation Prices will be publicly announced as promptly as is reasonably practicable.

- **Index Committee**

An Index Committee is responsible for overseeing the Index and the Methodology, while the Calculation Agent is responsible for the day to day implementation of the Methodology, for the calculation of the Index, including responding to events as described under "Price of Euro Bond Futures Contracts Unavailable", and for publication of the Index Value. The Index Committee is committed to maintaining the Index as a liquid, tradable index. The Index Committee is currently comprised of three full-time employees of The Goldman Sachs Group, Inc. or one or more of its affiliates.

The Index Committee may exercise limited discretion with respect to the Index, as contemplated by the Methodology. Any such changes or actions are publicly announced as promptly as is reasonably practicable and normally at least five Eurex exchange business days prior to their effective date. The Calculation Agent may from time to time consult the Index Committee 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, are confidential. The Index Committee will determine the successor of any of its members.

Roll Methodology

Each Euro Bond Futures Contract has an expiration in a specified quarter end date (March, June, September or December). At any given time, the Euro Bond Futures Strategy Index will include the first nearby Euro Bond Futures Contract. As the first nearby Euro Bond Futures Contract comes to its first notice date, it is replaced by the second nearby Euro Bond Futures Contract. For example, a Euro Bond Futures Contract may specify a June expiration. As time passes, the contract expiring in June is replaced by a Euro Bond Futures Contract with a September expiration during the relevant roll period. This process is referred to as “rolling”.

Roll Period: Rolling will be carried out during the three Eurex exchange business days starting from, and including, the third to last Eurex exchange business day prior to the first notice date of the first nearby Euro Bond Futures Contract to, and including, the last Eurex exchange business day prior to the first notice date of such Euro Bond Futures Contract. Such period is referred to from time to time as the “roll period”. On each Eurex exchange business day of the roll period, one third of the notional investment in the first nearby Euro Bond Futures Contract will be rolled into the second nearby Euro Bond Futures Contract, and the prices at which the Euro Bond Futures Contracts is rolled will be based on the Euro Bond Futures Contract Valuation Price for each of the first nearby and second nearby Euro Bond Futures Contracts. Rolling will, however, be carried out pursuant to a different methodology when at any time during the roll period the Euro Bond Futures Contract Valuation Prices for one or both of the first nearby and second nearby Euro Bond Futures Contracts are not published or are otherwise unavailable as further described below.

Price of Euro Bond Futures Contracts Unavailable

Unavailable Outside of the Roll Period: If, on any Eurex exchange business day that does not fall within the roll period, the Euro Bond Futures Contract Valuation Price for the first nearby Euro Bond Futures Contract is not published or is otherwise unavailable, then the Calculation Agent will not calculate any value for the Euro Bond Futures Strategy Index but will publish the last available value.

In such an instance, if, on the immediately following Eurex exchange business day, the Euro Bond Futures Contract Valuation Price for the first nearby Euro Bond Futures Contract is available, the daily return ratio of the value of the Euro Bond Futures Contract will be calculated as the *quotient* of (a) the Euro Bond Futures Contract Valuation Price on that immediately following Eurex exchange business day *divided* by (b) the last available Euro Bond Futures Contract Valuation Price; *provided*, *however*, that, for the avoidance of doubt, if such immediately following Eurex exchange business day is the first day of the roll period and the Euro Bond Futures Contract Valuation Price for the second nearby Euro Bond Futures Contract is not published or is otherwise unavailable on that immediately following Eurex exchange business day, then, as further described below, the Calculation Agent will not calculate any value for the Euro Bond Futures Strategy Index but will publish the last available value.

Unavailable Within the Roll Period: If the Euro Bond Futures Contract Valuation Price is not published or is otherwise unavailable for either or both of the first nearby and second nearby Euro Bond Futures Contracts at any time during the roll period, then that rolling will be carried out pursuant to the following alternative rolling methodology:

- **Case 1:** If (a) the Euro Bond Futures Contract Valuation Price is not published or is otherwise unavailable on <u>the first Eurex exchange business day of the roll period</u> for either or both of the first nearby and second nearby Euro Bond Futures Contracts *and* (b) the Euro Bond Futures Contract Valuation Price is available on the second Eurex exchange business day of the roll period for both the first nearby and second nearby Euro Bond Futures Contracts, then:

- one half of the notional investment in the first nearby Euro Bond Futures Contract will be rolled into the second nearby Euro Bond Futures Contracts on that second Eurex exchange business day of the roll period; *and*

- if the Euro Bond Futures Contract Valuation Price is also available on the third Eurex exchange business day of the roll period for both the first nearby and second nearby Euro Bond Futures Contracts, the second half of the notional investment in the first nearby Euro Bond Futures Contract will be rolled over into the second nearby Euro Bond Futures Contract on that third Eurex exchange business day of the roll period; *but*

- if the Euro Bond Futures Contract Valuation Price is not published or is otherwise unavailable on such third Eurex exchange business day of the roll period for either or both of the first nearby and second nearby Euro Bond Futures Contracts, then rolling of any remaining portion of the notional investment in the first nearby Euro Bond Futures Contract will be carried out as set out below under Case 4.

- **Case 2:** If the Euro Bond Futures Contract Valuation Price is not published or is otherwise unavailable on <u>both the first and second Eurex exchange business days of the roll period</u> for either or both of the first nearby and second nearby Euro Bond Futures Contracts, then:

  - if the Euro Bond Futures Contract Valuation Price is available on the third Eurex exchange business day of the roll period for both the first nearby and second nearby Euro Bond Futures Contracts, then the entire notional investment in the first nearby Euro Bond Futures Contract will be rolled into the second nearby Euro Bond Futures Contract on the third Eurex exchange business day of the roll period; *but*

  - otherwise, the rolling of any remaining portion of the notional investment in the first nearby Euro Bond Futures Contract will be carried out as set out below under Case 4.

- **Case 3:** If the Euro Bond Futures Contract Valuation Price is available on the first Eurex exchange business day of the roll period for both the first nearby and second nearby Euro Bond Futures Contracts (on which day one-third of the notional investment in the first nearby Euro Bond Futures Contract is rolled over into the second nearby Euro Bond Futures Contract), but the Euro Bond Futures Contract Valuation Price is not published or is otherwise unavailable on <u>the second Eurex exchange business day of the roll period</u> for either or both of the first nearby and second nearby Euro Bond Futures Contracts, then the remaining two-thirds of the notional investment in the first nearby Euro Bond Futures Contract will be rolled into the second nearby Euro Bond Futures Contract on the third Eurex exchange business day of the roll period, *unless* the Euro Bond Futures Contract Valuation Price is not published or is otherwise unavailable on such third Eurex exchange business day of the roll period for either or both of the first nearby and second nearby Euro Bond Futures Contracts (in which case the rolling of any remaining portion of the notional investment in the first nearby Euro Bond Futures Contract will be carried out as set out below under Case 4).

- **Case 4:** In any situation where the Euro Bond Futures Contract Valuation Price for either or both of the first nearby and second nearby Euro Bond Futures Contracts is not published or is otherwise unavailable on <u>the third Eurex exchange business day of the roll period</u> (including where such price is not published or is otherwise unavailable on both the first and third Eurex exchange business days of the roll period only, on both the second and third Eurex exchange business days of the roll period only or on all three Eurex exchange business days of the roll period), then any remaining amount of the notional investment in the first nearby Euro Bond Futures Contract will be rolled into the second nearby Euro Bond Futures Contract on the first notice date, which is the Eurex exchange business day immediately following the third Eurex exchange business day of the roll period. On such first notice date, rolling will be effected by using the first traded prices for the first nearby Euro Bond Futures Contract and the second nearby Euro Bond Futures Contract, provided that if, on such first notice date, the first traded price for the first nearby Euro Bond Futures Contract and/or the second nearby Euro Bond Futures Contract is not published or is otherwise unavailable, then the first nearby Euro Bond Futures Contract will be sold at the Euro Bond Futures Contract Valuation Price for such first nearby Euro Bond Futures Contract on the last reference day (as defined below) the second nearby Euro Bond Futures Contract will be bought at the Euro Bond Futures Contract Valuation Price for such second nearby Euro Bond Futures Contract on the last reference day.

On each Eurex exchange business day on which rolling does not occur because the Euro Bond Futures Contract Valuation Price is not published or is otherwise unavailable for either or both of the first nearby and second nearby Euro Bond Futures Contracts (such day, a “Bond no-roll Eurex exchange business day”; for the avoidance of doubt, a Bond no-roll Eurex exchange business day may include any Eurex exchange business day of the roll period), the Calculation Agent will not calculate any value for the Euro Bond Futures Strategy Index but will publish the last available value.

If, on any Eurex exchange business day immediately following such Bond no-roll Eurex exchange business day, the Euro Bond Futures Contracts are rolled over pursuant to the alternative methodology described above, then the Calculation Agent will apply alternative calculation methods to compute the level of the Euro Bond Futures Strategy Index on such Eurex exchange business day, which can be summarized as follows:

On such Eurex exchange business day immediately following such Bond no-roll Eurex exchange business day, the level of the Euro Bond Futures Strategy Index will be computed as the *product* of:

- the value of the Euro Bond Futures Strategy Index as of the last Eurex exchange business day on which the Euro Bond Futures Contract Valuation Prices for both of the first nearby and second nearby Euro Bond Futures Contracts were available (such day, the "last reference day"); *multiplied* by

- the *sum* of:

  (i) the *daily return ratio* reflecting either:

    (c) if such Eurex exchange business day falls within the roll period, the weighted performance of the first nearby Euro Bond Futures Contract and the weighted performance of the second nearby Euro Bond Futures Contract from the last reference day to such Eurex exchange business day; or

    (d) if such Eurex exchange business day is a first notice date of the first nearby Euro Bond Futures Contract, the *product* of (x) the weighted performance of the first nearby Euro Bond Futures Contract from the last reference day up to the rolling effected as of the opening of the market on such first notice date, (y) the weighted performance of the second nearby Euro Bond Futures Contract from the last reference day up to the rolling effected as of the opening of the market on such first notice date and (z) the performance of the second nearby Euro Bond Futures Contract, including the second nearby contract into which any remaining portion of the first nearby Euro Bond Futures Contract is rolled over on such first notice date, calculated based on the opening price and the official daily settlement price of the second nearby Euro Bond Futures Contract on such first notice date (for the avoidance of doubt, if the official daily settlement price of the second nearby Euro Bond Futures Contract is not published or is otherwise unavailable on such first notice date, then the Calculation Agent will not calculate any value for the Euro Bond Futures Strategy Index but will publish the last available value),

  plus

  (ii) the overnight interest rate for the calculation period.

Publication

The value of the Euro Bond Futures Strategy Index is published on the Bloomberg page FRSIEUB <Index> (or any successor page).

- **Historical Data**

The Base Date for the Index is a date earlier than that on which the Calculation Agent began calculating the Index. Therefore, historical information provided from the Base Date to the date on which the Calculation Agent began calculating the index 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 Base Date using the Methodology. This data does not reflect actual performance, nor was a contemporaneous investment model run of the Index.

Historical levels of the Index are calculated with reference to the Euro Bond Futures Contract Valuation Prices determined based on the latest available data published by the Eurex.

Euro Bond Futures Strategy Index Calculation Formulae

The formulae for the calculation of the Euro Bond Futures Strategy Index are presented below. Investors, however, should be aware that these formulae do not reflect the alternative rolling and calculation methodologies applied when the value of the Euro Bond Futures Contracts is not published or is otherwise unavailable (as further described above).

$$TRI_t = (r_t + \frac{i_{t\text{-}n}}{360} \cdot n)\, TRI_{t-n};$$

$$\begin{cases} r_t = \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}}, \\ \text{when NOT in the 3-day roll period} \\ r_t = (1 - \dfrac{m-1}{3}) \cdot \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}} + \dfrac{m-1}{3} \cdot \dfrac{{}_cP_{2,t}}{{}_cP_{2,t-n}} \\ \text{when on the } m^{th} \text{ day of the roll period, } m = 1, 2, 3 \end{cases}$$

Where

t =The relevant Eurex exchange business day;

TRI_t = The value of Euro Bond Futures Strategy Index as of day t;

$i_{t\text{-}n}$ =Overnight interest rate as of (t - n);

n = The number of actual calendar days between t and the immediately preceding Eurex exchange business day (t - n);

r_t = Daily price return of the value of the Euro Bond Futures Contracts on t;

${}_cP_{1,t}$ = Euro Bond Futures Contract Valuation Price of the first nearby Euro Bond Futures Contract on t; *provided* that, for the avoidance of doubt, once the rolling has been effected in accordance with the above roll methodology and there is no remaining amount to be rolled, the first nearby Euro Bond Futures Contract shall mean the Euro Bond Futures Contract into which the notional investment has been rolled; and

${}_cP_{2,t}$ = Euro Bond Futures Contract Valuation Price of the second nearby Euro Bond Futures Contract on t.

Note: All calculations are based on seven significant figures (rounded at the eighth significant figure), and the value is published up to two decimal places (rounded at the third decimal place).

Adjustments to the Euro Bond Futures Strategy Index

Investors should be aware that if the terms of the Euro Bond Futures Contracts are modified, the Index Committee may take such steps as it considers appropriate in response.

THE EURO BOND FUTURES CONTRACTS

The Euro Bond Futures Contracts underlying the Index are contracts (with maturities as defined by the reference exchange) to buy or sell standardized trading “units”. One trading unit of Euro Bond Futures Contracts equals one Euro Bond issued by the Federal Republic of Germany with a par value of €100,000.

The German Bonds

The German Bonds on which Euro Bond Futures Contracts are based are German Bonds issued by the Federal Republic of Germany. These German Bonds have a remaining term at the time of expiration as defined by the reference exchange, a coupon of 6%.

- **Licensing Information**

Goldman Sachs International is the sole licensing agent for the Index. Questions about licensing the Index can be directed to the individuals listed under “Contact Information” below.

- **Contact Information**

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- **Calculation Agent Website**

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The Index is the exclusive property of Goldman Sachs International, which has contracted with S&P Opco, LLC (a subsidiary of S&P Dow Jones Indices LLC) (“S&P Dow Jones Indices”) to calculate and maintain the Index based on an objective pre-agreed methodology. S&P® is a registered trademark of Standard & Poor’s Financial Services LLC (“SPFS”); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC (“Dow Jones”); and, these trademarks have been licensed to S&P Dow Jones Indices. Neither S&P Dow Jones Indices, SPFS, Dow Jones nor any of their affiliates sponsor and promote the Index and none shall be liable for any errors or omissions in calculating the Index.

The Index relies on information published by the exchange regarding the price of the Euro Bond Futures Contracts as well as the first notice date and other matters. The Calculation Agent and Index Sponsor make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the Index.

Appendix 7
Japanese Government Bond Futures Rolling Strategy Index

A. Additional Risk Factors

The Japanese Government Bond Futures Rolling Strategy Index Relies on the Use of Third Party Information.

The Japanese Government Bond Futures Rolling Strategy Index relies on information published by the reference exchange specified in the table under “Overview of the Underlying Assets” in the relevant Strategy Supplement. The respective index calculation agents and Goldman Sachs International as the sponsor of the Japanese Government Bond Futures Rolling Strategy Index make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the Japanese Government Bond Futures Rolling Strategy Index.

The Japanese Government Bond Futures Rolling Strategy Index Is Not Actively Managed.

The Japanese Government Bond Futures Rolling Strategy Index operates in accordance with a set of pre-determined rolling methodology and formulae and its index calculation agent does not exercise any discretion with respect to the Japanese Government Bond Futures Rolling Strategy Index. The Japanese Government Bond Futures Rolling Strategy Index is, therefore, not managed. Goldman Sachs International as the sponsor of the Japanese Government Bond Futures Rolling Strategy Index is not acting as an investment adviser or performing a discretionary management role with respect to the Japanese Government Bond Futures Rolling Strategy Index and, as a result, has no fiduciary duty to any person in respect of the Japanese Government Bond Futures Rolling Strategy Index.

The Japanese Government Bond Futures Rolling Strategy Index Procures No Rights with Respect to the Underlying Futures Contracts.

The investment exposure provided by the Japanese Government Bond Futures Rolling Strategy Index is synthetic. An investment linked to the Japanese Government Bond Futures Rolling Strategy Index will therefore not make an investor a holder of, or give an investor a direct investment position in, any futures contracts underlying the Japanese Government Bond Futures Rolling Strategy Index.

The Index Calculation Agent Is Contractually Required to Publish a Level for the Japanese Government Bond Futures Rolling Strategy Index Even if the Price of Underlying Futures Contracts Is Unavailable or Disrupted.

If the price of an underlying futures contract is unavailable, or a market disruption event has occurred or is continuing on any given exchange business day, the index calculation agent is nonetheless contractually required to calculate and publish a value based on pre-determined valuation rules. As further described above in the Strategy Description, in those circumstances the Strategy Calculation Agent may, however, delay the volatility or basket rebalancing of the Strategy and use replacement values that may be different from, and higher or lower than, the level of the Japanese Government Bond Futures Rolling Strategy Index as calculated by the index calculation agent.

The Goldman Sachs Group, Inc. May Create and Publish Indices Similar to the Japanese Government Bond Futures Rolling Strategy Index.

The Goldman Sachs Group, Inc. may in the future create and publish other indices, the concepts of which are similar, or identical, to those of the Japanese Government Bond Futures Rolling Strategy Index.

The levels being published on the Bloomberg page of the Japanese Government Bond Futures Rolling Strategy Index (or any successor pages), however, are the only levels that will be used for the calculation of the Strategy, subject to limited exceptions where the level is disrupted. Accordingly, no other published indices (if any) on the futures contracts underlying the Japanese Government Bond Futures Rolling Strategy Index should be treated as the levels of the Japanese Government Bond Futures Rolling Strategy Index, even where the concepts of such indices are similar, or identical, to those of the Japanese Government Bond Futures Rolling Strategy Index.

B. Additional Market Disruption Events

N/A

C. Summary Description

The following overview of the Japanese Government Bond Futures Rolling Strategy Index is a summary and, as such, is necessarily incomplete. This overview should be read in conjunction with, and is qualified in its entirety by, the more detailed description of the Japanese Government Bond Futures Rolling Strategy Index and its operation that follows in this document.

The Japanese Government Bond Futures Rolling Strategy Index (the "**Japanese Bond Futures Index**" or the "**Index**") is a proprietary index designed to provide investors with exposure to the total return (including income from interest) of 10-Year Japanese Government Bond futures contracts (the "**JGB Futures Contracts**") currently listed for trading on the Osaka Securities Exchange (the "**OSE**"). For more details on the JGB Futures Contracts and 10-Year Japanese Government Bonds deliverable under such contracts (the "**JGB Bonds**"), please see the section below entitled "JGB Futures Contracts".

The JGB Futures Contracts expire on specified quarter end dates (one of March, June, September or December). At any given time, there is more than one JGB Futures Contract listed on the OSE (for example, with expirations of September 2014, December 2014 and March 2015). The Index will include the first nearby JGB Futures Contract that has not reached expiration or a roll period (the September 2014 contract in the example). As the first nearby JGB Futures Contract comes to its last trade date (September 10, 2014 is the last trade date in our example), it will be replaced by the next JGB Futures Contract (December 2014 in our example), which is known as the second nearby futures contract. This replacement process is referred to as "rolling". Rolling will be carried out during the three exchange business days starting from, and including, the third to last exchange business day prior to the last trade date of the expiring JGB Futures Contract to, and including, the last exchange business day prior to the last trade date of such expiring JGB Futures Contract. Such period is referred to as the "**roll period**". For further information on the roll methodology, please refer to the section entitled "Roll Methodology" below.

The Index is calculated in Japanese yen on a total return basis and the value of the Index (the "**Index Value**") is calculated on each exchange business day (as defined in "Daily Strategy Value Calculation").

Goldman Sachs International (the "**Index Sponsor**") has retained S&P Opco, LLC (a subsidiary of S&P Dow Jones Indices LLC) to serve as calculation agent (the "**Calculation Agent**") for the Index. In the event the Index Committee (as described below) appoints a replacement Calculation Agent, a public announcement will be made via press release.

Unless otherwise indicated, any public announcement contemplated by this Methodology shall be posted at:

http://www.goldmansachsindices.com or any successor website

We are not incorporating by reference such website or any other website or any materials from any website into this index methodology.

Japanese Bond Futures Index – Various Roles

The Japanese Bond Futures Index is sponsored by Goldman Sachs International but is calculated by the Calculation Agent. The Japanese Bond Futures Index operates in accordance with a set of pre-determined rolling methodologies and formulae and the Calculation Agent does not exercise any discretion with respect to the Japanese Bond Futures Index. The Japanese Bond Futures Index is, therefore, not a managed index. As the Index Sponsor, Goldman Sachs International is not acting as an investment adviser or performing a discretionary management role with respect to the Japanese Bond Futures Index and, as a result, has no fiduciary duty to any person in respect of the Japanese Bond Futures Index.

Japanese Bond Futures Index Starting Value

The Japanese Bond Futures Index has been given a starting value of 100 as of December 31, 1991, which is the base date ("**Base Date**").

Daily Strategy Value Calculation

The Japanese Bond Futures Index is a Japanese yen denominated index and is calculated on each day on which the OSE is open for trading (an "**exchange business day**"). The value of the Japanese Bond Futures Index on any given exchange business day will be calculated as the *product* of (i) the value of the Japanese Bond Futures Index as of the immediately preceding exchange business day *multiplied by* (ii) the *sum* of (x) the daily return ratio of the value of the JGB Futures Contracts (calculated as described below) on such day and (y) the overnight interest rate for the immediately preceding exchange business day multiplied by the applicable day count fraction based on the number of calendar days in the calculation period.

Daily Return Ratio of the Value of the JGB Futures Contracts: On each exchange business day (other than during the roll period as described below), the daily return ratio of the value of JGB Futures Contracts is calculated as the *quotient* of (a) the JGB Futures Contract Valuation Price on the relevant exchange business day *divided by* (b) the JGB Futures Contract Valuation Price on the immediately preceding exchange business day. During the roll period, the calculation of the daily return ratio of the JGB Futures Contracts will reflect the price of the second nearby JGB Futures Contract rather than the first nearby JGB Futures Contract to the extent the Index's investment has been rolled over during the roll period.

JGB Futures Contract Valuation Price: The JGB Futures Contract Valuation Price on any given exchange business day means the last traded price per JGB Futures Contract quoted by the OSE on such exchange business day, provided that if there is a closing special quote per JGB Futures Contract quoted by the OSE such quote shall be deemed to be the relevant JGB Futures Contract last traded price. Special quotes are mechanisms designed to prevent wild short-term price fluctuations.

The Calculation Agent will, however, not calculate the daily index value or will calculate such value pursuant to a different methodology when at any given time the JGB Futures Contract Valuation Prices for the first nearby JGB Futures Contract and/or the second nearby JGB Futures Contract, as applicable, are not published or are otherwise unavailable as further described below under "Price of JGB Futures Contracts Unavailable".

Overnight Interest Rate: The interest rate calculation uses the overnight interest rate as published on Reuters page JPY-BOJ-TONAT and the ACT/365 (Fixed) day count fraction convention (meaning the actual number of days in the relevant period divided by 365). If the overnight interest rate is not published or is otherwise unavailable for the applicable calculation period, then the last available overnight interest rate published on such page will be used as the overnight interest rate for such calculation period.

Publication of Changes to the Methodology

Changes to the Methodology made by the Index Committee will be publicly announced at least 60 exchange business days prior to their effective date. Adjustments made by the Calculation Agent in response to the unavailability of the JGB Futures Contract Valuation Prices will be publicly announced as promptly as is reasonably practicable.

Index Committee

An Index Committee is responsible for overseeing the Index and the Methodology, while the Calculation Agent is responsible for the day to day implementation of the Methodology, for the calculation of the Index, including responding to events as described under "Price of JGB Futures Contracts Unavailable", and for publication of the Index Value. The Index Committee is committed to maintaining the Index as a liquid, tradable index. The Index Committee is currently comprised of three full-time employees of The Goldman Sachs Group, Inc. or one or more of its affiliates.

The Index Committee may exercise limited discretion with respect to the Index, as contemplated by the Methodology. Any such changes or actions are publicly announced as promptly as is reasonably practicable and normally at least five exchange business days prior to their effective date. The Calculation Agent may from time to time consult the Index Committee 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, are confidential. The Index Committee will determine the successor of any of its members.

Roll Methodology

As JGB Futures Contracts have an expiration of specified quarter end dates (March, June, September or December), when the first nearby JGB Futures Contract comes to expiration, it is replaced by the second nearby JGB Futures Contract. For example, a JGB Futures Contract may specify a June expiration. As time passes, the contract expiring in June is replaced by a JGB Futures Contract for delivery in September. This process is referred to as "rolling".

Roll Period: Rolling will be carried out during the three exchange business days starting from, and including, the third last exchange business day prior to the last trade date of the first nearby JGB Futures Contract to, and including, the last exchange business day prior to the last trade date of such JGB Futures Contracts. Such period is referred to from time to time as the "roll period". On each exchange business day of the roll period, one third of the notional investment in the first nearby JGB Futures Contract will be rolled into the second nearby JGB Futures Contract, and the prices at which JGB Futures Contracts are rolled will be based on the JGB Futures Contract Valuation Price for each of the first nearby and second nearby JGB Futures Contracts. Rolling will, however, be carried out pursuant to a different methodology when at any time during the roll period the JGB Futures Contract Valuation Prices for one or both of the first nearby and second nearby JGB Futures Contracts are not published or are otherwise unavailable as further described below.

Price of JGB Futures Contracts Unavailable

Unavailable Outside of the Roll Period: If, on any exchange business day that does not fall within the roll period, the JGB Futures Contract Valuation Price for the first nearby JGB Futures Contract is not published or is otherwise unavailable, then the Calculation Agent will not calculate any value for the Japanese Bond Futures Index but will publish the last available value.

If, on the immediately following exchange business day, the JGB Futures Contract Valuation Price for the first nearby JGB Futures Contract is available, the daily return ratio of the value of the JGB Futures Contracts will be calculated as the *quotient* of (a) the JGB Futures Contract Valuation Price on that exchange business day and (b) the last available JGB Futures Contract Valuation Price (however, for the avoidance of doubt, if such exchange business day is the first day of the roll period and the JGB Futures Contract Valuation Price for the second nearby JGB Futures Contract is not published or is otherwise unavailable on that exchange business day, then, as further described below, the Calculation Agent will not calculate any value for the Japanese Bond Futures Index but will publish the last available value).

Unavailable Within the Roll Period: If the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable at any time during the roll period, then rolling will be carried out pursuant to the following alternative rolling methodology:

- **Case 1:** If the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on <u>the first exchange business day of the roll period</u>, then one half of the notional investment in the first nearby JGB Futures Contract will be rolled into the second nearby JGB Futures Contract on the second exchange business day of the roll period if the JGB Futures Contract Valuation Prices for both the first nearby and second nearby JGB Futures Contracts are available on such second exchange business day, and the second half of the notional investment in the first nearby JGB Futures Contract will be rolled over into the second nearby JGB Futures Contract on the third exchange business day of the roll period if the JGB Futures Contract Valuation Prices for both the first nearby and second nearby JGB Futures Contracts are available on such third exchange business day; however, if the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on such third exchange business day, then rolling of any remaining portion of the notional investment in the first nearby JGB Futures Contract will be carried out as set out below in respect of Case 4.

- **Case 2:** If the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on <u>both of the first and second exchange business days of the roll period</u>, then the entire notional investment in the first nearby JGB Futures Contract will be rolled into the second nearby JGB Futures Contract on the third exchange business day of the roll period; however, if the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on such third exchange business day, then rolling of any remaining portion of the notional investment in the first nearby JGB Futures Contract will be carried out as set out below in respect of Case 4.

- **Case 3:** If the JGB Futures Contract Valuation Price for both of the first nearby and second nearby JGB Futures Contracts is available on the first exchange business day of the roll period, on which one third of the notional investment in the first nearby JGB Futures Contract is rolled over into the second nearby JGB Futures Contract, but the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on the second exchange business day of the roll period, then the remaining two thirds of the notional investment in the first nearby JGB Futures Contract will be rolled into the second nearby JGB Futures Contract on the third exchange business day of the roll period; however, if the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on such third exchange business day, then rolling of any remaining portion of the notional investment in the first nearby JGB Futures Contract will be carried out as set out below in respect of Case 4.

- **Case 4:** In any situation where the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable on the third exchange business day of the roll period (including where such price is not published or is otherwise unavailable on both of the first and third exchange business days of the roll period only, both of the second and third exchange business days of the roll period only or all of the three exchange business days of the roll period), then any remaining amount of the notional investment in the first nearby JGB Futures Contract will be rolled into the second nearby JGB Futures Contract on the last trade date, which is the exchange business day immediately following the third exchange business day of the roll period. On such last trade date, rolling will be effected by using the first traded prices for the first nearby JGB Futures Contract and the second nearby JGB Futures Contract, provided that if, on such last trade date, the first traded price for the first nearby JGB Futures Contract and/or the second nearby JGB Futures Contract is not published or is otherwise unavailable, then the first nearby JGB Futures Contract will be sold at the Valuation Price for such first nearby JGB Futures Contract on the last reference day (as defined below) and the second nearby JGB Futures Contract will be bought at the Valuation Price for such second nearby JGB Futures Contract on the last reference day.

On any given exchange business day on which rolling does not occur because the JGB Futures Contract Valuation Price for one or both of the first nearby and second nearby JGB Futures Contracts is not published or is otherwise unavailable (such day, a "no-roll exchange business day"; for the avoidance of doubt, a no-roll exchange business day may include any exchange business day of the roll period), the Calculation Agent will not calculate any value for the Japanese Bond Futures Index but will publish the last available value.

If, on any exchange business day immediately following such no-roll exchange business day, the JGB Futures Contracts are rolled over pursuant to the alternative methodology described above, then the Calculation Agent will apply alternative calculation methods to compute the level of the Japanese Bond Futures Index on such exchange business day, which can be summarized as follows:

On such exchange business day, the level of the Japanese Bond Futures Index will be computed as the *product* of:

- the value of the Japanese Bond Futures Index as of the last exchange business day on which the Valuation Prices for both of the first nearby and second nearby JGB Futures Contracts were available (such day, the "last reference day"); and

- the *sum* of:

  (i) the *daily return ratio* reflecting either:

    (e) if such exchange business day falls within the roll period, the weighted performance of the first nearby JGB Futures Contract and the weighted performance of the second nearby JGB Futures Contract from the last reference day to such exchange business day; or

    (f) if such exchange business day is the last trade date, the *product* of (x) the weighted performance of the first nearby JGB Futures Contract from the last reference day up to the rolling effected as of the opening of the market on the last trade date, (y) the weighted performance of the second nearby JGB Futures Contract from the last reference day up to the rolling effected as of the opening of the market on the last trade date and (z) the performance of the second nearby JGB Futures Contract, including the second nearby contracts into which any remaining portion of the first nearby JGB Futures Contract is rolled over on the last trade date, from the opening of the market to market close on the last trade date (for the avoidance of doubt, if the last traded price of the second nearby JGB Futures Contract is not published or is otherwise unavailable on such last trade date, then the Calculation Agent will not calculate any value for the Japanese Bond Futures Index but will publish the last available value),

and

(ii) the overnight interest rate for the calculation period.

Publication

The value of the Japanese Bond Futures Index is published on the Bloomberg page FRSIJPB <Index> (or any successor page).

Historical Data

The Base Date for the Index is a date earlier than that on which the Calculation Agent began calculating the Index. Therefore, historical information provided from the Base Date to the date on which the Calculation Agent began calculating the index 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 Base Date using the Methodology. This data does not reflect actual performance, nor was a contemporaneous investment model run of the Index.

Historical levels of the Index are calculated with reference to the JGB Futures Contract Valuation Prices determined based on the latest available data published by the OSE and its predecessor for the relevant futures contracts, the Tokyo Stock Exchange.

Japanese Bond Futures Index Calculation Formulae

The formulae for the calculation of the Japanese Bond Futures Index are presented below. Investors, however, should be aware that these formulae do not reflect the alternative rolling and calculation methodologies applied when the value of the relevant JGB Futures Contracts is not published or is otherwise unavailable (as further described above).

$$TRI_t = (r_t + \frac{i_{t-n}}{360} \cdot n)\, TRI_{t-n};$$

$$\begin{cases} r_t = \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}}, \\ \text{when NOT in the 3-day roll period} \\ r_t = (1 - \dfrac{m-1}{3}) \cdot \dfrac{{}_cP_{1,t}}{{}_cP_{1,t-n}} + \dfrac{m-1}{3} \cdot \dfrac{{}_cP_{2,t}}{{}_cP_{2,t-n}} \\ \text{when on the m}^{\text{th}} \text{ day of the roll period, } m = 1, 2, 3 \end{cases}$$

Where

t =The relevant exchange business day;

TRI_t = The value of Japanese Bond Futures Index as of day t;

i_{t-n} =Overnight interest rate as of (t - n);

n = The number of actual calendar days between t and the immediately preceding exchange business day (t - n);

r_t = Daily price return of the value of the JGB Futures Contracts on t;

${}_{c}P_{1,t}$ = JGB Futures Contract Valuation Price of the first nearby JGB Futures Contract on t; *provided* that, for the avoidance of doubt, once the rolling has been effected in accordance with the above roll methodology and there is no remaining amount to be rolled, the first nearby JGB Futures Contract shall mean the JGB Futures Contract into which the notional investment has been rolled; and

${}_{c}P_{2,t}$ = JGB Futures Contract Valuation Price of the second nearby JGB Futures Contract on t.

Note: All calculations are based on seven significant figures (rounded at the eighth significant figure), and the value is published up to two decimal places (rounded at the third decimal place).

Adjustments to the Japanese Bond Futures Index

Investors should be aware that if the terms of the JGB Futures Contracts are modified, the Index Committee may take such steps as it considers appropriate in response.

JGB Futures Contracts

The JGB Futures Contracts underlying the Japanese Bond Futures Index are contracts to buy or sell standardized trading “units”. One trading unit of JGB Futures Contracts equals one interest bearing JGB Bond with a face value of 100 million yen and a time to maturity at delivery as defined by the reference exchange. At the time the Index invests in them, the futures contracts will have a term to maturity defined by the reference exchange. The JGB Futures Contracts require delivery of publicly offered interest-bearing JGB Bonds with time remaining to maturity as of the issued date and the delivery date defined by the reference exchange. The JGB Futures Contract assumes an annual interest rate of 6%, but each JGB Bond’s interest rate is decided according to the JGB Bond’s market value at the time of issue and will remain unchanged until maturity. The OSE will publish acceptable deliverable JGB Bonds and their conversion factors for every JGB Futures Contract delivery date.

Licensing Information

Goldman Sachs International is the sole licensing agent for the Index. Questions about licensing the Index can be directed to the individuals listed under “Contact Information” below.

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The Index relies on information published by the exchange regarding the price of the JGB Futures Contracts as well as the last trade date and other matters. The Calculation Agent and Index Sponsor make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the Index.

Appendix 8

Emerging Markets Equity Futures Rolling Strategy Index

A. Additional Risk Factors

The Emerging Markets Equity Futures Rolling Strategy Index Relies on the Use of Third Party Information

The Emerging Markets Equity Futures Rolling Strategy Index relies on information published by the reference exchange specified in the table under "Overview of the Underlying Assets" in the relevant Strategy Supplement. The respective index calculation agents and Goldman Sachs International as the sponsor of the Emerging Markets Equity Futures Rolling Strategy Index make no warranty as to the correctness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the levels of the Emerging Markets Equity Futures Rolling Strategy Index.

The Emerging Markets Equity Futures Rolling Strategy Index Is Not Actively Managed

The Emerging Markets Equity Futures Rolling Strategy Index operates in accordance with a set of pre-determined rolling methodology and formulae and its index calculation agent does not exercise any discretion with respect to the Emerging Markets Equity Futures Rolling Strategy Index. The Emerging Markets Equity Futures Rolling Strategy Index is, therefore, not managed. Goldman Sachs International as the sponsor of the Emerging Markets Equity Futures Rolling Strategy Index is not acting as an investment adviser or performing a discretionary management role with respect to the Emerging Markets Equity Futures Rolling Strategy Index and, as a result, has no fiduciary duty to any person in respect of the Emerging Markets Equity Futures Rolling Strategy Index.

The Emerging Markets Equity Futures Rolling Strategy Index Procures No Rights with Respect to the Underlying Futures Contracts

The investment exposure provided by the Emerging Markets Equity Futures Rolling Strategy Index is synthetic. An investment linked to the Emerging Markets Equity Futures Rolling Strategy Index will therefore not make an investor a holder of, or give an investor a direct investment position in, any futures contracts underlying the Emerging Markets Equity Futures Rolling Strategy Index.

The Index Calculation Agent Is Contractually Required to Publish a Level for the Emerging Markets Equity Futures Rolling Strategy Index Even if the Price of Underlying Futures Contracts Is Unavailable or Disrupted

If the price of an underlying futures contract is unavailable, or a market disruption event has occurred or is continuing on any given exchange business day, the index calculation agent is nonetheless contractually required to calculate and publish a value based on pre-determined valuation rules. In those circumstances the Strategy Calculation Agent may, however, delay the rebalancing of the Strategy and use replacement values that may be different from, and higher or lower than, the level of the Emerging Markets Equity Futures Rolling Strategy Index as calculated by the index calculation agent.

The Goldman Sachs Group, Inc. May Create and Publish Indices Similar to the Emerging Markets Equity Futures Rolling Strategy Index

The Goldman Sachs Group, Inc. may in the future create and publish other indices, the concepts of which are similar, or identical, to those of the Emerging Markets Equity Futures Rolling Strategy Index.

The levels being published on the Bloomberg page of the Emerging Markets Equity Futures Rolling Strategy Index (or any successor pages), however, are the only levels that will be used for the calculation of the Strategy, subject to limited exceptions where the level is disrupted. Accordingly, no other published indices (if any) on the futures contracts underlying the Emerging Markets Equity Futures Rolling Strategy Index should be treated as the levels of the Emerging Markets Equity Futures Rolling Strategy Index, even where the concepts of such indices are similar, or identical, to those of the Emerging Markets Equity Futures Rolling Strategy Index.

The Rolling Methodology of the Underlying Futures Contracts and Other Factors May Have a Negative Impact on the Value of the Emerging Markets Equity Futures Rolling Strategy Index

As the underlying futures contracts have a quarterly expiration period, when the first nearby contracts come to expiration, they are replaced by the second nearby futures contracts pursuant to a specific methodology. This process is referred to as "rolling". The relevant underlying index may fluctuate in value quite differently from the performance of the underlying futures contracts due to losses or gains that may arise from the rolling. In addition, the rolling methodology may be disclosed, and such disclosure may result in market activity that could adversely affect the value of the Emerging Markets Equity Futures Rolling Strategy Index.

Hedging Activity by Goldman Sachs International By Way of Active Trades In Futures Contracts Underlying the Emerging Markets Equity Futures Rolling Strategy Index May Have a Detrimental Impact on the Value of the Emerging Markets Equity Futures Rolling Strategy Index

Goldman Sachs International may hedge its exposure to the Emerging Markets Equity Futures Rolling Strategy Index, including by actively trading in the futures contracts underlying the Emerging Markets Equity Futures Rolling Strategy Index. Such activities may be particularly frequent during, but are not necessarily confined to, periods in which Goldman Sachs International's exposure fluctuates as a result of either the rebalancing methodologies used by the Strategy, or the rolling of futures contracts in accordance with the methodology of the Emerging Markets Equity Futures Rolling Strategy Index. The market for the futures contracts which are tracked by the Emerging Markets Equity Futures Rolling Strategy Index is relatively new, and therefore small, and as a result the futures contracts which are tracked by the Emerging Markets Equity Futures Rolling Strategy Index may have limited liquidity. Trading by Goldman Sachs International in the futures contracts underlying the Emerging Markets Equity Futures Rolling Strategy Index may negatively affect the value of the Emerging Markets Equity Futures Rolling Strategy Index.

Trading and Other Transactions by Goldman Sachs Group Could Materially Affect the Level of the Emerging Markets Equity Futures Rolling Strategy Index

Goldman Sachs Group is a full service financial services firm engaged in a range of market activities. Goldman Sachs Group may issue, arrange for the issue of, or enter into financial instruments referenced to, the Emerging Markets Equity Futures Rolling Strategy Index or any underlying futures contracts and arrange for the distribution of these financial instruments. These activities could adversely affect the value of the Emerging Markets Equity Futures Rolling Strategy Index, and may present Goldman Sachs Group with a conflict of interest.

Sponsors of the Equity Index Underlying Futures Contracts included in the Emerging Markets Equity Futures Rolling Strategy Index Have Authority to Make Determinations That Could Materially Affect the Value of the Emerging Markets Equity Futures Rolling Strategy Index

Determinations that the sponsors and operators of the index underlying the futures contracts included in the Emerging Markets Equity Futures Rolling Strategy Index may make in connection with the composition, calculation and maintenance of this index may materially affect the levels of the futures contracts and, in turn, the levels of the Emerging Markets Equity Futures Rolling Strategy Index. Those sponsors and operators have no obligation to take the interests of Goldman Sachs International or any holders of investments linked to the Emerging Markets Equity Futures Rolling Strategy Index into consideration for any reason in carrying out their functions and have generally disclaimed all liability to the extent permitted by law.

In addition, sponsors of this index have licensed, and may continue to license, their index, sub-indices or strategies for use by other market participants, for publication in newspapers and periodicals, for distribution by information and data dissemination services and for various other purposes, any of which may contribute to an increased level of investment in these indices, which could affect the levels of the futures indices and, in turn, the level of the Emerging Markets Equity Futures Rolling Strategy Index.

The Emerging Markets Equity Futures Rolling Strategy Index Provides Exposure to Stock Markets in Emerging Markets, Which Are Subject to Special Risks

The Emerging Markets Equity Futures Rolling Strategy Index provides exposure, although indirect, to the stock markets in emerging markets. Political and economic structures in countries with emerging economies or stock markets may be undergoing or may undergo significant evolution and rapid development, and such countries may lack the social, political, economic and regulatory stability of more developed countries including, without limitation, a significant risk of currency value fluctuation or inflation, change in law or regulations or change in the interpretation of law and regulations or the implementation of policies. Such instability may result from, among other things, authoritarian governments, or military involvement in political and economic decision-making, including changes or attempted changes in governments through extra-constitutional or constitutional means;

popular unrest associated with demands for improved political, economic, social or regulatory conditions; internal insurgencies; hostile relations with neighboring countries; and ethnic, religious and racial disaffections or conflict. Certain of such countries may have in the past failed to recognize private property rights and may have at times nationalized or expropriated the assets of private companies or significantly restricted the direct or indirect investment by foreign entities. As a result, the risks from investing in those countries, including, without limitation, the risks of nationalization, expropriation or forced divestiture of assets, may be heightened. In addition, unanticipated political, social, economic or regulatory developments may affect the values or liquidity of investments in those countries. In addition, any change in the law or regulations or any change in the interpretation of law or regulations or the implementation of policies may impact the availability of replacement assets in the event any relevant underlying security is discontinued, cancelled, terminated, delisted or otherwise ceased to exist. Furthermore, the small size and inexperience of the securities markets in certain countries and the limited volume of trading in securities may make an investment in those countries illiquid and more volatile than investments in more established markets. There may be little financial or accounting information available with respect to local issuers, and it may be difficult as a result to assess the value or prospects of an investment in one of these issuers. All of these factors may have an effect on the value of the Emerging Markets Equity Futures Rolling Strategy Index.

B. Additional Market Disruption Events

N/A

C. Summary Description

Overview

The Emerging Markets Equity Futures Rolling Strategy Index (the "EM Equity Futures Index") is a proprietary index designed to provide investors with a synthetic exposure to the total return (including income from interest) of the first nearby E-mini MSCI Emerging Markets futures contracts (the "EM Equity Futures Contracts")., EM Equity Futures Contracts are listed for trading on ICE Futures U.S. (formerly NYSE Liffe U.S.). Prior to that, EM Equity Futures Contracts were listed for trading on the Chicago Mercantile Exchange (the "CME"). For more details on the EM Equity Futures Contracts and the MSCI Emerging Markets Index, please see below the section entitled "E-mini MSCI Emerging Markets Futures Contracts".

The EM Equity Futures Index operates in accordance with a set of pre-determined rolling methodology and formulae, and Standard & Poor's, the index calculation agent, does not exercise any discretion with respect to the EM Equity Futures Index. The EM Equity Futures Index is, therefore, not a managed index. As the index sponsor, Goldman Sachs International is not acting as an investment adviser or performing a discretionary management role with respect to the EM Equity Futures Index and, as a result, has no fiduciary duty to any person in respect of the EM Equity Futures Index.

EM Equity Futures Index Starting Value

The EM Equity Futures Index has been given a starting value of 100 as of January 2, 2009, which is the initial calculation date of the EM Equity Futures Index.

Daily Index Value Calculation

The EM Equity Futures Index is a U.S. dollar denominated index and is calculated on each day on which the NYSE is open for trading (such day, an "index business day"). The value of the EM Equity Futures Index on any given index business day will be calculated as the *product* of (i) the value of the EM Equity Futures Index as of the immediately preceding index business day and (ii) the *sum* of (x) the daily return ratio of the value of the EM Equity Futures Contracts on such day and (y) the overnight interest rate for the calculation period.

Daily Return Ratio of the Value of the EM Equity Futures Contracts: On any given index business day (other than during the roll period as described below), the daily return ratio of the value of EM Equity Futures Contracts is calculated as the *quotient* of (a) the EM Equity Futures Contracts Valuation Price on the relevant index business day and (b) the EM Equity Futures Contracts Valuation Price on the immediately preceding index business day. During the roll period, the calculation of the daily return ratio of the EM Equity Futures Contracts will reflect the price of the second nearby EM Equity Futures Contracts into which the first nearby EM Equity Futures Contracts are gradually rolled over.

EM Equity Futures Contracts Valuation Price: The EM Equity Futures Contracts Valuation Price on any given index business day means the official daily settlement price per EM Equity Futures Contracts quoted by the relevant exchange on such index business day.

Overnight Interest Rate: The interest rate calculation uses the overnight interest rate as published on Global Insight DRI page USD-FEDERAL-FUNDS-H15 and the ACT/360 day count fraction, as defined in the 2006 ISDA Definitions. If the overnight interest rate is not published or is otherwise unavailable for the applicable calculation period, then the last available overnight interest rate published on such page will be used as the overnight interest rate for such calculation period.

The calculation agent will, however, not calculate the daily index value or will calculate such value pursuant to a different methodology when at any given time the EM Equity Futures Contracts Valuation Prices for the first nearby EM Equity Futures Contracts and/or the second nearby EM Equity Futures Contracts, as applicable, are not published or are otherwise unavailable as further described below.

Roll Methodology

As EM Equity Futures Contracts have a quarterly expiration period (March, June, September or December), when the first nearby EM Equity Futures Contracts come to expiration, they are replaced by the second nearby EM Equity Futures Contracts. For example, an EM Equity Futures Contract purchased and held in May may specify a June expiration. As time passes, the contract expiring in June is replaced by an EM Equity Futures Contract for delivery in September. This process is referred to as "rolling".

Roll Period: Rolling will be carried out during the five index business days starting from, and including, the fifth last index business day prior to the last trade date of the first nearby EM Equity Futures Contracts to, and including, the last index business day prior to the last trade date of such EM Equity Futures Contracts. Such period is referred to from time to time as the "roll period". On each index business day of the roll period, one fifth of the notional investment in the first nearby EM Equity Futures Contracts will be rolled into the second nearby EM Equity Futures Contracts, and the prices at which EM Equity Futures Contracts are rolled shall be based on the EM Equity Futures Contracts Valuation Price for each of the first nearby and second nearby EM Equity Futures Contracts. Rolling will, however, be carried out pursuant to a different methodology when at any time during the roll period the EM Equity Futures Contracts Valuation Prices for one or both of the first nearby and second nearby EM Equity Futures Contracts are not published or is otherwise unavailable as further described below.

Price of EM Equity Futures Contracts Unavailable

Unavailable Outside of the Roll Period: If, on any index business day that does not fall within the roll period, the EM Equity Futures Contracts Valuation Price for the first nearby EM Equity Futures Contracts is not published or is otherwise unavailable, then the calculation agent will not calculate any value for the EM Equity Futures Index but will publish the last available value.

If, on the immediately following index business day, the EM Equity Futures Contracts Valuation Price for the first nearby EM Equity Futures Contracts is available, the daily return ratio of the value of the EM Equity Futures Contracts will be calculated as the *quotient* of (a) the EM Equity Futures Contracts Valuation Price on that index business day and (b) the last available EM Equity Futures Contracts Valuation Price (however, for the avoidance of doubt, if such index business day is the first day of the roll period and the EM Equity Futures Contracts Valuation Price for the second nearby EM Equity Futures Contracts is not published or is otherwise unavailable on that index business day, then, as further described below, the calculation agent will not calculate any value for the EM Equity Futures Index but will publish the last available value.

Unavailable Within the Roll Period: If the EM Equity Futures Contracts Valuation Price for one or both of the first nearby and second nearby EM Equity Futures Contracts is not published or is otherwise unavailable at any time during the roll period, then rolling will be carried out pursuant to the following alternative rolling methodology:

Day 1: The weight W_1 of the notional investment in the first nearby EM Equity Futures Contracts on the first index business day of the roll period will be calculated as follows and will be rolled into the second nearby EM Equity Futures Contracts:

$$W_1 = \frac{1}{5} * d_1$$

Where:

d_1 is a digital factor of 1 or 0. When the EM Equity Futures Contracts Valuation Price for each of the first nearby and second nearby EM Equity Futures Contracts is published and available on the first index business day of the roll period, it will be 1. Otherwise, it will be 0.

Day 2: The weight W_2 of the notional investment in the first nearby EM Equity Futures Contracts on the second index business day of the roll period will be calculated as follows and will be rolled into the second nearby EM Equity Futures Contracts:

$$W_2 = \frac{1}{4} * (1 - W_1) * d_2$$

Where:

W_1 is the weight of the notional investment actually rolled on the first index business day of the roll period as calculated above; and ***d_2*** is a digital factor of 1 or 0. When the EM Equity Futures Contracts Valuation Price for each of the first nearby and second nearby EM Equity Futures Contracts is published and available on the second index business day of the roll period, it will be 1. Otherwise, it will be 0..

Day 3: The weight W_3 of the notional investment in the first nearby EM Equity Futures Contracts on the third index business day of the roll period will be calculated as follows and will be rolled into the second nearby EM Equity Futures Contracts:

$$W_3 = \frac{1}{3} * (1 - W_1 - W_2) * d_3$$

Where:

W_1 is the weight of the notional investment actually rolled on the first index business day of the roll period as calculated above;

W_2 is the weight of the notional investment actually rolled on the second index business day of the roll period as calculated above; and

d_3 is a digital factor of 1 or 0. When the EM Equity Futures Contracts Valuation Price for each of the first nearby and second nearby EM Equity Futures Contracts is published and available on the third index business day of the roll period, it will be 1. Otherwise, it will be 0.

Day 4: The weight W_4 of the notional investment in the first nearby EM Equity Futures Contracts on the fourth index business day of the roll period will be calculated as follows and will be rolled into the second nearby EM Equity Futures Contracts:

$$W_4 = \frac{1}{2} * (1 - W_1 - W_2 - W_3) * d_4$$

Where:

W_1 is the weight of the notional investment actually rolled on the first index business day of the roll period as calculated above;

$\boldsymbol{W_2}$ is the weight of the notional investment actually rolled on the second index business day of the roll period as calculated above; and

$\boldsymbol{W_3}$ is the weight of the notional investment actually rolled on the third index business day of the roll period as calculated above; and$\boldsymbol{d_4}$ is a digital factor of 1 or 0. When the EM Equity Futures Contracts Valuation Price for each of the first nearby and second nearby EM Equity Futures Contracts is published and available on the fourth index business day of the roll period, it will be 1. Otherwise, it will be 0.

Day 5: The weight W_5 of the notional investment in the first nearby EM Equity Futures Contracts on the fifth index business day of the roll period will be calculated as follows and will be rolled into the second nearby EM Equity Futures Contracts:

$$W_5 = (1 - W_1 - W_2 - W_3 - W_4) * d_5$$

Where:

$\boldsymbol{W_1}$ is the notional investment amount actually rolled as of the first index business day of the roll period;

$\boldsymbol{W_2}$ is the weight of the notional investment actually rolled on the second index business day of the roll period as calculated above;

$\boldsymbol{W_3}$ is the weight of the notional investment actually rolled on the third index business day of the roll period as calculated above; and

$\boldsymbol{W_4}$ is the weight of the notional investment actually rolled on the fourth index business day of the roll period as calculated above; and$\boldsymbol{d_5}$ is a digital factor of 1 or 0. When the EM Equity Futures Contracts Valuation Price for each of the first nearby and second nearby EM Equity Futures Contracts is published and available on the fifth index business day of the roll period, it will be 1. Otherwise, it will be 0.

In any situation where the EM Equity Futures Contracts Valuation Price for one or both of the first nearby and second nearby EM Equity Futures Contracts is not published or is otherwise unavailable on the fifth index business day of the roll period, then any remaining amount of the notional investment in the first nearby EM Equity Futures Contracts will be rolled into the second nearby EM Equity Futures Contracts on the last trade date, which is the index business day immediately following the fifth index business day of the roll period. On such last trade date, rolling will be effected by using the first traded prices for the first nearby EM Equity Futures Contracts and the second nearby EM Equity Futures Contracts, provided that if, on such last trade date, the first traded price for the first nearby EM Equity Futures Contracts and/or the first traded price for the second nearby EM Equity Futures Contracts is not published or otherwise unavailable, then the first nearby EM Equity Futures Contracts will be sold at the Valuation Price for such first nearby EM Equity Futures Contracts on the last reference day (as defined below) and the second nearby EM Equity Futures Contracts will be bought at the Valuation Price for such second nearby EM Equity Futures Contracts on the last reference day.

On any given index business day on which rolling does not occur because the EM Equity Futures Contracts Valuation Price for one or both of the first nearby and second nearby EM Equity Futures Contracts is not published or is otherwise unavailable (such day, a "no-roll index business day"), the calculation agent will not calculate any value for the EM Equity Futures Index but will publish the last available value.

If, on any index business day immediately following such no-roll index business day, the EM Equity Futures Contracts are rolled over pursuant to the alternative methodology described above, then the calculation agent will apply alternative calculation methods to compute the level of the EM Equity Futures Index on such index business day, which can be summarized as follows:

On such index business day, the level of the EM Equity Futures Index will be computed as the *product* of:

the value of the EM Equity Futures Index as of the last index business day on which the Valuation Prices for both of the first nearby and second nearby EM Equity Futures Contracts were available (such day, the "last reference day"); and

the *sum* of:

(i) the *daily return ratio* reflecting either:

(a) if such index business day falls within the roll period, the weighted performance of the first nearby EM Equity Futures Contracts and the weighted performance of the second nearby EM Equity Futures Contracts from the last reference day to such index business day; or

(b) if such index business day is a last trade date, the *product* of (x) the weighted performance of the first nearby EM Equity Futures Contracts from the last reference day up to the rolling effected as of the opening of the market on the last trade date, (y) the weighted performance of the second nearby EM Equity Futures Contracts from the last reference day up to the rolling effected as of the opening of the market on such last trade date and (z) the performance of the second nearby EM Equity Futures Contracts, including the second nearby contracts into which any remaining portion of the first nearby EM Equity Futures Contracts are rolled over on such last trade date, calculated based on the opening price and the official daily settlement price of the second nearby EM Equity Futures Contracts on such last trade date (for the avoidance of doubt, if the official daily settlement price of the second nearby EM Equity Futures Contracts is not published or is otherwise unavailable on such last trade date, then the calculation agent will not calculate any value for the EM Equity Futures Index but will publish the last available value),

and

(ii) the overnight interest rate for the calculation period.

Publication

Publication of the EM Equity Futures Index commenced on January 2, 2009. The EM Equity Futures Index is published on the Bloomberg page FRSIEME <Index> (or any successor page).

EM Equity Futures Index Calculation Formulae

The formulae for the calculation of the EM Equity Futures Index are presented below.

$$TRI_t = (r_t + \frac{i_{t-n}}{360} * n) TRI_{t-n}$$

$$r_t = \frac{{}_cP_{1,t}}{{}_cP_{1,t-n}}$$

When NOT in the 5-day roll period

$$r_t = (1 - \frac{m-1}{5}) * \frac{cP_{1,t}}{cP_{1,t-n}} + \frac{m-1}{5} * \frac{cP_{2,t}}{cP_{2,t-n}}$$

When on the m[th] day of the roll period, m = 1, 2, 3, 4, 5 and the EM Equity Futures Contracts Valuation Price for each of the first nearby and second nearby EM Equity Futures Contracts is published and available for each and all of the five index business days during the roll period.

$$r_t = (1 - \sum_{i=1}^{m} W_{i-1}) * \frac{cP_{1,t}}{cP_{1,t-n}} + \sum_{i=1}^{m} W_{i-1} * \frac{cP_{2,t}}{cP_{2,t-n}}$$

When on the mth day of the roll period, m = 1, 2, 3, 4, 5 and if the EM Equity Futures Contracts Valuation Price for one or both of the first nearby and second nearby EM Equity Futures Contracts is not published or is otherwise unavailable on one or more index business days during the roll period.

Where

t =	The relevant index business day;
TRI_t =	The value of EM Equity Futures Index as of day t;
i_{t-n} =	Overnight interest rate as of (t - n);
n =	The number of actual calendar days between t and the immediately preceding index business day (t - n);
r_t =	Daily price return of the value of the EM Equity Futures Contracts on t;
${}_cP_{1,t}$ =	EM Equity Futures Contracts Valuation Price of the first nearby EM Equity Futures Contracts on t; *provided* that, for the avoidance of doubt, once the rolling has been effected in accordance with the above roll methodology and there is no remaining amount to be rolled, the first nearby EM Equity Futures Contracts shall mean the EM Equity Futures Contracts into which the notional investment has been rolled;
${}_cP_{2,t}$ =	EM Equity Futures Contracts Valuation Price of the second nearby EM Equity Futures Contracts on t ; and
Wi =	The weight of the notional investment actually rolled on the i^{th} index business day of the roll period as calculated above and W_0 is 0.

Note: All calculations are based on 7 significant figures (rounded at the 8th significant figure), and the value is published with up to 2 decimal places (rounded at the 3rd decimal place).

E-mini MSCI Emerging Markets Futures Contracts

The E-mini MSCI Emerging Markets futures contracts underlying the EM Equity Futures Index are three-month contracts to buy or sell standardized trading "units". One trading unit of E-mini MSCI Emerging Markets futures contracts equals $50 *multiplied* by the MSCI Emerging Markets Index (price return version). The E-mini MSCI Emerging Markets futures contract closest to expiration at any given time is known as the "first nearby" futures contract.

MSCI EM Index*:* The MSCI EM Index offers a representation of emerging markets (Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, Turkey) by targeting all companies with a market capitalization within the top 85% of their investable equity universe, subject to a global minimum size requirement (each, an "MSCI EM Constituent Country Index"). It is based on the "MSCI Global Investable Market Indices Methodology", which is available at www.msci.com.

The MSCI EM Price Index in USD is reported by Bloomberg under the ticker symbol "MXEF <Index>".

The components of each MSCI EM Constituent Country Index used to be selected by MSCI from among the universe of securities eligible for inclusion in the Country Index so as to target an 85% free float-adjusted market representation level within each of a number of industry groups, subject to adjustments to (i) provide for sufficient liquidity, (ii) reflect foreign investment restrictions (only those securities that can be held by non-residents of the country corresponding to the relevant Country Index are included) and (iii) meet certain other investability criteria (as noted above, for a more detailed discussion of such criteria, see the "MSCI Global Investable Market Indices Methodology", which is available at www.msci.com). Following a change in MSCI's methodology implemented in May 2008, the 85% target is now measured at the level of the country universe of eligible securities rather than the industry group level—so each MSCI EM Constituent Country Index will seek to include the securities that represent 85% of the free float-adjusted market capitalization of all securities eligible for inclusion—but will still be subject to liquidity, foreign investment restrictions and other investability adjustments. MSCI defines "free float" as total shares excluding shares held by strategic investors such as governments, corporations, controlling shareholders and management, and shares subject to foreign ownership restrictions.

Calculation of the MSCI EM Constituent Country Indices

Each MSCI EM Constituent Country Index is a free float-adjusted market capitalization index that is designed to measure the market performance, including price performance of the equity securities in that country (such equity securities are referred to in this section individually as an "Index Component" and collectively as "Index Components"). Each MSCI EM Constituent Country Index is calculated in the relevant local currency as well as in U.S. dollars, with price, gross and net returns.

MSCI's "price indices" measure market performance, including price performance, whereas MSCI's "total return indices" measure market performance, including price performance, as well as income from dividend payments. For a more detailed discussion of how the country indices are calculated, see the "MSCI Index Calculation Methodology", which is available at www.msci.com.

Each Index Component is included in the relevant MSCI EM Constituent Country Index at a weight that reflects the ratio of its free float-adjusted market capitalization (i.e., free public float multiplied by price) to the free float-adjusted market capitalization of all the Index Components in that Country Index.

Calculation of the MSCI EM Index

The performance of the MSCI EM Index on any given day represents the weighted performance of all of the Index Components included in all of the MSCI EM Constituent Country Indices. Each Index Component in the MSCI EM Index is included at a weight that reflects the ratio of its free float-adjusted market capitalization (i.e., free public float multiplied by price) to the free float-adjusted market capitalization of all the Index Components included in all of the MSCI EM Constituent Country Indices.

Maintenance of and Changes to the MSCI EM Index

MSCI maintains the MSCI EM Index with the objective of reflecting, on a timely basis, the evolution of the underlying equity markets and segments. In maintaining the MSCI EM Index, emphasis is also placed on continuity, continuous investability of constituents, replicability, index stability and minimizing turnover in the indices.

As part of the changes to MSCI's methodology which became effective in May 2008, maintenance of the MSCI EM Index falls into three broad categories:

- semi-annual reviews, which will occur each May and November and will involve a comprehensive reevaluation of the market, the universe of eligible securities and other factors involved in composing the indices;

- quarterly reviews, which will occur each February and August and will focus on significant changes in the market since the last semi-annual review; and

- ongoing event-related changes, which will generally be reflected in the indices at the time of the event and will include changes resulting from mergers, acquisitions, spin-offs, bankruptcies, reorganizations, issuances and other extraordinary transactions, corporate actions and events.

Based on these reviews, additional components may be added, and current components may be removed, at any time. MSCI generally announces all changes resulting from semi-annual reviews, quarterly reviews and ongoing events in advance of their implementation, although in exceptional cases they may be announced during market hours for same or next day implementation.

Additional information on the MSCI Emerging Markets Index is available on the following website: www.msci.com. This website or any material it includes is not incorporated by reference into this document.

Adjustment; Rebasement

Investors should be aware that if the terms of the EM Equity Futures Contracts are modified or the MSCI Emerging Markets Index is rebased or otherwise adjusted, Goldman Sachs International, as sponsor of the EM Equity Futures Index, may take such steps as it considers appropriate in response to such modification, rebasement or adjustment.

The Goldman Sachs Overnight Money Market Indices

Section 1: Introduction

This version of the description (the "**Index Description**") of the Indices (as defined below) is correct as at 21 December 2017. This Index Description sets out the rules applicable to each of the Goldman Sachs Overnight Money Market Indices, a group of notional rules-based proprietary indices which Goldman Sachs International (or its successor) as index sponsor (the "**Index Sponsor**") may create from time to time (each such index, an "**Index**" and together, the "**Indices**").

Sections 1 to 8 hereof constitute the "**General Description**" in relation to the Indices. In relation to a particular Index, the Index Description for such Index shall comprise the General Description as supplemented by the details specified as applicable to such Index in the relevant "Index Supplement" set out in the Schedule hereto. The Index Supplement completes the General Description and contains, amongst other details, the Overnight Interest Rate Option, the Overnight Interest Rate Business Days and the Index Inception Date with respect to the relevant Index. References in the General Description to "the Index" shall be construed as references to the relevant Index.

The information set out in this Index Description reflects the policies of, and is subject to change by the Index Sponsor. The Index Calculation Agent is initially Goldman Sachs International and may thereafter be such person as the Index Sponsor may appoint from time to time to make certain determinations and calculations and to publish the value of the Indices as further described in this Index Description (the "**Index Calculation Agent**"). The Index Sponsor does not have any obligation to ensure that the Index Calculation Agent continues to publish any Index and the Index Sponsor may discontinue publication of any Index at any time.

The Index Sponsor owns the copyright and all other rights in the Indices and in this Index Description. Any use of any such intellectual property rights must be with the consent of the Index Sponsor.

Upon each occurrence of an update to a new version of this Index Description, the most recent version shall be deemed to be in force from the date of such update and replace in its entirety the preceding version such that, in the event of any conflict between the preceding version and the most recent version, the most recent version shall prevail.

Contents:

Section 2: Overview of the Index

Purpose of the Index: The Index is intended to express the notional returns accruing to a hypothetical investor from an investment in a notional overnight money account denominated in a Reference Currency that accrues interest at a rate determined by reference to the Overnight Interest Rate Option for such currency. The Index will generate positive notional returns if the Overnight Interest Rate is positive.

Determination of the Index Value: The Index was established on the Index Inception Date and the closing level of the Index on the Index Inception Date was equal to the Initial Index Value.

The Index Calculation Agent will calculate the Index Value on each Index Business Day in accordance with the formula set out in Section 3: *Calculation of the Index Value*. The Index Value will be expressed as a number and will therefore not be denominated in any currency.

The Index Value on any Index Business Day will be an amount equal to the product of (a) the Index Value on the immediately preceding Overnight Interest Rate Business Day, and (b) the greater of zero and one plus the product of the relevant Overnight Interest Rate and the relevant Day Count Fraction.

This Section 2: *Overview of the Index* is subject to and qualified by the remainder of this Index Description. Purposes, aims and intentions expressed may not be achieved.

Section 3: Calculation of the Index Value

Index Value:	The closing level of the Index on the Index Inception Date was 100. The closing level of the Index (the "**Index Value**" or "**MM_t**") on any other Index Business Day (t) will be calculated by the Index Calculation Agent and expressed as a number in accordance with the following formula: $MM_t = MM_{Rt} \times Max\left(0, 1 + \left(R_{Rt} \times DCF_{Rt,t}\right)\right)$ Where: MM_{Rt} means the Index Value on the Overnight Interest Rate Business Day (Rt); Rt means Overnight Interest Rate Business Day immediately preceding the Index Business Day (t); R_{Rt} means the Overnight Interest Rate for the Overnight Interest Rate Business Day (Rt); and $DCF_{Rt,t}$ means the Day Count Fraction for the period from, and including, the Overnight Interest Rate Business Day (Rt), to, but excluding, the Index Business Day (t). If on any day the Index Value is equal to or less than zero, the Index Value shall be deemed to be zero on such day and for all future days.
Index Inception Date:	The Index Inception Date is deemed to be an Index Business Day and an Overnight Interest Rate Business Day as set out in the Index Supplement.
Overnight Interest Rate:	On any Overnight Interest Rate Business Day (t), the rate determined for such day by the Index Calculation Agent using the Overnight Interest Rate Option as set out in the Index Supplement, provided that if such rate is not published on such Overnight Interest Rate Business Day or, if published, the Index Sponsor determines in its reasonable judgment that such rate is manifestly incorrect the Index Sponsor will use the Overnight Interest Rate determined in respect of the immediately preceding Overnight Interest Rate Business Day. For the avoidance of doubt the Overnight Interest Rate may be negative.
Index Business Day	Any day which is not a Saturday or Sunday
Overnight Interest Rate Business Day:	Any day which is a day on which commercial banks are open for general business (including dealings in foreign exchange and foreign currency deposits) in each relevant city as set out under "Overnight Interest Rate Business Days" in the Index Supplement, provided that if "TARGET" is specified then such day must be a day on which the Trans-European Automated Real-time Gross settlement Express Transfer (TARGET) system is open.
Overnight Interest Rate Option:	Has the meaning given to it in the relevant Index Supplement for the Index.

"**Day Count Fraction**" means, for any period of time (including the first but excluding the last day of that period):

(i) if "**Actual/365**" or "**Actual/Actual-ISDA**" or "**Actual/Actual**" is specified, the actual number of days in the period divided by 365 (or, if any portion of the period falls in a leap year, the sum of the number of days falling in the leap year divided by 366 and the number not falling in the leap year divided by 365);

(ii) if "**Actual/Actual-AFB**" is specified, the actual number of days in the period divided by 365 (or, if the Interest Payment Date at the end of the period falls in a leap year, 366);

(iii) if "**Actual/365 (Fixed)**" is specified, the number of days in that period divided by 365;

(iv) if "**Actual/360**" is specified, the actual number of days in the period divided by 360;

(v) if "**30/360**", "**360/360**" or "**Bond Basis**" is specified, the number of days in the period divided by 360 calculated on a formulaic basis as follows:

$$\text{Day Count Fraction} = \frac{[360 \times (Y_2 - Y_1)] + [30 \times (M_2 - M_1)] + (D_2 - D_1)}{360}$$

where:

"Y_1" is the year, expressed as a number, in which the first day of the period falls;

"Y_2" is the year, expressed as a number, in which the day immediately following the last day included in the period falls;

"M_1" is the calendar month, expressed as a number, in which the first day of the period falls;

"M_2" is the calendar month, expressed as number, in which the day immediately following the last day included in the period falls;

"D_1" is the first calendar day, expressed as a number, of the period, unless such number would be 31, in which case D_1 will be 30; and

"D_2" is the calendar day, expressed as a number, immediately following the last day included in the period, unless such number would be 31 and D_1 is greater than 29, in which case D_2 will be 30;

(vi) if "**30E/360**" or "**Eurobond Basis**" is specified, the number of days in the period, divided by 360 calculated on a formulaic basis as follows:

$$\text{Day Count Fraction} = \frac{[360 \times (Y_2 - Y_1)] + [30 \times (M_2 - M_1)] + (D_2 - D_1)}{360}$$

where:

"Y_1" is the year, expressed as a number, in which the first day of the period falls;

"Y_2" is the year, expressed as a number, in which the day immediately following the last day included in the period falls;

"M_1" is the calendar month, expressed as a number, in which the first day of the period falls;

"M_2" is the calendar month, expressed as a number, in which the day immediately following the last day included in the period falls;

"D_1" is the first calendar day, expressed as a number, of the period, unless such number would be 31, in which case D_1 will be 30; and

"D_2" is the calendar day, expressed as a number, immediately following the last day included in the period, unless such number would be 31, in which case D2 will be 30; and

(vii) if “**30E/360 (ISDA)**” is specified, the number of days in the period divided by 360, calculated on a formulaic basis as follows:

$$\text{Day Count Fraction} = \frac{[360 \times (Y_2 - Y_1)] + [30 \times (M_2 - M_1)] + (D_2 - D_1)}{360}$$

where:

“$\mathbf{Y_1}$” is the year, expressed as a number, in which the first day of the period falls;

“$\mathbf{Y_2}$” is the year, expressed as a number, in which the day immediately following the last day included in the period falls;

“$\mathbf{M_1}$” is the calendar month, expressed as a number, in which the first day of the period falls;

“$\mathbf{M_2}$” is the calendar month, expressed as a number, in which the day immediately following the last day included in the period falls;

“$\mathbf{D_1}$” is the first calendar day, expressed as a number, of the period, unless (i) that day is the last day of February or (ii) such number would be 31, in which case D_1 will be 30; and

“$\mathbf{D_2}$” is the calendar day, expressed as a number, immediately following the last day included in the period, unless (i) that day is the last day of February but not the final date or (ii) such number would be 31, in which case D_2 will be 30; and

(viii) such other number determined as specified in the Strategy Supplement.

Section 4: Index Sponsor and Index Calculation Agent

All determinations and calculations made by the Index Sponsor or Index Calculation Agent, as applicable, shall be made by it in its sole and absolute discretion by reference to such factors as the Index Sponsor or Index Calculation Agent, as applicable, deems appropriate and will (in the absence of manifest error) be final, conclusive and binding. The Index Sponsor or Index Calculation Agent, as applicable, shall have no responsibility to any person for any good faith errors or omissions in any determination or calculation.

Section 5: Change in Methodology and Overnight Interest Rate and Termination

Change in Methodology and Overnight Interest Rate

In calculating and determining the Index Value, the Index Calculation Agent will, subject as provided below, employ the methodology described above and its application of such methodology shall be conclusive and binding. While the Index Calculation Agent currently employs the above described methodology to calculate the Index, no assurance can be given that fiscal, market, regulatory, juridical, financial or other circumstances will not arise that would, in the view of the Index Sponsor, necessitate or make desirable a modification of or change to such methodology and the Index Sponsor shall be entitled to make any such modification or change.

In particular, if the rate specified as the Overnight Interest Rate Option is not published (or if published, is determined to be manifestly incorrect) for a period longer than three Overnight Interest Rate Business Days, the Index Sponsor may substitute the Overnight Interest Rate Option with an alternative overnight interest rate option for the Reference Currency.

The Index Sponsor may make modifications to the terms of the Index in any manner that it may deem necessary or desirable, including (without limitation) to correct any manifest or proven error or to cure, correct or supplement any ambiguity or defective provision contained in this Index Description. In particular, but without limitation, the Index Sponsor may, at any time and without notice, change the frequency of calculation of the Index Value and make such adjustment to the methodology described in this Index Description as it deems necessary, in its sole and absolute discretion, to take account of the amended frequency of calculation. The Index Sponsor may in its sole and absolute discretion restate the Index Value to correct any errors in any data or calculation.

The Index Sponsor will make available any such modification or change and the effective date thereof in accordance with Section 6: Availability and Publication of Index Values and Adjustments.

Termination

The Index Sponsor may, in its sole and absolute discretion, at any time and without notice, terminate the calculation and publication of the Index.

Index Committee

The Index Sponsor may, but is not required to, establish an Index Committee with respect to the Index. The Index Committee, if established, may comprise employees of the Index Sponsor and external members with a relevant academic or professional background. The role, responsibilities and powers of the Index Committee, if established, will be pre-defined and will be limited to approving such changes to the Index Methodology, or the third party data sources used to calculate the Index Value (including the Overnight Interest Rate Option), in each case where the Index Sponsor is permitted to do so as contemplated herein.

Section 6: Availability and Publication of Index Values and Adjustments

General

The Index Calculation Agent will make available the Index Value on each Index Business Day, subject to the right of the Index Sponsor to discontinue publication in its sole and absolute discretion.

Within one month of making any determination in accordance with Section 5: Change in Methodology and Overnight Interest Rate and Termination, the Index Sponsor will update the information posted to the "The Goldman Sachs Overnight Money Market Indices" section of https://marquee.gs.com (or any successor page).

Index Value

The Index Value will be published:

(a) on the Index Bloomberg Page set out in the Index Supplement; and

(b) on such other information sources as the Index Sponsor may select from time to time at its sole and absolute discretion.

Miscellaneous

Any publication described in this Section 6: Availability and Publication of Index Values and Adjustments may be restricted by means determined as appropriate for such purpose by the Index Sponsor or Index Calculation Agent in its sole and absolute discretion, including, but not limited to, password protection restricting access to a limited set of persons in accordance with arrangements agreed between the Index Sponsor and such persons.

The Index Sponsor may, at any time and without notice, change with respect to the Index the place of publication of any Index Value.

The Index Sponsor may, at any time and without notice, change the frequency of publication of the Index Value, including discontinuing publication permanently without notice.

The Index Sponsor and the Index Calculation Agent accept no legal liability to any person for publishing or not continuing to publish for any period of time any Index Value at any particular place or any particular time.

Section 7: Disclaimer

IN CALCULATING THE INDEX, THE INDEX CALCULATION AGENT WILL OBTAIN AND USE DATA AND INFORMATION FROM THIRD PARTY SOURCES. NEITHER THE INDEX CALCULATION AGENT NOR THE INDEX SPONSOR WILL INDEPENDENTLY VERIFY SUCH INFORMATION, GUARANTEES THE ACCURACY AND/OR THE COMPLETENESS OF SUCH DATA OR INFORMATION AND CONSEQUENTLY NEITHER THE INDEX CALCULATION AGENT NOR THE INDEX SPONSOR (NOR THEIR RESPECTIVE AFFILIATES OR SUBSIDIARIES) GUARANTEES THE ACCURACY AND/OR COMPLETENESS OF THE INDEX. NEITHER THE INDEX CALCULATION AGENT NOR THE INDEX SPONSOR SHALL BE LIABLE (WHETHER IN CONTRACT, TORT OR OTHERWISE) TO ANY PERSON FOR ANY ERROR IN THE COMPUTATION, OR DISSEMINATION OF THE INDEX VALUE, OF THE INDEX AND NEITHER THE INDEX CALCULATION AGENT NOR THE INDEX SPONSOR IS UNDER ANY OBLIGATION TO ADVISE ANY PERSON OF ANY ERROR IT BECOMES AWARE OF.

NEITHER THE INDEX CALCULATION AGENT NOR THE INDEX SPONSOR MAKES ANY EXPRESS OR IMPLIED REPRESENTATIONS OR WARRANTIES AS TO (A) THE ADVISABILITY OF PURCHASING OR ASSUMING ANY RISK IN CONNECTION WITH ANY TRANSACTION LINKED TO THE INDEX (B) THE INDEX VALUE AT ANY PARTICULAR TIME ON ANY PARTICULAR DATE (C) THE RESULTS TO BE OBTAINED BY ANY INVESTOR IN A PRODUCT LINKED TO THE PERFORMANCE OF THE INDEX OR ANY COMPONENT OF THE INDEX OR (D) ANY OTHER MATTER. NEITHER THE INDEX CALCULATION AGENT NOR THE INDEX SPONSOR MAKES ANY EXPRESS OR IMPLIED REPRESENTATIONS OR WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INDEX OR ANY DATA OR INFORMATION INCLUDED THEREIN.

THE INDEX HAS BEEN STRUCTURED AND THE INDEX VALUE OF THE INDEX IS CALCULATED WITHOUT REGARD TO ANY TRANSACTION LINKED TO SUCH INDEX. THE INDEX SPONSOR AND THE INDEX CALCULATION AGENT HAVE NO OBLIGATION TO TAKE THE INTERESTS OF ANY PERSON INTO CONSIDERATION IN STRUCTURING THE INDEX OR IN CALCULATING THE INDEX VALUE OF SUCH INDEX.

WITHOUT LIMITING ANY OF THE FOREGOING, IN NO EVENT SHALL THE INDEX CALCULATION AGENT OR THE INDEX SPONSOR HAVE ANY LIABILITY (WHETHER IN CONTRACT, TORT OR OTHERWISE) TO ANY PERSON FOR ANY DIRECT, INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL OR ANY OTHER DAMAGES (INCLUDING LOST PROFITS) EVEN IF NOTIFIED OF THE POSSIBILITY OF SUCH DAMAGES.

NOTHING IN THIS DISCLAIMER SHALL EXCLUDE OR LIMIT LIABILITY TO THE EXTENT SUCH EXCLUSION OR LIMITATION IS NOT PERMITTED BY LAW.

Section 8: Risk Factors

Risk factors in relation to a direct notional investment in the Index are set out below. This Index Description does not describe all of the risks associated with a direct notional investment in the Index. Risk factors in relation to a transaction which is linked to the performance of the Index may be set out in the relevant documents in respect of such transaction:

Risks relating to the Index

No assurance can be given that the methodology underlying the Index will be successful in producing positive returns or that the Index will outperform any other alternative investment index

The Index Is Not Actively Managed

The value of the Index is a simple function of the previous Index Value and the Overnight Interest Rate Option. There will be no active management of the Index so as to enhance returns beyond those embedded in the Index. Market participants often may adjust their investment promptly in view of market, political, financial or other factors. An actively managed product may potentially respond more directly and appropriately to immediate market, political, financial or other factors than a non-actively managed product.

Historical Levels of the Index May Not Be Indicative of Future Performance

Past performance of the Index is no guide as to future performance. The Index is based on historical performance of the Overnight Interest Rate Option. However, the actual performance of the Index in the future may bear little relation to the historical value of the Index.

The Index Sponsor Has Discretion to Make Certain Determinations Which Could Adversely Affect the Value of the Index

The Index Sponsor has discretion to make determinations that could adversely affect the value of the Index. In making those determinations, the Index Sponsor will not be required to, and will not, take any persons interests into account or consider the effect its determinations will have on the value of the Index. The Index Sponsor will not be liable for their determinations. The Index Sponsor reserves the right to alter the methodology used to calculate the Index or the formula underlying the Index or to discontinue calculation and dissemination of such Index and an alteration may result in a decrease in the value of the Index. As such, many aspects of the Index may change in the future, including, without limitation, the formulae, methodology and third party data sources.

The circumstances in which the Index Sponsor may exercise discretion include, but are not limited to, those situations described in Section 5: Change in Methodology and Overnight Interest Rate Option and Termination.

The Index Sponsor Relies Upon Third Party Data Sources Which May Be Inaccessible and/or Inaccurate

The Index Sponsor relies upon third party external sources to obtain certain inputs necessary to compute the Index. The inability of the Index Sponsor to source necessary data to carry out the Index formula may affect the Index Value. In addition, the Index Sponsor makes no warranty as to the correctness or completeness 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 Value.

In particular, if the rate specified as the Overnight Interest Rate Option is not published (or if published, is determined by the Index Sponsor to be manifestly incorrect) for a period longer than three Overnight Interest Rate Business Days, the Index Sponsor may substitute the Overnight Interest Rate Option with an alternative overnight interest rate option for the relevant currency. This substitution may have a negative impact on the performance of the Index.

Overnight Interest Rates are not Guaranteed Rates and do not Reflect Government Deposit Guarantees

Each Overnight Interest Rate Option is not a rate applicable to guaranteed deposits and will not reflect any insurance or guarantee by any governmental agency in any jurisdiction (including without limitation the United States Federal Deposit Insurance Corporation, the Deposit Insurance Fund or any other governmental agency).

Index Supplement - USD Goldman Sachs Overnight Money Market Index

The information specified in the table below with respect to the USD Goldman Sachs Overnight Money Market Index (the "**Index**") constitutes the Index Supplement relating to such Index. The General Description of the Index is set out in the document headed "The Goldman Sachs Overnight Money Market Indices". Terms used in this Schedule shall be deemed to be defined as such for the purposes of the General Description (as defined in *Section 1: Introduction* of the General Description). Unless otherwise specified, terms used but not defined in this Schedule shall have the meanings given to them in the General Description. Each Index Supplement is supplemental to and must be read in conjunction with the General Description.

This version of the Index Supplement in respect of the Index is correct as at 28 March 2011.

Overnight Interest Rate Option:	USD-Federal Funds-H.15
Overnight Interest Rate Business Day:	New York
Day Count Fraction:	Act/360
Reference Currency:	USD
Index Inception Date:	10 January 1994
Index Bloomberg Page	GSMMUSD, or any successor thereto

Definitions:

USD-Federal Funds-H.15	In respect of any day, the overnight Federal Funds Effective Rate US, referred as "USD-Federal-Funds-H15, expressed as a percentage, which is published on the Reuters Screen RSF.REC.USONFFE=.NaE Page in respect of such day.

This material is strictly private and confidential

Not for onward distribution

The Goldman Sachs Common Strategy Terms

Date: 23 February 2017

INTRODUCTION, APPLICATION, COPYRIGHT AND INCORPORATION

1. Introduction and Incorporation

This document, the Goldman Sachs Common Strategy Terms (as may be amended from time to time as provided herein, the "**Common Strategy Terms**"), comprises certain rules, disclaimers, risk factors and other information applicable to certain notional rules-based proprietary strategies which Goldman Sachs International or its successor(s) (the "**Strategy Sponsor**") may create from time to time (each, a "**Strategy**" and together, the "**Strategies**").

To the extent that these Common Strategy Terms are explicitly referred to and/or incorporated by reference in respect of a Strategy, they should be read in conjunction with the following documents:

(i) the relevant document(s) describing the operation of strategies of the same type as such Strategy (the "**General Description**"); and

(ii) the relevant supplement to such General Description specifying, amongst other things, the name of such Strategy and specific terms, dates and/or parameters applicable to such Strategy (the "**Strategy Supplement**").

The Common Strategy Terms may be amended or modified from time to time at the discretion of the Strategy Sponsor in accordance with the terms set out herein and upon each amendment or modification this document shall be updated to a new version. Following an update, the most recent version shall be deemed to be in force from the date of such update and replace in its entirety the preceding version such that, in the event of any conflict between the preceding version and the most recent version, the most recent version shall prevail.

Any or all of the provisions and sections of these Common Strategy Terms may be incorporated into and made applicable to the relevant General Description and/or the relevant Strategy Supplement in respect of a Strategy. When the relevant General Description and/or the relevant Strategy Supplement in respect of a Strategy incorporates these Common Strategy Terms, unless such document states otherwise, the most recent version of the Common Strategy Terms shall be deemed to be applicable, as updated from time to time.

2. Application

The Common Strategy Terms, when read together with the relevant General Description and the relevant Strategy Supplement in respect of a Strategy, will constitute the "**Strategy Description**" in respect of such Strategy.

Capitalised terms used in these Common Strategy Terms but not defined herein have the meaning given to them in the relevant General Description or Strategy Supplement, as the case may be. In the event of any inconsistency between the provisions of the relevant General Description and/or the relevant Strategy Supplement and the provisions of these Common Strategy Terms, the provisions of the relevant General Description and/or the relevant Strategy Supplement will prevail. In respect of each Strategy, in the event of any inconsistency between the provisions of the relevant General Description and/or the relevant Strategy Supplement, the provisions of the relevant Strategy Supplement will prevail.

In respect of each Strategy, the Strategy Sponsor will appoint a strategy calculation agent (the "**Strategy Calculation Agent**") and may appoint one or more weight calculation agents (each "**Weight Calculation Agent**" and together with the Strategy Calculation Agent, each a "**Calculation Agent**" and together the "**Calculation Agents**"), each as specified in the relevant General Description and/or the relevant Strategy Supplement to make certain determinations and calculations and, in respect of the Strategy Calculation Agent only, to publish the value of such Strategy as more particularly described in the relevant General Description and/or the relevant Strategy Supplement. The Strategy Sponsor does not have any obligation to ensure that the relevant Strategy Calculation Agent continues to publish, and the Strategy Sponsor may discontinue publication of, the value of any Strategy at any time. The Strategy Sponsor may at any time in respect of a Strategy appoint one or more replacement Strategy Calculation Agents including itself or an affiliate.

The Strategy Sponsor may also appoint other agents and/or third party data providers in relation to a Strategy to obtain certain inputs necessary to compute the value of such Strategy. The Strategy Sponsor does not have any obligation to ensure that these agents and/or third party providers continue to provide inputs necessary to compute the value of a Strategy. The Strategy Sponsor may change any agents and/or third party data providers appointed in respect of a Strategy at any time.

None of the Strategies are sponsored, endorsed, sold, or promoted by the sponsor of any underlying index, financial instrument, asset, price, level, component or other underlying (each, a "**Strategy Component**") comprising, directly or indirectly, a Strategy, other than where the Strategy Sponsor is also the sponsor of such Strategy Component. Such sponsor(s) does(do) not make any representation whatsoever, whether express or implied, either as to the results to be obtained from the use of any such Strategy Component and/or the prices, levels or values at which any Strategy Component stands at any particular time on any particular date or otherwise.

Each Strategy is a synthetic product and the exposure of each Strategy to any position in a Strategy Component (which may itself represent a notional investment in one or more other Strategy Components) is purely notional. There is no actual portfolio of underlying indices, financial instruments, assets or other underlyings or components to which any person is entitled or in which any person has any ownership interest (whether legal, beneficial or otherwise), and there is no obligation on the Strategy Sponsor or the Strategy Calculation Agent to promote or purchase, enter into, and/or hold positions in any Strategy Component, or transactions or investments that are linked to any Strategy Component at any time. References in any Strategy Description to any investment, disposal or acquisition of any Strategy Component should not be construed as imposing any obligation on the Strategy Sponsor, the Strategy Calculation Agent or any person to actually acquire or dispose of any such Strategy Component, investment or other property but are references to and relate solely to the calculation of the value of each Strategy.

Investors in any product linked to a Strategy should read and understand these Common Strategy Terms in full. In particular, investors must read the sections headed "Conflicts of Interest", "Risk Factors" and "Disclaimers" in addition to the additional disclaimers, conflicts of interest and risk factors (if any) set out in the relevant General Description, the relevant Strategy Supplement and/or the other relevant strategy documentation elements in respect of each Strategy and each of its Strategy Components prior to making any investment decision.

3. Copyright

The Strategy Sponsor owns the copyright and all other rights to the applicable Strategies. No use or publication may be made of a Strategy or any value thereof without the prior written approval of the Strategy Sponsor.

DETERMINATIONS OF GOLDMAN SACHS AS STRATEGY SPONSOR AND/OR CALCULATION AGENT

Unless otherwise specified in the Strategy Description, all determinations and calculations that involve the exercise of expert judgement or discretion (other than those that are purely mechanical and, where relevant, implemented in accordance with the relevant methodology) made by the Strategy Sponsor or, only when Goldman Sachs is appointed as a Calculation Agent, the Calculation Agent, as the case may be, in respect of a Strategy shall be made in good faith and in a commercially reasonable manner. All such determinations and calculations will be subject to the Strategy Sponsor's or the Calculation Agent's (as applicable) policies and procedures and will (in the absence of manifest error) be final, conclusive and binding. The Strategy Sponsor and/or Calculation Agent, as applicable, shall have no responsibility to any person for any errors or omissions in any determination or calculation. In making any determinations with respect to a Strategy, the Strategy Sponsor and Calculation Agent do not owe any person any fiduciary duties in respect of a Strategy and are not required to take the interests of any person into account in making any determination with respect thereto.

DISRUPTION EVENTS AND CONSEQUENCES

Disruption Events

(i) Disruption events applicable to a Strategy Component which is an index, as determined by the Strategy Sponsor (such Strategy Component, an "Index Strategy Component")

(a) If an Index Strategy Component (an "**Affected Index Strategy Component**") is either:

(I) not calculated and announced by the relevant component's sponsor or component's data sponsor but is calculated and announced by a successor sponsor or successor data sponsor acceptable to the Strategy Sponsor; or

(II) replaced by a successor component using, in the determination of the Strategy Sponsor, the same or a substantially similar formula for and method of calculating that Index Affected Strategy Component,

then, in the case of paragraph (I) above, the Affected Index Strategy Component shall continue to be a Strategy Component, and, in the case of paragraph (II) above, such successor asset (a "**Successor Index Strategy Component**") will be deemed to become a Strategy Component and shall replace the Affected Index Strategy Component (such event, a "**Successor Index Strategy Component Event**"), and, in each case, the Strategy Sponsor may, acting in reasonable manner and in good faith, make such adjustments to the terms of a Strategy as it deems appropriate to account for such change (and such replacement and/or adjustment will be deemed to be effective as of the date determined by the Strategy Sponsor).

(b) In respect of an Index Strategy Component (including any such Strategy Component of which the Strategy Sponsor and/or any of its affiliates is the Strategy Component's sponsor) (a "**Sponsor Disrupted Index Strategy Component**"):

(I) the Strategy Component's sponsor or Strategy Component's data sponsor for such Sponsor Disrupted Index Strategy Component or the sponsor of any component of such Sponsor Disrupted Index Strategy Component announces that it will make a material change in the formula for or the method of calculating such Sponsor Disrupted Index Strategy Component (or any component thereof) or in any other way materially modifies such Sponsor Disrupted Index Strategy Component (or any component thereof) (other than such a modification prescribed, as of the inception date of a Strategy Component, in such formula or method (as may be specified in the Strategy Supplement) for the purpose of maintaining such Sponsor Disrupted Index Strategy Component (or such component thereof) in the event of changes to its composition (including, but not limited to, its constituent stock and capitalization, if applicable, and other routine events));

(II) such Sponsor Disrupted Index Strategy Component (or any component thereof) is permanently cancelled by its sponsor or data sponsor (or sponsor of such component thereof) without there being a Successor Index Strategy Component (or successor component thereof), or ceases to exist or is no longer tradable (as determined by the Strategy Sponsor), including as a result of any member of the Goldman Sachs Group discontinuing an underlying strategy or index of which it is a sponsor; or

(III) such Strategy Component's sponsor or data sponsor (or sponsor of any component thereof) fails to calculate and announce the level of such Sponsor Disrupted Index Strategy Component (or such component thereof) ,

then the Strategy Sponsor may, in its sole and absolute discretion, in respect of such Sponsor Disrupted Index Strategy Component take one of, or both of, or neither of the following actions:

(A) remove the Sponsor Disrupted Index Strategy Component and/or select an alternative index to replace the Sponsor Disrupted Index Strategy Component (provided that the Strategy Sponsor shall use commercially reasonable efforts to select a replacement Strategy Component that it considers, in its sole and absolute discretion, to be a similar alternative), and may make such adjustments to the terms of a Strategy as it deems appropriate to account for such removal and/or replacement; or

(B) in the case of paragraph (I) and (III) above, determine that no action be taken in respect of such Sponsor Disrupted Index Strategy Component.

(ii) Disruption events applicable to a Strategy Component which is a futures contract, as determined by the Strategy Sponsor (such Strategy Component, a "Futures Contract Strategy Component")

(a) If, in respect of a Futures Contract Strategy Component (an "**Affected Futures Contract Strategy Component**"), any one or more of the following occurs:

(I) it is not calculated or quoted by or traded on the relevant reference exchange (as determined by the Strategy Sponsor) but is calculated or quoted by and traded on a successor exchange acceptable to the Strategy Sponsor;

(II) it is replaced by a successor futures contract having, in the determination of the Strategy Sponsor, the same or substantially similar terms as that Affected Futures Contract Strategy Component,

then in the case of paragraph (I) above, the Affected Futures Contract Strategy Component shall continue to be a Futures Contract and, in the case of paragraph (II) above, such successor futures contract (a "**Successor Futures Contract Strategy Component** ") will be deemed to become a Futures Contract Strategy Component and shall replace the Affected Futures Contract Strategy Component (such event, a "**Successor Futures Contract Strategy Component Event**") and, in each case, the Strategy Sponsor may, acting in reasonable manner and in good faith, make such adjustments to the terms of a Strategy as it deems appropriate to account for such change (and such replacement and/or adjustment will be deemed to be effective as of the date determined by the Strategy Sponsor).

(b) If, in respect of a Futures Contract Strategy Component (a "**Disrupted Futures Contract Strategy Component** "), any one or more of the following occurs:

(I) any term of such Disrupted Futures Contract Strategy Component is: (A) changed or modified by the relevant reference exchange (including, without limitation, any change or modification in the contract specifications, the delivery or settlement date, the month of expiration, methodology for calculating the settlement price of such Disrupted Futures Contract Strategy Component, the rules and procedures governing the trading, the clearing, settlement and any other related matters of such Disrupted Futures Contract Strategy Component), or (B) otherwise subject to any order, ruling directive or law of any government agency or body; or

(II) trading in such Disrupted Futures Contract Strategy Component never commences, is permanently discontinued at any time, ceases to exist or is no longer tradable (as determined by the Strategy Sponsor), in each case, without there being a Successor Futures Contract Strategy Component,

then the Strategy Sponsor may, in its sole and absolute discretion, acting in reasonable manner and in good faith, take one of, or both of, or neither of the following actions:

(A) remove the Disrupted Futures Contract Strategy Component and/or select any futures contract (other than the Disrupted Futures Contract Strategy Component) to replace the Disrupted Futures Contract Strategy Component (provided that the Strategy Sponsor shall use commercially reasonable efforts to select a replacement Strategy Component that it considers, in its sole and absolute discretion, to be a similar alternative), and may make such adjustments to the terms of a Strategy as it deems appropriate to account for such removal and/or replacement;

(B) amend, in the Strategy Sponsor's sole and absolute discretion, on either a permanent or temporary basis, the methodology used to determine which futures contract of the relevant expiration month will constitute the relevant Futures Contract Strategy Component for the purposes of a Strategy, with the aim of preserving the existing approximate time period between the settlement dates of any pair of two Futures Contract Strategy Components whilst taking into account, among other criteria, the liquidity and volatility of the relevant Futures Contract Strategy Components (and such replacement and/or adjustment will be deemed to be effective as of the date determined by the Strategy Sponsor).

(iii) Disruption events applicable to a Strategy Component which is a share, as determined by the Strategy Sponsor (such Strategy Component, a "Share Strategy Component")

(a) In respect of a Strategy that is calculated in accordance with the policies and practices of a third party Strategy Calculation Agent Methodology (as defined in the relevant Strategy Description), following the determination by the Strategy Calculation Agent that an Extraordinary Event has occurred in respect of a Share Strategy Component (an "**Affected Share Strategy Component**") the Strategy Calculation Agent will adjust the Strategy Value in accordance with the Strategy Calculation Agent Methodology.

(b) In respect of all other Strategies, following the determination by the Strategy Sponsor that an Extraordinary Event has occurred in respect of an Affected Share Strategy Component the Strategy Sponsor may in respect of such Affected Share Strategy Component in its sole and absolute discretion:

(I) determine the appropriate adjustment, if any, to be made to one or more determinations under such Strategy as the Strategy Sponsor determines appropriate to account for the Extraordinary Event and determine the effective date of that adjustment. The relevant adjustments may include, without limitation, adjustments to account for changes in volatility, expected dividends, stock loan rate or liquidity relevant to such Affected Share Strategy Component. The Strategy Sponsor may (but need not) determine the appropriate adjustment by reference to the adjustment in respect of such Extraordinary Event made by any futures or options exchange to relevant contracts on such Affected Share Strategy Component traded on that exchange;

(II) following any adjustment to the settlement terms of options on such Affected Share Strategy Component traded on an options exchange, make the appropriate adjustment, if any, to one or more determinations under such Strategy as the Strategy Sponsor determines appropriate, which adjustment will be effective as of the date determined by the Strategy Sponsor to be the effective date of the corresponding adjustment made by such future or options exchange, as applicable. If futures or options on the Affected Share Strategy Component are not traded on an exchange, the Strategy Sponsor will make such adjustment, if any, to one or more determinations under such Strategy as the Strategy Sponsor determines appropriate, with reference to the rules of and precedents (if any) set by a relevant exchange to account for the Extraordinary Event that in the determination of the Strategy Sponsor would have given rise to an adjustment by such exchange if such contracts were so traded;

(III) remove the Affected Share Strategy Component and/or select an alternative share to replace the Affected Share Strategy Component, and make such adjustments to the terms of a Strategy as it deems appropriate to account for such removal.

(b) The following terms shall have the following meanings:

"**Extraordinary Event**" means, in respect of a Share Strategy Component, each of a Delisting, an Insolvency, a Merger Event, a Nationalisation and a Tender Offer, or any analogous circumstances, as determined by the Strategy Sponsor or Strategy Calculation Agent (as applicable) in its sole and absolute discretion;

"**Delisting**" means, in respect of a Share Strategy Component, the reference exchange (as determined by the Strategy Sponsor or Strategy Calculation Agent (as applicable)) announces that pursuant to the rules of such reference exchange, such Share Strategy Component ceases (or will cease) to be listed, traded, or publicly quoted on such reference exchange for any reason (other than a Merger Event or Tender Offer) and are not immediately re-listed, re-traded, or re-quoted on an exchange or quotation system located in the same country as such reference exchange (or, where such reference exchange is within the European Union, in a member state of the European Union);

"**Insolvency**" means that by reason of the voluntary or involuntary liquidation, bankruptcy, insolvency, dissolution, or winding-up of or any analogous proceeding affecting the issuer of a Share Strategy Component, (I) all such Share Strategy Component is required to be transferred to a trustee, liquidator, or other similar official, or (II) holders of such Share Strategy Component become legally prohibited from transferring them;

"**Merger Date**" means the closing date of a Merger Event or, where a closing date cannot be determined under the local law applicable to such Merger Event, such other date as determined by the Strategy Sponsor or Strategy Calculation Agent (as applicable);

"**Merger Event**" means, in respect of a Share Strategy Component, any of the following:

(I) a reclassification or change of such Share Strategy Component that results in a transfer of, or an irrevocable commitment to transfer all such Share Strategy Component outstanding to another entity or person;

(II) a consolidation, amalgamation, merger, or binding share exchange of the issuer of such Share Strategy Component with or into another entity or person (other than a consolidation, amalgamation, merger, or binding share exchange in which such issuer is the continuing entity and which does not result in a reclassification or change of all of such Share Strategy Component outstanding);

(III) a takeover offer, tender offer, exchange offer, solicitation, proposal, or other event by any entity or person to purchase or otherwise obtain 100 per cent. (100%) of the outstanding Share Strategy Component that results in a transfer of, or an irrevocable commitment to transfer, all such Share Strategy Component (other than such Share Strategy Component owned or controlled by such other entity or person); or

(IV) a consolidation, amalgamation, merger, or binding share exchange of the issuer of such Share Strategy Component or its subsidiaries with or into another entity in which such issuer is the continuing entity and which does not result in a reclassification or change of all such Share Strategy Component outstanding but results in the outstanding Share Strategy Component (other than such Share Strategy Component owned or controlled by such other entity) immediately prior to such event collectively representing less than 50 per cent. (50%) of the outstanding Share Strategy Component immediately following such event;

"**Nationalisation**" means that all the Share Strategy Component or all or substantially all the assets of the issuer of such Share Strategy Component are nationalised, expropriated, or are otherwise required to be transferred to any governmental agency, authority, entity, or instrumentality thereof;

"**Tender Offer**" means a takeover offer, tender offer, exchange offer, solicitation, proposal, or other event by any entity or person that results in such entity or person purchasing, or otherwise obtaining, or having the right to obtain, by conversion or other means, greater than 10 per cent. (10%) and less than 100 per cent. (100%) of the outstanding voting shares of the issuer of a Share Strategy Component, as determined by the Strategy Sponsor or Strategy Calculation Agent (as applicable), based upon the making of filings with governmental or self-regulatory agencies or such other information as the Strategy Sponsor or Strategy Calculation Agent (as applicable) determines to be relevant; and

"**Tender Offer Date**" means, in respect of a Tender Offer, or, the date on which voting shares of the issuer of a Share Strategy Component in the amount of the applicable percentage threshold are actually purchased or otherwise obtained, as determined by the Strategy Sponsor or Strategy Calculation Agent (as applicable).

(iv) Disruption events applicable to a Strategy Component which is an exchange traded fund (ETF), as determined by the Strategy Sponsor (such Strategy Component, an "ETF Strategy Component")

In respect of an ETF Strategy Component (an "**Affected ETF Strategy Component**"):

(a) paragraph (iii) above shall apply to such Affected ETF Strategy Component such that all references to "Affected Share Strategy Component" and "Share Strategy Component" shall be replaced with "Affected ETF Strategy Component" and "ETF Strategy Component" respectively;

(b) the definition of "Extraordinary Event" in paragraph (ii) above shall be deleted and be replaced with the following:

""**Extraordinary Event**" means, in respect of an ETF Strategy Component, each of a Delisting, an Insolvency, a Merger Event, a Nationalisation, a NAV Publication Suspension and a Tender Offer";

(c) if at any time the index underlying the exchange traded fund of such Affected ETF Strategy Component and/or the terms and conditions governing the assets, contracts and instruments invested in or held by such exchange traded fund are changed in a material respect (as determined by the Strategy Sponsor), or if such exchange traded fund in any other way is modified so that it does not, in the opinion of the Strategy Sponsor, fairly represent the net asset value of such Affected ETF Strategy Component had those changes or modifications not been made, then, from and after that time, the Strategy Sponsor will make those calculations and adjustments as, in the good faith judgment of the Strategy Sponsor, may be necessary in order to arrive at a price of an exchange traded fund comparable to such exchange traded fund as if those changes or modifications had not been made, and calculate the closing prices with reference to such exchange traded fund, as adjusted. Accordingly, if such exchange traded fund is modified in a way that the price of its shares is a fraction of what it would have been if it had not been modified (for example, due to a split or a reverse split), then the Strategy Sponsor will adjust the price in order to arrive at a price of such Affected ETF Strategy Component as if it had not been modified (for example, as if the split or the reverse split had not occurred). The Strategy Sponsor also may determine that no adjustment is required by the modification of the method of calculation; and

(d) the following term shall have the following meaning:

"**NAV Publication Suspension**" means that, in the determination of the Strategy Sponsor, the management company of the exchange traded fund of an ETF Strategy Component, or any other entity who has been delegated the responsibility to publish the net asset value of such ETF Strategy Component, has failed to or will fail to, or has not published or will not publish, the net asset value of such ETF Strategy Component, and such failure to publish or non-publication will, in the determination of the Strategy Sponsor, in its sole and absolute discretion, have a material effect on such Strategy and will be for more than a short period and/or will not be of a temporary nature.

(v) Disruption events applicable in respect of all Strategy Components

If, in respect of a Strategy or a Strategy Component, any one or more of the following events (each, a "**Disruption Event**") occur:

(a) the Strategy Sponsor becomes aware of (i) the adoption of, or change in, any applicable law or (ii) the promulgation of, or any change in, the interpretation of any applicable law by a court, tribunal or regulatory authority with competent jurisdiction, which has the effect that (x) the performance by the Strategy Sponsor or Strategy Calculation Agent of their respective roles in respect of a Strategy has become unlawful, impracticable or would result in materially increased costs to them in whole or in part for any reason, or (y) any relevant entity would be prevented from entering into transactions in respect of such Strategy or Strategy Component (including any Strategy Component where the Strategy Sponsor and/or any of its affiliates is sponsor) by any applicable law or regulation;

(b) (i) the Strategy Sponsor determines that a market participant, as a result of a market-wide condition relating to such Strategy and/or Strategy Component would (x) 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 such Strategy Component, or (y) incur a materially increased cost in doing so, including due to any capital requirements or other law or regulation, or (ii) any other event described in the Strategy Description as an Additional Market Disruption Event occurs (in each case, a "**Hedging Disruption**");

(c) the occurrence of a systems failure, natural or man-made disaster, act of God, armed conflict, act of terrorism, riot or labour disruption or any similar intervening circumstance that is beyond the reasonable control of the Strategy Sponsor, Strategy Calculation Agent or any of their respective affiliates that the Strategy Sponsor determines is likely to have a material effect on a Strategy Component, or on its ability to perform its role in respect of the Strategy (a "**Force Majeure Event**");

(d) (I) the official price, level, rate or other measure of any Strategy Component is unavailable on any relevant day on which such measure is scheduled to be published (including cases where a member of the Goldman Sachs Group is the sponsor or calculation agent of such Strategy Component);

(II) the relevant reference exchange is not open for trading during its regular trading session, or closes prior to its scheduled closing time, on any relevant day;

(III) a trading disruption occurs in respect of the relevant reference exchange or any other event or circumstance occurs which, in the reasonable judgement of the Strategy Sponsor, (A) affects the ability of market participants in general to enter into transactions in respect of such Strategy Component in a notional size required in relation to any product or transaction linked to the relevant Strategy, (B) impairs the liquidity of any transactions in relation to such Strategy Component and/or (C) affects the value of such Strategy Component;

(IV) a Currency Exchange Rate Disruption Event has occurred, or

(V) the value of such Strategy and/or Strategy Component is, in the reasonable judgement of the Strategy Sponsor or Strategy Calculation Agent, manifestly incorrect,

(each of (I) - (V) being an "**Other Disruption**");

(e) where required, the Strategy Sponsor (after using commercially reasonable efforts) ceases to have the relevant data license in respect of such Strategy Component,

then the Strategy Sponsor (or the Strategy Sponsor may instruct the Strategy Calculation Agent to), acting in good faith and in a commercially reasonable manner, determine in its sole discretion to take one or more of the following actions (or take no such actions), with reference to preserving the intended commercial purpose of the Strategy (the "**Strategy Purpose**"):

(I) make such determinations or adjustments to the terms of a Strategy, including to the methodology and relevant data sources, as it deems appropriate to account for such Disruption Event and, as applicable, to the extent necessary to calculate a Strategy Value in respect of such day (for which purpose it may use its own internal models and other market data sources as it reasonably determines is necessary);

(II) postpone any applicable rebalancing in whole or in part in respect of a Strategy or a Strategy Component (a "**Relevant Rebalancing**") to the immediately following applicable business day (a "**Relevant Business Day**") on which no Disruption Event is continuing, and make any relevant adjustments to the methodology for calculating the Strategy that it deems appropriate to account for such postponement of the Relevant Rebalancing;

(III) suspend the publication of the Strategy Value to the immediately following Relevant Business Day on which no Disruption Event is continuing;

(IV) publish an indicative value of the Strategy in respect of each business day on which a Disruption Event is continuing (and no official Strategy Value in respect of such Strategy will be published); or

(V) remove and/or replace any affected Strategy Component with an alternative asset where it considers in its sole discretion that a similar alternative is available.

"**Currency Exchange Rate Disruption Event**" means (and a Currency Exchange Rate Disruption Event shall be deemed to have occurred if), in respect of a currency exchange rate and a relevant day:

(i) such currency exchange rate splits into dual or multiple currency exchange rates;

(ii) an event has occurred in or affecting any jurisdiction that generally makes it impossible to convert the applicable reference currency into the Strategy Currency through customary legal channels;

(iii) an event has occurred in or affecting any relevant jurisdiction that generally makes it impossible to deliver (a) the Strategy Currency from accounts inside such jurisdiction to accounts outside such jurisdiction, or (b) the Strategy Currency between accounts inside such jurisdiction for the applicable reference currency or to a party that is a non-resident of such jurisdiction;

(iv) a default, event of default, or other similar condition or event (however described) with respect to any security or indebtedness for borrowed money of, or guaranteed by, any applicable governmental authority (as defined below), including, but not limited to:

(a) the failure of timely payment in full of any principal, interest, or other amounts due (without giving effect to any applicable grace periods) in respect of any such security, indebtedness, or guarantee;

(b) a declared moratorium, standstill, waiver, deferral, repudiation, challenge of the validity, or rescheduling of any principal, interest, or other amounts due in respect of any such security, indebtedness, or guarantee; or

(c) the amendment or modification of the terms and conditions of payment of any principal amount, interest, or other amounts due in respect of any such security, indebtedness, or guarantee without the consent of all holders of such obligation.

For these purposes, the determination of the existence or occurrence of any default, event of default, or other similar condition or event shall be made without regard to any lack or alleged lack of authority or capacity of such governmental authority to issue or enter into such security, indebtedness, or guarantee.

"**governmental authority**" means any *de facto* or *de jure* government (or any agency or instrumentality thereof), court, tribunal, administrative, executive, legislative or other governmental authority, or any other entity (private or public) charged with the regulation of the financial markets (including the central bank) of a reference country (which with respect to the euro shall include the European Union as well as any member state thereof from time to time whose currency is the euro);

(v) it is or becomes impossible or not reasonably practicable for the Strategy Sponsor or any of its affiliates to obtain such currency exchange rate from the source typically used for such currency exchange rate, or to obtain a firm quote for such currency exchange rate;

(vi) any expropriation, confiscation, requisition, nationalization or other action by a relevant governmental authority occurs which deprives the Strategy Sponsor or any of its affiliates of all or substantially all of its assets in any relevant jurisdiction; or

(vii) the applicable reference currency and/or Strategy Currency, as the case may be, ceases to exist and is replaced by a new currency.

Correction of Levels

If a Strategy Component is rebased, otherwise adjusted or modified or a level published or provided to the Strategy Calculation Agent in relation to such Strategy Component is, within a reasonable amount of time after its initial publication or provision, corrected, the Strategy Sponsor may (or the Strategy Sponsor may instruct a Calculation Agent to), take such steps as it considers appropriate for purposes of the relevant Strategy in response to such rebasing, adjustment, material modification or correction. In the case of a correction, such steps may not necessarily include a recalculation or other adjustment of any value, weight or quantity of a Strategy Component that would have otherwise been determined if the correction had been made prior to the time of any applicable rebalancing.

ADJUSTMENT EVENTS

Ordinary Dividends and Ex Days

In respect of any Strategy which is not calculated in accordance with the policies and practices of a third party Strategy Calculation Agent Methodology, following the determination by the Strategy Sponsor that a Strategy Component which is a share or an ETF has commenced trading ex-dividend in respect of an ordinary cash dividend (such dividend an **"Ordinary Dividend"** and such date, as determined by the Strategy Sponsor, an "**Ex Day**"), the Strategy Sponsor will determine the applicable dividend amount per share that would be received by a physical holder of such share or ETF (net of an Assumed Tax Rate, as set out below) (the "**Net Dividend Amount**") and will adjust the Adjusted Reference Level of such Strategy Component on the Ex Day with the aim of increasing the Adjusted Reference Level to a level as if such Net Dividend Amount had not been declared.

In the event that the dividend amount, dividend type or the Ex Day of a dividend is adjusted in respect of a Strategy Component on any day after an Ex Day, the Strategy Sponsor may make further adjustments to the Adjusted Reference Level.

The Strategy Sponsor will determine in respect of each relevant share or ETF and Ex Day, based on its view of applicable law and/or regulations, observable sources and/or market practice, an assumed tax rate ("**Assumed Tax Rate**") which is intended to reflect the withholding tax rate levied, or the potential tax rate that may be levied by the country of incorporation or residence of the issuer of such share or ETF.

Potential Adjustment Event

In respect of any Strategy which is not calculated in accordance with the policies and practices of a third party Strategy Calculation Agent Methodology, following the determination by the Strategy Sponsor that a Potential Adjustment Event has occurred in respect of a Strategy Component which is a share, a fund or an ETF (an "**Affected Adjusted Strategy Component**") or following any adjustment to the settlement terms of listed options or futures contracts on such Affected Adjusted Strategy Component traded on an options or futures exchange, the Strategy Sponsor will determine whether such Potential Adjustment Event or adjustment to the settlement terms of listed options or futures contracts on such Affected Adjusted Strategy Component traded on an options or futures exchange has a diluting or concentrative effect on the theoretical value of such Affected Adjusted Strategy Component and, if so, will:

(i) make the corresponding adjustment, if any, to one or more determinations under a Strategy, as the Strategy Sponsor determines appropriate to account for that diluting or concentrative effect (provided that no adjustments will be made to account solely for changes in volatility, expected dividends, stock loan rate, or liquidity relative to such asset), including (but not limited to) an adjustment to the Adjusted Reference Level in respect of such Affected Adjusted Strategy Component; and

(ii) determine the effective date of such adjustment.

The Strategy Sponsor may, but need not, determine the appropriate adjustment by reference (amongst other things) to the adjustment in respect of such Potential Adjustment Event made by other equity market dealers and/or exchanges (including but not limited to the reference exchange for such Affected Adjusted Strategy Component, and options and futures exchanges related to such Affected Adjusted Strategy Component) or quoting services.

"**Potential Adjustment Event**" means, in respect of an Affected Adjusted Strategy Component, any of the following:

(i) a subdivision, consolidation or reclassification of the relevant Affected Adjusted Strategy Component (unless resulting in a Merger Event) or a free distribution or dividend of any such Affected Adjusted Strategy Component to existing holders of such Affected Adjusted Strategy Component by way of bonus, capitalisation, or similar issue;

(ii) a distribution, issue or dividend to existing holders of the relevant Affected Adjusted Strategy

Component of (a) such Affected Adjusted Strategy Component, or (b) other share capital or securities granting the right to payment of dividends and/or the proceeds of liquidation of the issuer of such Affected Adjusted Strategy Component equally or proportionately with such payments to holders of such Affected Adjusted Strategy Component, or (c) share capital or other securities of another issuer acquired or owned (directly or indirectly) by the issuer of such Affected Adjusted Strategy Component as a result of a spin-off or other similar transaction, or (d) any other type of securities, rights, or warrants, or other assets, in any case for payment (in cash or in other consideration) at less than the prevailing market price, all as determined by the Sponsor;

(iii) an extraordinary dividend;

(iv) a call by the issuer of such Affected Adjusted Strategy Component in respect of such Affected Adjusted Strategy Component that are not fully paid;

(v) a repurchase by the issuer of such Affected Adjusted Strategy Component or any of its subsidiaries of such Affected Adjusted Strategy Component whether out of profits or capital and whether the consideration for such repurchase is cash, securities, or otherwise;

(vi) in respect of the issuer of such Affected Adjusted Strategy Component, an event that results in any shareholder rights being distributed or becoming separated from shares of common stock or other shares of the capital stock of such issuer pursuant to a shareholder rights plan or arrangement directed against hostile takeovers that provides upon the occurrence of certain events for a distribution of preferred stock, warrants, debt instruments, or stock rights at a price below their market value, as determined by the Strategy Sponsor, provided that any adjustment effected as a result of such an event shall be readjusted upon any redemption of such rights; or

(vii) any other event having a diluting or concentrative effect on the theoretical value of the relevant Affected Adjusted Strategy Component, as determined by the Strategy Sponsor.

AVAILABILITY AND PUBLICATION OF STRATEGY VALUES AND TERMINATION OF A STRATEGY

The Strategy Calculation Agent will generally calculate and make available the Strategy Value of a Strategy in respect of each Strategy Business Day.

On any Strategy Business Day in respect of which a Disruption Event has occurred in respect of a Strategy or a Strategy Component, the Strategy Calculation Agent may still make available a Strategy Value in respect of such Strategy Business Day. However, in such event, such Strategy Value may be indicative and only for information purposes and may not reflect a value at which the Strategy Sponsor or its affiliates would be willing to issue or trade any products linked to such Strategy.

Strategy Value: The Strategy Value in respect of a Strategy Business Day will be published on the following data sources:

(i) on https://marquee.gs.com (or any successor page) (the "**Strategy Publication Data Source**"); and/or

(ii) on such other information sources as the Strategy Sponsor may select from time to time at its sole and absolute discretion.

The Strategy Value will be published to the number of significant figures equal to the Strategy Value Publication Precision.

Information about the past performance of a Strategy and its volatility can be obtained at the Strategy Publication Data Source.

Miscellaneous: Within one month of (a) making any determination that any Disruption Event has occurred in respect of a Strategy, or (b) changing or amending the methodology relating to such Strategy in accordance with the part entitled *"Change in Strategy Methodology"*, the Strategy Sponsor will post details of such determination, change or amendment to the Strategy Publication Data Source. Any notices in respect of a Strategy (including, without limitation, any notice in respect of a restatement of a Strategy) will be published on the Strategy Publication Data Source.

Any investor in a financial product linked to a Strategy who does not have access to the Strategy Publication Data Source may obtain information published there from the Systematic Trading Strategies (STS) Department of Goldman Sachs International by telephoning +44 (0)20 7774 1000.

Any publication described in this part entitled *"Availability and Publication of Strategy Values and Termination of a Strategy"* may be restricted by means determined appropriate for such purpose by the Strategy Sponsor or Strategy Calculation Agent, in each case in its sole and absolute discretion, including, but not limited to, password protection restricting access to a limited set of persons in accordance with arrangements agreed between the Strategy Sponsor or Strategy Calculation Agent and such persons.

The Strategy Sponsor may, at any time, for any reason, and without notice, change the Strategy Publication Data Source or the data source on which any Strategy Value is published and/or change the frequency of publication of the Strategy Value, in its sole and absolute discretion.

The Strategy Sponsor may, in its sole and absolute discretion, at any time, for any reason (including without limitation, because it is no longer possible or practicable to calculate the Strategy Value), and without notice, terminate the calculation and publication of a Strategy.

The Strategy Sponsor and the Strategy Calculation Agent accept no liability to any person for publishing or not continuing to publish for any period of time any Strategy Value on any particular data source or any particular time.

CHANGE IN STRATEGY METHODOLOGY

Change in Methodology: Except as provided in this part entitled "*Change in Strategy Methodology*", the Strategy Calculation Agent and, if applicable, the Weight Calculation Agent for each Strategy will, subject as provided below, employ the methodology described in the Strategy Description with respect to calculating and determining the Strategy Value and the determining weights of any Strategy Components respectively, and its application of such methodologies shall (in the absence of manifest error) be conclusive and binding. While the Strategy Calculation Agent and, if applicable, the Weight Calculation Agent, expects to employ the methodology described in the Strategy Description (the "**Strategy Methodology**") at all times to calculate and determine the Strategy Value and determining the weights of any Strategy Components respectively, it is possible that market, legal, regulatory, judicial, financial, fiscal or other circumstances (including, but not limited to, any changes to or any suspension or termination of or any other events affecting a Strategy and/or any Strategy Component, as the case may be, or any other events affecting the ability of a third party data source to supply the necessary data for purposes of calculating the Strategy Value) will arise that would, in the view of the Strategy Sponsor, necessitate or make desirable a modification or change of such Strategy Methodology in order to preserve the Strategy Purpose. The Strategy Sponsor reserves the right to make any other changes to the composition of a Strategy or to the Strategy Methodology or to any third party data source used to calculate the value of a Strategy as the Strategy Sponsor may, in its sole discretion, determine to be necessary as a result of market, legal, regulatory, judicial, financial, fiscal or other circumstances.

Accordingly, the Strategy Sponsor shall be entitled to make modifications and/or changes to the Strategy Methodology, the composition of the Strategy or to any data obtained from a third party data source which is used to calculate the Strategy Value without notice as it in its sole and absolute discretion deems appropriate, necessary or desirable, including (without limitation):

(i) to correct any manifest error or proven error contained in the Strategy Description (including any relevant Strategy Supplement);

(ii) to cure, correct or supplement any ambiguity or contradictory or defective provision contained in the Strategy Description (including any relevant Strategy Supplement);

(iii) to change the frequency of calculation of the Strategy Value and to make such adjustment to the Strategy Methodology as it determines, in good faith and in a commercially reasonable manner, to be necessary to take account of the amended frequency of calculation;

(iv) to permit the Strategy Calculation Agent and, if applicable, the Weight Calculation Agent to continue calculating and determining the Strategy Value and determining the weights of any Strategy Component respectively if market, legal, regulatory, judicial, financial, fiscal or other circumstances arise which were not reasonably foreseeable by the Strategy Sponsor as of the date of the relevant Strategy Supplement and which have not been deliberately caused by the Strategy Sponsor and such circumstances would prevent the Strategy Calculation Agent and, if applicable, the Weight Calculation Agent from calculating and determining the Strategy Value and determining the weights of any Strategy Components respectively, and would necessitate a modification or change of the methodology described in the Strategy Description in order for the Strategy Value to continue to be calculated and determined notwithstanding the relevant circumstances; and/or

(v) to preserve the Strategy Purpose where such modification and/or change is of a formal, minor or technical nature.

In making any such modifications described above, the Strategy Sponsor and/or Strategy Committee, as applicable, will ensure that such modifications or changes will result in a methodology that is consistent with the Strategy Purpose. However, the Strategy Sponsor and any Calculation Agent does not owe any person any fiduciary duties in respect of a Strategy and are not required to take the interests of any person into account in making any such modifications with respect thereto. **Strategy Committee**: In respect of a Strategy, the Strategy Sponsor may, but is not required to, establish a strategy committee (the "**Strategy Committee**"). The Strategy Committee, if established, will comprise employees of the Strategy Sponsor and at least an equal number of external members with a relevant academic or professional background, as selected by the Strategy Sponsor in its sole and absolute discretion. The Strategy Sponsor may propose any modifications and/or changes to the Strategy Methodology of the kind described in paragraphs (i) to (v) above, without limitation, to the Strategy Committee for its consideration.

If a Strategy Committee is established, a meeting of the Strategy Committee will be considered quorate if (a) a majority of the Strategy Committee is in attendance, and (b) at least half of those in attendance are external members. For any decision of the Strategy Committee to be approved, the Strategy Committee must vote by a simple majority, including at least one external member, to approve such decision.

The role, responsibilities and powers of the Strategy Committee, if established, will be pre-defined by the Strategy Sponsor and will be limited to approving changes to the Strategy Methodology or to any data obtained from a third party data source which is used to calculate the Strategy Value of a Strategy, in each case where the Strategy Sponsor has made a proposal as permitted to do so by and as contemplated by the above. In addition, the Strategy Committee, if established, may be given the power to make proposals to cure, correct or supplement ambiguities, defective provisions, errors, omissions and inconsistencies and to make administrative changes that are not economically significant. The Calculation Agent(s) may from time to time consult with the Strategy Committee on matters of interpretation with respect to the methodology of a Strategy. For the avoidance of doubt, the Strategy Committee, if established, will not have greater powers than the Strategy Sponsor at any time.

In making or proposing any such modifications described above, the Strategy Committee will ensure that such modifications or changes will result in a methodology that is consistent with the Strategy Purpose.

The Strategy Committee, if established, will keep a record of any approved amendments. Such record, and the agenda and minutes of each and any meeting of the Strategy Committee, will be made available to investors upon their request using the contact details given under the part entitled "*Availability and Publication of Strategy Values and Termination of a Strategy*".

In addition, if the aggregate notional amount of products or transactions linked to a Strategy (or any other Strategy which is sponsored by the same Strategy Sponsor and which use a similar methodology as such Strategy) exceeds a certain threshold (as determined by the Strategy Sponsor by reference to the ability and capacity of the Strategy Sponsor and/or any affiliate to be able to effectively hedge its exposure to such Strategy and the liquidity impact of such hedging on the relevant markets), then the Strategy Sponsor may (a) change the Methodology so that the rebalancing of the Strategy is executed over one or more additional business days or that the rebalancing of the Strategy occurs more frequently, (b) replace the Strategy with a replacement Strategy which will be identical in all material respects other than the day or days on which the Strategy is rebalanced and/or (c) make such other adjustments to the Strategy, in each case, in order to enable the Strategy Sponsor and/or any affiliate to effectively hedge its exposure to the Strategy and/or reduce the expected liquidity impact of such hedging transactions in relevant markets. No modifications, replacement or changes proposed as a result of this paragraph shall result in a Strategy that is inconsistent with the Strategy Purpose. Any such changes or actions will be announced as promptly as is reasonably practicable and normally prior to their effective date on the Strategy Publication Data Source.

In addition and in respect of a Strategy, the Strategy Sponsor will have policies and procedures in place governing the frequency with which it conducts internal reviews with respect to such Strategy and the frequency with which it consults with investors in products linked to such Strategy. Please see http://www.goldmansachs.com/what-we-do/securities/business-groups/sts-folder/index.html (or any successor page) for Goldman Sachs' IOSCO Principles for Financial Benchmarks Compliance Statement and the Summary of Index Control Framework.

CONFLICTS OF INTEREST

The following list of conflicts does not purport to be a complete list or explanation of all the conflicts of interests associated with the Strategies.

Overview of the Roles of the Goldman Sachs Group

The Goldman Sachs Group has multiple roles in connection with the Strategies:

(i) If Goldman Sachs International is a Calculation Agent of a Strategy, Goldman Sachs International is responsible for calculating and publishing the Strategy Value in its capacity as Strategy Calculation Agent and for making certain determinations in respect of such Strategy from time to time in its capacity as Strategy Sponsor.

(ii) The Strategies are designed by, and are operated in accordance with, an algorithm developed by Goldman Sachs International. Among other things, Goldman Sachs International created the parameters within which each Strategy operates. The Strategy Sponsor does not have any obligation to ensure that the Strategy Calculation Agent continues to calculate and publish the Strategy Value. Except in the limited circumstances set out in the relevant Strategy Description, Goldman Sachs International does not generally exercise any discretion in relation to the operation of each Strategy.Goldman Sachs International owes no fiduciary duties in respect of such Strategy.

(iii) The Goldman Sachs Group is a full service financial services group and, consequently, is engaged in a range of activities that could affect the Strategy Value of a Strategy, as the case may be, and any Strategy Component positively or negatively as further described below.

(iv) The Goldman Sachs Group members may be sponsors and/or calculation agents of one or more Strategy Components and in that capacity have the power to make determinations that could materially affect the Strategy Value of such Strategy.

(v) The Goldman Sachs Group may from time to time have a direct or indirect ownership interest in any Calculation Agent (or any other calculation agent with respect to a Strategy or Strategy Component) and any third party data providers with respect to a Strategy or any Strategy Component.

Potential Conflicts of Interest

Potential conflicts of interest may arise in relation to Goldman Sachs' multiple roles in connection with the Strategy. Although the Goldman Sachs Group will perform its obligations in a manner that it considers commercially reasonable, it may face conflicts between the roles it performs in respect of a Strategy and its own interests. In particular, the Goldman Sachs Group 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 a Strategy, products linked thereto, any Strategy Component and/or investments referenced by or linked to any Strategy Component and may exercise remedies or take other action with respect to its interests as it deems appropriate. These actions could adversely affect the Strategy Value and may include the following:

(i) The Goldman Sachs Group actively trades products linked to a Strategy, any Strategy Component, investments referenced by or linked to a Strategy Component and numerous related investments. These activities could adversely affect the Strategy Value, which could in turn affect the return on, and the value of, any products linked to such Strategy.

(ii) The Goldman Sachs Group may have access to information relating to a Strategy, products linked thereto, a Strategy Component or investments referenced by or linked to a Strategy Component. The Goldman Sachs Group is not obliged to use that information for the benefit of any person acquiring or entering into any products linked to such Strategy.

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

(a) The Goldman Sachs Group and other parties may issue or underwrite additional securities or trade other financial or derivative instruments or investments referenced to a Strategy or other similar strategies or any Strategy Component. An increased level of investment and trading in these securities, instruments or investments may negatively affect the performance of a Strategy and could affect the value of the Strategy Value of such Strategy and, therefore, the amount payable at maturity (or on any other payment date) on any products linked to such Strategy and the value before maturity of any such products. Such securities, instruments or investments may also compete with any products linked to a Strategy. By introducing competing products into the marketplace in this manner, the Goldman Sachs Group could adversely affect the market value of any products linked to a Strategy and the amount paid by it on such products at maturity (or on any other payment date). To the extent that the Goldman Sachs Group 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 products linked to a Strategy.

(b) Although the Goldman Sachs Group is not obliged to do so, it may elect to hedge its exposure to a Strategy, any products linked thereto, a Strategy Component or any investment referenced by or linked to a Strategy Component 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 the Goldman Sachs Group chooses to hedge its exposure, it may adjust or unwind such hedges by purchasing or selling products linked to a Strategy, a Strategy Component, any investments referenced by or linked to a Strategy Component or any other product on or before the date such Strategy is valued for purposes of any investments referenced to such Strategy. The Goldman Sachs Group may also enter into, adjust or unwind hedging transactions relating to other instruments linked to a Strategy or a Strategy Component including at times and/or levels which are different from those used to determine the Strategy Value. Any of this hedging activity may adversely affect the Strategy Value of a Strategy and the value of any products linked to such Strategy. In addition, and without limitation:

   (I) The Goldman Sachs Group could receive substantial returns with respect to these hedging activities while the Strategy Value of a Strategy and/or the value of any product linked to a Strategy may decline.

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

   (III) The Goldman Sachs Group could receive substantial returns if it trades in a Strategy Component on or before the rebalancing of a Strategy and/or at levels which are different from the levels specified in the methodology for determining the Strategy Value of a Strategy. 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 a Strategy. In addition, such trading could generate significant returns to the Goldman Sachs Group that will not be passed on to the investors in products linked to a Strategy.

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

(d) The Goldman Sachs Group 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 products linked to a Strategy, a Strategy Component or any constituent thereof and/or any investment referenced by or linked to a

Strategy Component or any constituent thereof. In the course of these transactions, the Goldman Sachs Group's customers may receive information about a Strategy before it is made available to other investors. Any of these activities could also adversely affect the Strategy Value of such Strategy directly or indirectly by affecting the level of a Strategy Component or any constituent thereof or the investments referenced by or linked to a Strategy Component or any constituent thereof and, therefore, the market value of any products linked to such Strategy and the amount paid on any such product at maturity.

(iv) As operator or sponsor of a Strategy, under certain circumstances Goldman Sachs International will have discretion in making various determinations that affect a Strategy and products linked to it including, but not limited to, those situations described in the relevant Strategy Description. 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 product linked to a Strategy, including products issued by the Goldman Sachs Group members. The exercise by Goldman Sachs International of this discretion could adversely affect the Strategy Value of such Strategy and the value of any such product linked to it. It is possible that the exercise by the Strategy Sponsor of its discretion to change the relevant Strategy Methodology may result in substantial returns in respect of the Goldman Sachs Group's 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 products linked to a Strategy, and/or the Strategy Components thereof or any investment referenced by or linked to such Strategy Components.

(v) As operator or sponsor of one or more Strategy Components, the Goldman Sachs Group members may be entitled to exercise discretion over decisions that would have an adverse impact on the Strategy Value of a Strategy, including, without limitation, discontinuing publication of the level of one or more Strategy Components. The Goldman Sachs Group members will exercise any such discretion without regard to any Strategy or investors in any products linked thereto.

(vi) The Goldman Sachs Group may in the future create and publish other indices or strategies, the concepts of which are similar, or identical, to that of a Strategy or one or more of the Strategy Components. The Strategy Components as specified in the Strategy Description for such Strategy, however, are the only components that will be used for the calculation of the Strategy. Accordingly, no other published indices should be treated by any investor as the level of any Strategy Component (except as the Strategy Sponsor or any Calculation Agent may so determine, as described above).

(vii) The Goldman Sachs Group may publish research, express opinions or provide recommendations (for example, with respect to a Strategy Component) that are inconsistent with investing in products linked to such Strategy, 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 relevant Strategy Component and could affect the value and or performance of such Strategy or of products linked to such Strategy.

(viii) The Goldman Sachs Group may have ownership interests in sponsors of Strategy Components and as such may be able to influence the methodology and other features of such Strategy Components. In addition, members of the Goldman Sachs Group may provide pricing or other data that is directly used in the calculation of the level, coupon and/or components of Strategy Components (or the components thereof). The activities of the Goldman Sachs Group members as contributor to any Strategy Components may be adverse to the interests of investors and/or counterparties to products linked to any such Strategy Components and may have an impact on the performance of such Strategy Components.

(ix) The Goldman Sachs Group may have ownership interests in any Calculation Agent (or any other calculation agent with respect to a Strategy or Strategy Component) and any third party data providers with respect to a Strategy or any Strategy Component and as such may be able to influence the determinations of such a Calculation Agent or other calculation agent. In addition, members of the Goldman Sachs Group may provide pricing or other data that is directly used in the calculation of the level, coupon and/or components of the Strategy. The activities of the Goldman Sachs Group members as contributor to any Strategy may be adverse to the interests of investors and/or counterparties to products linked to any such Strategy and may have an impact on the performance of such Strategy.

RISK FACTORS

Risk factors relating to a synthetic investment in the Strategies are set out below. This section does not purport to describe all of the risks associated with a synthetic investment in the Strategies. Risk factors in relation to a transaction or product which is linked to the performance of the Strategies may also be set out in the relevant documents in respect of such transaction or product. In addition, potential investors should refer to the relevant General Description, the relevant Strategy Supplement and/or the other relevant strategy documentation elements in respect of each Strategy and each of its Strategy Components for specific risk factors relating to such Strategy and such Strategy Components.

Investors in a Strategy could lose their entire investment

The value of a Strategy depends on the performance of the Strategy Components, each of which may increase or decrease in value. Neither a Strategy nor any of the Strategy Components includes any element of capital protection or guaranteed return. The value of any Strategy Component, or a Strategy itself, may fall below its initial value.

If a floor is not specified to be applicable in respect of a Strategy or Strategy Component then the value of that Strategy or Strategy Component Value may fall below zero and have a negative value. In this case an investment linked to a Strategy may incur losses which exceed the notional value of such investment.

If a floor is specified to be applicable in respect of a Strategy or Strategy Component then the value of that Strategy or Strategy Component Value may fall to zero. In such a case, the value will remain at zero and any investment linked solely to such Strategy may have lost all of its value, in which case there will be no chance of such investment thereafter recovering.

Changes in market structure and/or increased investment in similar products may negatively affect the value of a Strategy

As a result of changes in market structure and/or due to increased investment in products using the same or similar investment rationale to that of a Strategy or a Strategy Component, the underlying market or economic characteristics that such Strategy or Strategy Component attempts to capture, measure or replicate may change, cease to exist, and/or lead to negative expected returns over any time period. This may have a negative impact on the value of a Strategy and a Strategy will not be adjusted to take account of any such changes.

A Strategy is not actively managed

The weight or quantity assigned to a Strategy Component on each relevant rebalancing day is determined by applying an algorithm operating within pre-determined rules. There will be no active management of a Strategy so as to enhance returns beyond those embedded in a Strategy.

Market participants are often able to adjust their investments promptly in view of market, political, financial or other factors, and an actively managed product could potentially respond more directly and appropriately to immediate market, political, financial or other factors than a non-actively managed strategy. In contrast, the algorithm for a Strategy will rebalance the weights or quantities to their specified values on each relevant rebalancing day.

The weights of the Strategy Components may total more or less than 100%

A Strategy's absolute overall exposure to the Strategy Components may be greater or less than 100%.

If the sum of the absolute weights of the Strategy Components is greater than 100% the Strategy will employ leverage. In the current instance, leverage means that a Strategy will have increased exposure to changes, which may be positive or negative, in the levels of the Strategy Components, magnifying the volatility and risk the performance of the Strategy will be adversely affected should the level of long Strategy Components decrease and/or the value of short Strategy Components increase.

If the sum of the absolute weights of the Strategy Components is less than 100% the Strategy will have a reduced participation to the Strategy Components and may underperform as compared to a Strategy where the exposure was greater.

Excess Return Strategies will nearly always underperform Total Return Strategies

A Strategy which is calculated on an excess return basis is the excess return version of one or more total return strategies. To determine the value of an excess return strategy, the performance of the total return strategy is reduced by the return that could be earned on a synthetic cash deposit at a notional interest rate. Thus, the performance of an excess return strategies will nearly always be less than the performance of the equivalent total return strategy.

Total Return Strategies may exhibit excess return characteristics

A Strategy which is calculated on a total return basis may include Strategy Components which are calculated on an excess return basis. In such case even though the Strategy is calculated on a total return basis it will exhibit characteristics of an excess return version.

The reference level of Strategy Components which are shares, ETFs or funds may be adjusted to take account of net dividend payments and other potential adjustment events

On the date on which a Strategy Component which is a share, ETF or fund commences trading without the rights to receive a dividend, the reference level of such asset will be adjusted by the Strategy Sponsor with the aim of increasing the level to a value as if the relevant dividend amount, net of tax, had not been declared. When making such adjustment, the Strategy Sponsor will assume a notional tax rate in respect of the dividend, which will reduce the increase in the reference level for such Strategy Component. Such tax rates may vary according to changes in tax laws and procedures.

Any announced dividend in respect of a Strategy Component will be reduced by an assumed tax rate (which may be zero), which is intended to reflect the withholding tax rate levied, or the potential tax rate that may be levied, by the country of incorporation or residence of the issuer of such Strategy Component. The assumed tax rate will be determined by the Strategy Sponsor using the relevant Strategy methodology based on its view of applicable law and/or regulations, observable sources and/or market practice. The assumed tax rates may be amended from time to time by the Strategy Sponsor. If the assumed tax rate in respect of one or more Strategy Components is increased then the Strategy Value of a Strategy may be affected.

The Strategy Sponsor and/or any affiliate that has hedged its exposure to any Strategy Component will benefit if the effective rate of withholding tax that it incurs through its hedging activity is less than the synthetic tax withholding applied in respect of the relevant Strategy and such benefit will not be passed on to the investors in products or transactions linked to a Strategy.

Following the determination by the Strategy Sponsor that an event has occurred that would have a diluting or concentrative effect in respect of a Strategy Component which is a share, an ETF or a fund or following any adjustment to the settlement terms of listed options or futures contracts on such Strategy Component traded on an options or futures exchange, the Strategy Sponsor may make an adjustment to account for such effect. The Strategy Sponsor may, but need not, determine the appropriate adjustment by reference (amongst other things) to the adjustment in respect of such event made by the other equity market dealers and/or exchanges (including but not limited to the reference exchange for such Strategy Component, and options and futures exchanges related to such Strategy Component) or quoting services. Such adjustment may have an adverse effect on the performance of the Strategy.

No assurance can be given that the methodology underlying each Strategy will be successful in producing positive returns or that such Strategy will outperform any other alternative investment strategy.

Furthermore, it should be noted that the results that may be obtained from investing in any product linked to a Strategy or otherwise participating in any transaction linked to a Strategy might well be significantly different from the results that could theoretically be obtained from a direct investment in the Strategy Components or any related derivatives.

The actual weights of Strategy Components may vary following each rebalancing

The actual weight of each of the Strategy Components may be different than the assigned weights, and therefore the relative contribution of each Strategy Component to the Strategy Value may vary from time to time, depending on the performance of each of the Strategy Components relative to the other Strategy Components since such immediately preceding rebalancing. The longer the period between each rebalancing, the greater the likelihood that there will be a significant variance between the absolute values of the weights of the Strategy Components, and the Strategy may therefore have an exposure to a Strategy Component further below or in greater excess of its assigned weight than it would if the period were shorter, which may result in a greater skewing of the absolute nature of the investment positions with respect to the Strategy Components and increase the overall risk profile of the Strategy.

Historical levels of a Strategy may not be indicative of future performance

Past performance of a Strategy is no guide to future performance. It is impossible to predict whether the value of a Strategy will rise or fall. The actual performance of a Strategy in the future may bear little relation to the historical performance of a Strategy.

An Investor in a Strategy will have no rights in respect of the Strategy Components or any Strategy Components

The investment exposure provided by a Strategy is synthetic. An investment referenced to a Strategy will therefore not make an investor a holder of, or give an investor a direct investment position in, any Strategy or any Strategy Component (or any components thereof).

A Strategy may provide short exposure to one or more of the Strategy Components

A Strategy may specify that the weight of a Strategy Component may be less than zero, i.e. a short position in such Strategy Component. A short position in a Strategy Component means that a Strategy will have negative exposure to such Strategy Component and the Strategy Value of such Strategy will be negatively affected if the value of such Strategy Component should increase and positively affected if the value of such Strategy Component should decrease. Therefore, investors should be aware that an investment linked to a Strategy may decline in value in a period, even if the value of such Strategy Component increases during that timeframe. Further, given that short positions may create exposure to uncapped losses, increases in the value of such Strategy Component could result in a decrease in the Strategy Value that is greater than the weight in respect of such Strategy Component and may result in the Strategy Value falling to zero.

If specified in the relevant Strategy Supplement, the level at which Strategy Components are rebalanced will depend on the execution by the Strategy Sponsor

If so specified in the relevant Strategy Supplement in respect of one or more Strategy Components, then the level at which such rebalancing takes place will depend on the Strategy Sponsor's execution level. The Strategy Sponsor will not owe any fiduciary duties in respect of such execution (and in particular will not be under any obligations of "best execution" or similar) to any investor in a product linked to a Strategy or to any other person.

An investment in a Strategy may be subject to dilution, which may limit the gains in such investment

A Strategy may be subject to dilution, such that investors in products linked to such Strategy may not benefit fully from increases or decreases (depending on whether the exposure is long or short) in the value of a Strategy Component. Dilution means that the return or loss on an investment is subject to a multiplier decreasing exposure to such investment and reducing the volatility and risk of loss should the value of such investment decline, but reducing the potential gain should the value of such investment increase. Investors should be aware that if the value of a Strategy Component increases or decreases, an investment linked to a Strategy may not have the same magnitude of increased or decreased value as the Strategy Component.

Correlation of performances among the Strategy Components may reduce the performance of a Strategy

Performances of the Strategy Components of a Strategy may become highly correlated from time to time, including, but not limited to, periods in which there is a substantial decline in a particular sector or asset type represented by the Strategy Components. High correlation during periods of negative returns among the Strategy Components may have an adverse effect on the level of a Strategy.

Volatility and Strategy risk

A Strategy may have a daily volatility adjustment feature (if so specified in the General Description), which aims to provide a notional volatility-controlled exposure to the Strategy Components of such Strategy. This is achieved by periodically increasing or decreasing the exposure of such Strategy to the Strategy Components, based on the realized volatility of the Strategy Components over a certain period of time relative to a pre-determined volatility target. An increase in the realized volatility of a Strategy Component may decrease the exposure of such Strategy to such Strategy Component.

If the daily volatility adjustment feature is applicable, an underperformance of the Strategy compared to a similar Strategy without such feature could be observed in periods where the value of a Strategy Component in which a Strategy holds a synthetic long position is increasing and, at the same time, the realized volatility exceeds the volatility target. The daily volatility adjustment feature, if applicable, is not designed for short term investments both in terms of improved participation for option-based payoffs linked to the Strategy and in terms of Strategy performance.

Potential investors should make their own investigations and form their own views as to the appropriateness or otherwise of such Strategy, taking into account their own circumstances. In particular, potential investors in products linked to such Strategy should note that such Strategy may not reflect the return that could be realized from a direct investment in the Strategy Components.

As some Strategy Components may not be denominated in the Strategy Currency, a Strategy may be subject to currency exchange rate risks

Each Strategy is calculated in the Strategy Currency. While some of the Strategy Components may be denominated in the Strategy Currency, a Strategy may also comprise Strategy Components denominated in other currencies. A Strategy may therefore be exposed to currency exchange rate risks. The impact on the Strategy Value of a Strategy will depend on the extent to which these other currencies, if any, strengthen or weaken against the Strategy Currency, the relative weight of each such other currency. currency exchange rates vary over time. Changes in a particular currency exchange rate result from the interaction of many factors directly or indirectly affecting economic or political conditions, including rates of inflation, interest rate levels, balances of payment among countries, the extent of governmental surpluses or deficits and other financial, economic, military and political factors, among others.

A Strategy may have an internal simulated currency hedge feature in respect of one or more of its Strategy Components denominated in an other currency, if so specified in the General Description. Through a series of synthetic transactions, the internal simulated currency hedge feature, if applicable, seeks to offset a substantial portion of the positive or negative effects of currency exchange rate fluctuations in such other currency on the values of such Strategy Component. However, a Strategy's internal simulated currency hedge feature will prove ineffective if, and to the extent that, the performance of the relevant money markets and of such Strategy Component move in opposite directions or move in the same direction but to a different extent. As a result of such movements, investors in such Strategy will still be subject to the risk of currency fluctuations affecting the value of such Strategy. In addition, as the currency hedged levels of such Strategy Component are based on the performance of synthetic cash deposits, the internal simulated currency hedge Feature, if applicable, is unlikely to replicate a return exactly equal or similar to the return such Strategy Component that would be available to an investor whose investment currency is the same as that of such Strategy Component.

A Strategy may have a limited operating history and may perform in unanticipated ways

A Strategy may be a relatively new strategy. Where limited historical performance data exists with respect to the Strategy Components referenced by such Strategy and the Strategy itself, any investment in respect of which returns are linked to the performance of a Strategy or its Strategy Components may involve greater risk than an investment linked to returns generated by an investment strategy with a proven track record. While a longer history of actual performance could provide more reliable information on which to assess the validity of a Strategy and on which to base an investment decision, the fact that a Strategy and the Strategy Components are relatively new would not allow this. There can be no guarantee or assurance that a Strategy or its Strategy Components will operate in a manner consistent with the data available.

Information about a Strategy is no guarantee of the performance of such Strategy

Certain presentations and historical analysis ("**Back-testing**") or other statistical analysis materials in respect of the operation and/or potential returns of a Strategy which may be provided are based on a number of assumptions, historical estimates, simulated analyses and hypothetical circumstances to estimate how such Strategy may have performed prior to its actual existence. The Strategy Sponsor may use historical data that is available to calculate the hypothetical level of a Strategy prior to its inception. If the Strategy Sponsor determines that such historical data is not available or is incomplete, the Strategy Sponsor may use alternate sources of data in place of such historical data as well as make certain modifications to the strategy methodology as it deems necessary to calculate the hypothetical level of a Strategy prior to its inception. The Strategy Sponsor provides no assurance or guarantee that a Strategy 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 are provided in relation to a Strategy may not reflect the performance of, and are no guarantee or assurance in respect of the performance or returns of, a Strategy over any time period. Furthermore, any Back-testing of a Strategy is based on information and data provided to the Strategy Sponsor by third parties. The Strategy 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.

Strategy Inception Date

A Strategy will only have been calculated since the "**Strategy Inception Date**", being a date determined by the Strategy Sponsor as the date on which the value of the strategy would have been equal to the "Strategy Initial Value" (as specified in the rules of the relevant Strategy) based on Back-testing (using simulated analyses and hypothetical circumstances, as described in more detail above). As such, any historical returns or any hypothetical simulations based on such back-tested data or analyses with respect to the period from the Strategy Inception Date to the date on which investment products linked to a Strategy are first implemented (which may be materially later than the Strategy Inception Date of such Strategy), may not reflect the performance of, and are no guarantee or assurance in respect of the performance or returns of, such Strategy over any time period.

Some Strategy parameters are partially based on simulated data

Some parameters of a Strategy may have been determined by reference to simulated time series data which start before the Strategy Inception Date for such Strategy. Such simulated data are based on various assumptions, do not reflect actual trading and are subject to various market data limitations. As a result, the performance of the simulated time series data may differ from the actual historical performance of a Strategy and this difference may be material. The future performance of a Strategy will depend, among other things, on the choice of the parameters as described in the supplement for the relevant Strategy. As such, the performance of such Strategy could be materially different if the relevant parameters were determined based on the actual performance of such Strategy rather than based on simulated time series data.

A Strategy may be subject to a Disruption Event

If a Disruption Event occurs or is continuing in respect of a Strategy, the Strategy Sponsor may make (or the Strategy Sponsor may instruct the Strategy Calculation Agent to make) certain adjustments in respect of such Strategy and which may include: any adjustments to the methodology and relevant data sources in order to calculate the Strategy Value, a postponement of any relevant rebalancing or the suspension the publication of the Strategy Value. If the Strategy Sponsor or Strategy Calculation Agent (as applicable) makes any adjustments to the methodology and relevant data sources or postpones any relevant rebalancing, it is likely that the Strategy Value will be different from what it would have been if such event had not occurred, and it may vary unpredictably and could be lower.

Changes in the Strategy Components may affect the Strategy Value

Where a Strategy Component ceases to exist or is no longer tradable, including as a result of a Goldman Sachs Group member discontinuing a Strategy Component of which it is a sponsor, or where the Strategy Sponsor would be prevented from entering into transactions in respect of an Strategy Component (including one for which a Goldman Sachs Group member is the sponsor) by any applicable law or regulation, the Strategy Sponsor may (but is not obliged to) substitute another Strategy Component for the original one where it considers in its sole discretion that a similar alternative is available. Any such substitution or assignment could alter the exposure provided by a Strategy and materially affect the performance and value of such Strategy.

Gains from an investment linked to a Strategy will be adjusted by deductions included in the calculation of the value of such Strategy

Notional embedded costs will be included within a Strategy and will reduce the level of such Strategy. Such amounts will be deducted from the performance of a Strategy with the intention of reflecting synthetically one or more of (i) the cost of maintaining exposure to, and replicating performance of, each Strategy Component (such costs are applicable on an ongoing basis for such time as the Strategy maintains exposure to the relevant Strategy Component and are often referred to as servicing costs) and (ii) the cost of entering into and/or unwinding transactions relating to a Strategy Component following each rebalancing of the Strategy Components in the Strategy (such costs are made only as a result of a rebalancing of a Strategy and are often referred to as transaction costs). The costs referred to in (i) and (ii) above will vary for each Strategy Component. These embedded costs will reduce the value of such Strategy. The value of a Strategy may also be reduced by an amount calculated at a fixed rate specified in the rules of the relevant Strategy. In addition, the value of a Strategy may be reduced by further deductions if so specified in the relevant strategy documentation.

The value of each Strategy Component and of each underlying component may be adjusted by certain deductions

Each Strategy Component and the underlying components thereof may also embed notional cost deductions, the effect of which is to reduce the level of the Strategy Component or component thereof, as applicable. Such notional costs deductions are intended to reflect, synthetically, certain costs incurred in respect of such Strategy Component (or component thereof, as applicable) as described in the rules of the relevant Strategy Component or underlying component thereof (as applicable). Any such deductions from the level or value of a Strategy Component or underlying component thereof shall have the effect of reducing the level of the relevant Strategy.

Notional servicing costs and transaction costs embedded in a Strategy may be greater than actual servicing cost and transaction costs incurred in hedging transactions of the Strategy Sponsor or its affiliates

The Strategy costs (and the component amounts thereof) which are embedded and reflected in the calculation of a Strategy will be calculated by reference to pre-determined rates and will not necessarily reflect the actual or realised servicing costs and transaction costs that would be incurred by an investor in the relevant Strategy Components or their underlying constituents, which could be larger or smaller from time to time. The Strategy Sponsor (or its affiliates) may benefit if the Strategy costs (and the component amounts thereof) embedded in a Strategy exceed the actual servicing costs and/or transaction costs that are incurred by the Strategy Sponsor (or its affiliates) in hedging transactions that may be entered into in respect of such Strategy, each Strategy Component and/ or any underlying component thereof.

Under certain market conditions, the Strategy Sponsor could significantly increase the costs that are deducted from a Strategy

Under certain market conditions, the Strategy Sponsor of a Strategy may determine to increase significantly the costs that are deducted from the Strategy, and there may be no fixed limits on the levels of these costs. Although this determination is constrained by the procedure described in the Strategy Description, it is possible that the increased cost may be significantly greater than the levels originally assigned to them. Further, although a period of such market conditions may last only a short time, the increased cost could be deducted from a Strategy for an extended period of time. This could materially adversely affect the performance and value of a Strategy.

The Strategy Sponsor's hedging activity may affect the level of a Strategy

By executing products linked to a Strategy ("**Linked Products**"), Goldman Sachs International and/or its affiliates ("**GS**") will have an exposure to such Strategy and its Strategy Components. GS will take risk positions to hedge this exposure in its sole discretion and in a principal capacity. Investors in any Linked Product will not have any rights in respect of any GS hedge positions, including any shares, futures, options, commodities or currencies. GS may execute its hedging activity by trading in the Strategy Components of a Strategy on or before the related rebalancing day. Such trading may have an adverse impact on the level at which a Strategy Component is rebalanced which will result in an adverse impact on the performance of a Strategy. GS's hedging activity, and hence the size of such impact, will be linked to the amount of new and outstanding Linked Products at the relevant time. Additionally, GS may generate revenues if it executes its hedging activity at different levels from those used to determine the value of a Strategy or on a rebalancing of such Strategy. Such hedging activity could generate significant returns to GS that will not be passed on to investors in Linked Products.

A Strategy and its components are calculated and rebalanced according to the methodology for such Strategy, which includes assumptions as to transaction and servicing costs and rates of dividend withholding tax. GS will generate revenues in relation to a Strategy if the cost or the tax rates that GS incurs through its hedging activities are less than the assumed costs or tax rates used in the methodology for a Strategy.

Section 871(m) of the U.S. Internal Revenue Code

The United States Treasury Department has issued regulations under which amounts paid or deemed paid on certain financial instruments ("**871(m) financial instruments**") that are treated as attributable to U.S.-source dividends could be treated, in whole or in part depending on the circumstances, as a "dividend equivalent" payment that are subject to tax at a rate of 30% (or a lower rate under an applicable treaty), which in the case of any amounts or returns which an investor in any Linked Products (which are 871(m) financial instruments) may receive under the terms of their investment, could be collected via withholding.

These regulations generally apply to any payment made on or after 1 January 2017 with respect to any 871(m) financial instrument issued, executed or substantially amended on or after 1 January 2017. Accordingly, the counterparty to, or issuer of, Linked Products (which are 871(m) financial instruments) issued, executed or substantially amended on or after such date, will likely be required to withhold such taxes if any U.S.-source dividends are paid on any Strategy Component during the term of such investment (regardless of whether a notional withholding tax is applied to such dividends pursuant to the Strategy Methodology or not). Any such withholding will reduce the performance of the Linked Product, possibly materially so.

Any investor in such Linked Products may be required to make certifications prior to the maturity of their investment in order to avoid or minimize withholding obligations, and the counterparty or issuer (as applicable) will likely withhold accordingly (subject to such investor's potential right to claim a refund from the United States Internal Revenue Service) if such certifications are not received or are not satisfactory.

Investors should note that, even where a Linked Product has been issued or executed prior to 1 January 2017, such product will likely constitute an 871(m) financial instrument as a result of any substantial amendment to the terms (including any increase in the notional amount) of such Linked Product made after that date. Investors in Linked Products should consult their tax advisors concerning these regulations or subsequent official guidance and regarding any other possible alternative characterisations of such products for United States federal income tax purposes.

As Strategy Sponsor and Calculation Agent of a Strategy, Goldman Sachs International has the authority to make determinations that could materially affect a Strategy and create conflicts of interest

As the Strategy Sponsor and, if applicable, a Calculation Agent of a Strategy, Goldman Sachs International does not generally exercise any discretion in relation to the operation of the Strategy. Goldman Sachs International owes no fiduciary duties in respect of such Strategy. Goldman Sachs International may, however, exercise discretion in certain limited situations including, but not limited to, those situations described in the Strategy Description. Determinations made by Goldman Sachs International as the Strategy Sponsor and, if applicable, a Calculation Agent of a Strategy could adversely affect the Strategy Value of such Strategy and the exercise by Goldman Sachs of its discretion could present it with a conflict of interest of the kind described in the part entitled "*Conflicts of Interest*". In making those determinations, the Strategy Sponsor and/or the Calculation Agent will not be required to, and will not, take the interests of any investor of any such product into account or consider the effect its determinations will have on the value of such a product. All determinations made by Strategy Sponsor and/or the Calculation Agent shall be at its sole discretion and shall be conclusive for all purposes and will bind all holders of any products linked to a Strategy. The Strategy Sponsor and/or the Calculation Agent shall not have any liability for such determinations.

Potential amendment to the methodology of a Strategy or replacement of a Strategy to enable the Strategy Sponsor and/or any affiliate to be able to effectively hedge its exposure to the Strategy and to reduce the impact of such hedging transactions on the relevant markets

If the Strategy Sponsor determines that the aggregate notional or principal amount of financial products linked to a Strategy is above a certain threshold it may (a) change the Methodology so that the rebalancing of the Strategy is executed over one or more additional business days or that the rebalancing of the Strategy occurs more frequently, (b) replace the Strategy with a replacement Strategy which will be identical in all material respects other than the day or days on which the Strategy is rebalanced and/or (c) make such other adjustments to the Strategy, in each case, in order to enable the Strategy Sponsor and/or any affiliate to be able to effectively hedge its exposure to such Strategy and/or to reduce the expected impact of such hedging transactions on the relevant markets. Although such amendments or such replacement would be designed to minimise potential market impact, the performance of the Strategy may be affected by such amendments or replacement, potentially materially so.

As sponsors of Strategy Components, Goldman Sachs Group members have the authority to make determinations that could materially affect a Strategy and create conflicts of interest

Goldman Sachs Group members may be the sponsors of Strategy Components of a Strategy. In that capacity, each of them has the power to make determinations that could materially affect the value of these Strategy Components and, in turn, the Strategy Value of such Strategy, and the exercise by such members of their discretion in their capacity as sponsors of such Strategy Components could present them with a conflict of interest of the kind described in described in the part entitled "*Conflicts of Interest*".

Trading and other transactions by the Goldman Sachs Group could materially affect the value of any product linked to a Strategy

The Goldman Sachs Group is a full service financial services firm engaged in a range of market activities. Goldman Sachs Group may issue, arrange for the issue of, or enter into financial instruments referenced to, a Strategy or any of the Strategy Components of such Strategy and arrange for the distribution of these financial instruments, including the payment of distribution fees and commissions to any intermediaries. These activities could adversely affect the Strategy Value of a Strategy and any of its Strategy Components and may present the Goldman Sachs Group with a conflict of interest of the kind described in the part entitled "*Conflicts of Interest*".

Information provided by the Goldman Sachs Group about the value of any Strategy Component may not be indicative of future performance

Any information about the performance of any Strategy Component provided by the Goldman Sachs Group will be or has been furnished as a matter of information only, and an investor in a product linked to Strategy should not regard the information as indicative of the range of, or trends in, fluctuations in the levels or values that may occur in the future. Such information will likely differ from the actual values and levels used under the relevant Strategy Methodology.

Information about a Strategy may only be available through the Goldman Sachs Group

The Goldman Sachs Group may not provide holders of any product linked to a Strategy with further information in relation to such Strategy beyond what is provided in the General Description and/or the relevant Strategy Supplement, and further information may not be generally available. The Goldman Sachs Group has entered into non-exclusive licensing agreements with certain of its third party data suppliers in order to source the necessary data to calculate each Strategy. The formalities necessary to obtain access to such figures may deter potential investors from buying a product linked to a Strategy on the secondary market.

The Strategy Sponsor and any Calculation Agent may rely upon third party and other external and internal data sources which may be inaccessible and/or inaccurate, and the inputs used by the Strategy Sponsor and any Calculation Agent may affect the value of a Strategy

The Strategy Sponsor and any Calculation Agent may rely upon third party brokers or external dealers and other external and internal sources to obtain certain inputs necessary to compute the value of a Strategy and/or to determine the weights of the Strategy Components which may be inaccessible and/or inaccurate and the inputs used by them to compute the value of a Strategy may affect the value of such Strategy.

The inability of any Calculation Agent to source necessary data to calculate the relevant formulae of a Strategy may affect the value of such Strategy. In addition, the Strategy Sponsor and any Calculation Agent make no warranty as to the correctness or completeness of that information and take no responsibility for the accuracy of such data or the impact of any inaccuracy of such data on the value of a Strategy.

Products linked to a Strategy may be exposed to more or less risk, or perform better or worse, based upon the inputs received from the above suppliers or sources, than an actual investment in or linked to one or more of the Strategy Components.Sponsors of Strategy Components have authority to make determinations that could materially affect a Strategy

Determinations that the sponsors of the Strategy Components of a Strategy, including Goldman Sachs Group members, may make in connection with the composition, calculation and maintenance of the Strategy Components may materially affect the value of the Strategy Components and could, in turn, adversely affect the Strategy Value of such Strategy. Those sponsors have no obligation to take the interests of the Strategy Sponsor or any holders of any investment referenced or linked to a Strategy into consideration for any reason in carrying out their functions and have generally disclaimed all liability to the extent permitted by law.

In addition, the sponsors of the Strategy Components have licensed, and may continue to license, such Strategy Components for use by other market participants, for publication in newspapers and periodicals, for distribution by information and data dissemination services and for various other purposes, any of which may contribute to an increased or decreased level of investment in such Strategy Components, which could adversely affect the Strategy Value of a Strategy.

The policies of the Strategy Sponsor and changes that affect a Strategy could affect the value of such Strategy

The policies of the Strategy Sponsor concerning the calculation of a Strategy could affect the value of such Strategy and, therefore, the amount payable on any financial instruments linked to such Strategy on the stated maturity date of such financial instruments (or on any other payment date) and the market value of such financial instruments before that date. The amount payable on any financial instruments linked to a Strategy and their market value could also be affected if the Strategy Sponsor changes these policies, for example, by changing the manner in which it calculates such Strategy, or if the Strategy Sponsor discontinues or suspends calculation or publication of such Strategy, in which case it may become difficult to determine the market value of such financial instruments. If such policy changes relating to a Strategy or the calculation or publication of a Strategy is discontinued or suspended, the calculation agent of any financial instrument linked to such Strategy (which may be Goldman Sachs International) may have discretion in determining the level of such Strategy on the relevant determination date and the amount payable on such financial instruments.

The policies of a sponsor and changes affecting a Strategy Component could affect the Strategy and its value

The policies of a sponsor concerning the calculation of the value of a Strategy Component, or additions, deletions or substitutions of Strategy Components and the manner in which changes affecting the Strategy Components could affect the value of a Strategy Component and, therefore, the Strategy Value of such Strategy and any product linked to such Strategy. The Strategy Value could also be affected if the relevant sponsor changes these policies, for example, by changing the manner in which it calculates the value of the Strategy Component, or if the sponsor discontinues or suspends calculation or publication of the value of the Strategy Component, in which case it may become difficult to determine the Strategy Value.

A Strategy relies on the use of third-party information

With respect to any Strategy Component not sponsored by any member of the Goldman Sachs Group, a Strategy methodology relies on information from third-party sponsors of such Strategy Components and other external and internal sources to obtain certain inputs necessary to compute the value of a Strategy. The inability of the Strategy Sponsor and/or any Calculation Agent to source necessary data to calculate the relevant formulae of the Strategy may affect the value of such Strategy. Investors considering acquiring or making an investment in a product linked to such Strategy should carefully read and understand the information about such Strategy Components. Information about the Strategy Components can be found on the Bloomberg Pages specified in the General Description. However, the Goldman Sachs Group 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 such Strategy.

Products linked to a Strategy may be exposed to more or less risk, or perform better or worse, based upon the inputs received from the above suppliers or sources, than an actual investment in or linked to one or more of the Strategy Components.

A Strategy may use values determined using the Strategy Sponsor's own proprietary models

The Strategy may use the Strategy Sponsor's own internal mark of the value of certain Strategy Components which may be derived from proprietary models (the "**Internal Data**"). Investors in products linked to a Strategy may not have access to the Internal Data and any associated models.

There is no guarantee that such Internal Data will correspond with market data if any exist, or that would be determined by other market participants. They do not represent tradable prices.

The Internal Data will depend on the specification of, and inputs used in, the relevant model used by the Strategy Sponsor. A model with a different specification and/or using different inputs would produce different results. The Internal Data may change if required by the Strategy Sponsor's internal policies or applicable law or regulation, or if the models used to calculate it change. The Strategy Sponsor will not be obliged to consider a Strategy when making any changes to the Internal Data or such models and will not have any liability for the effect of such changes on a Strategy.

As such, changes in the value of a Strategy on any day may be opaque and not solely be related to the change in the market value of any options and/or hedge instruments.

A Strategy may be calculated without reference to corrected data

In the event that the value of any component which is used for the calculation of the weight or quantity (as applicable) of any Strategy Component in relation to the Strategy is corrected after such time as it is used in the Strategy, the Calculation Agent(s) may not use such corrected value and may instead use the weight or quantity (as applicable) as calculated before such correction. As a result the performance of a Strategy may differ from the performance had such corrected values been used, and possibly materially so.

A Strategy may be changed or become unavailable

The Strategy Sponsor shall have the right to alter the methodology used to calculate a Strategy or to discontinue publication of the value of a Strategy and such event may result in a decrease in the value of or return on any product linked to such Strategy. The Strategy Sponsor reserves the right to form a Strategy Committee for the purposes of considering certain changes. Any changes may be made without regard to the interests of a holder of any product linked to such Strategy.

Furthermore, the decisions and policies of the Strategy Sponsor concerning the calculation of the value of a Strategy could affect its value and, therefore, the amount payable over the term of any product linked to such Strategy and the market value of such product. The amount payable on any product linked to a Strategy and its market value could also be affected if the Strategy Sponsor changes these policies.

If a Strategy uses an optimisation computer software package then such package may not determine the mathematically optimal result

As part of its pre-determined set of rules a Strategy may use a commercially available optimisation computer software package (an "**Optimiser**") to solve a mathematical optimisation problem, which may be subject to certain optimisation constraints. For example, if specified in the rules of a Strategy such Strategy may use an Optimiser to calculate the weights of certain Strategy Components with the aim of maximising or minimising one or more variables.

As the possible results may be a continuous function, there may be no simple function to test the various combinations of results. Consequently, it is necessary to use approximations contained in computation routines. There is no guarantee that in respect of any optimisation problem an Optimiser will determine the optimal set of results and it is possible that there exist alternative results that satisfy the relevant constraints. Different Optimisers may be more or less likely to determine the optimal result for a Strategy, and using them could lead to a different performance of a Strategy. If such Strategy employed a different Optimiser, the results of rebalancing could be different and possibly materially so. As such, the performance of the Strategy may be dependent on the choice of Optimiser and could be materially different if the Strategy Sponsor replaces the Optimiser at any time.

DISCLAIMERS

The following list of disclaimers does not purport to be a complete list or explanation of all the disclaimers associated with the Strategies.

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NEITHER THE STRATEGY SPONSOR NOR THE STRATEGY CALCULATION AGENT (NOR ANY OF THEIR RESPECTIVE AFFILIATES OR SUBSIDIARIES OR ANY OF THEIR RESPECTIVE DIRECTORS, OFFICERS, EMPLOYEES, REPRESENTATIVES, DELEGATES OR AGENTS) SHALL HAVE ANY RESPONSIBILITY TO ANY PERSON (WHETHER AS A RESULT OF NEGLIGENCE OR OTHERWISE) FOR ANY DETERMINATION MADE OR ANYTHING DONE (OR OMITTED TO BE DETERMINED OR DONE), INCLUDING WITHOUT LIMITATION ANY AMENDMENTS TO OR SUBSTITUTIONS OF ANY STRATEGY COMPONENTS, IN RESPECT OF A STRATEGY OR PUBLICATION OF THE STRATEGY VALUE (OR THE FAILURE TO PUBLISH ANY STRATEGY VALUE) AND ANY USE TO WHICH ANY PERSON MAY PUT A STRATEGY OR THE STRATEGY VALUE. EACH OF THE STRATEGY SPONSOR AND THE STRATEGY CALCULATION AGENT ACTS AS PRINCIPAL AND NOT AS FIDUCIARY AND OWES NO FIDUCIARY DUTIES IN RESPECT OF EACH STRATEGY.

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