

# INDEX GUIDELINE

GSJAN22 Index

Version 1.0

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## INTRODUCTION

This document (the "**GUIDELINE**") is to be used as a guideline with regard to the composition, calculation and maintenance of the GSJAN22 Index (the "**INDEX**"). Any amendments to the rules made to the GUIDELINE are approved by the OVERSIGHT COMMITTEE specified in Section 3.5. The INDEX is owned by Börsenmedien AG ("**INDEX OWNER**"). The INDEX is calculated, administered and published by Solactive AG ("**SOLACTIVE**") assuming the role as administrator (the "**INDEX ADMINISTRATOR**") under the Regulation (EU) 2016/1011 (the "**BENCHMARK REGULATION**" or "**BMR**"). The name "Solactive" is trademarked.

*The text uses defined terms which are formatted with "SMALL CAPS". Such Terms shall have the meaning assigned to them as specified in Section 5 (Definitions).*

**The GUIDELINE and the policies and methodology documents referenced herein contain the underlying principles and rules regarding the structure and operation of the INDEX. SOLACTIVE does not offer any explicit or tacit guarantee or assurance, neither pertaining to the results from the use of the INDEX nor the level of the INDEX at any certain point in time nor in any other respect. SOLACTIVE strives to the best of its ability to ensure the correctness of the calculation. There is no obligation for SOLACTIVE – irrespective of possible obligations to issuers – to advise third parties, including investors and/or financial intermediaries, of any errors in the INDEX. The publication of the INDEX by SOLACTIVE does not constitute a recommendation for capital investment and does not contain any assurance or opinion of SOLACTIVE regarding a possible investment in a financial instrument based on this INDEX.**



# 1 INDEX SPECIFICATIONS

The goal of the INDEX is to provide leveraged exposure, long and short to The Goldman Sachs Group Inc. using options.

## 1.1 IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers:

Name	ISIN	WKN	Currency	Type	RIC	BBG ticker
GSJAN22 Index	DE000SLOCXL9	SLOCXL	EUR	PR*	.GSJAN22	GSJAN22 Index

PR\* means the INDEX is calculated as Price Return. Please see section 2.1 for index formula.

The INDEX is published on the website of the INDEX ADMINISTRATOR ([www.solactive.com](http://www.solactive.com)) and is, in addition, available via the price marketing services of Boerse Stuttgart GmbH and may be distributed to all of its affiliated vendors. Each vendor decides on an individual basis as to whether it will distribute or display the INDEX via its information systems.

Any publication in relation to the INDEX (e.g. notices, amendments to the GUIDELINE) will be available at the website of the INDEX ADMINISTRATOR: <https://www.solactive.com/news/announcements/>.

## 1.2 INITIAL LEVEL OF THE INDEX

The INDEX is based on the INDEX BASE DATE, 14/04/2021. On that date, the components of the INDEX and the conditions of the INDEX are fixed. Historical values from the 14/04/2021, the LIVE DATE, will be recorded in accordance with Article 8 of the BMR. Levels of the INDEX published for a period prior to the LIVE DATE have been back-tested.

## 1.3 PRICES AND CALCULATION FREQUENCY

The level of the INDEX is calculated on each TRADING DAY from 9:30 a.m. to 4:50 p.m. EST based on the BID and ASK PRICES of the INDEX COMPONENTS, as provided by the respective EXCHANGES on which the INDEX COMPONENTS are listed. The most recent BID and ASK PRICE of all INDEX COMPONENTS are used. Should there be no current BID and ASK PRICE available, the most recent BID and ASK PRICE as provided by the respective EXCHANGES on which the INDEX COMPONENTS are listed, for the preceding TRADING DAY is used in the calculation.

BID and ASK PRICES of INDEX COMPONENTS not listed in the INDEX CURRENCY are converted using the current Intercontinental Exchange ("ICE") spot foreign exchange rate.

In addition to the intraday calculation a closing level of the INDEX for each TRADING DAY is also calculated. This closing level is based on the CLOSE BID and CLOSE ASK PRICES of the INDEX COMPONENTS as provided by the



respective EXCHANGES on which the INDEX COMPONENTS are listed. The CLOSE BID and CLOSE ASK PRICES of INDEX COMPONENTS not listed in the INDEX CURRENCY are converted using the 4pm New York time WM Fixing quoted by Refinitiv. If there is no 4pm New York time WM Fixing for the relevant TRADING DAY, the last available 4pm New York time WM Fixing will be used for the closing level calculation.

## 1.4 LICENSING

Licenses to use the INDEX as the underlying value for financial instruments, investment funds and financial contracts may be issued to stock exchanges, banks, financial services providers and investment houses by the INDEX OWNER.

# 2 CALCULATION OF THE INDEX

## 2.1 INDEX FORMULA

The Index Value on TRADING DAY  $t$  is calculated in accordance with the following formula:

$$I_t = \sum_{i=1}^{N_t} U_{i,t} * P_{i,t} * FX_t$$

with:

$I_t$  = Index Value on the TRADING DAY  $t$ .

$N_t$  = Number of INDEX COMPONENTS on TRADING DAY  $t$ .

$U_{i,t}$  = Unit of Index Constituent  $i$  on TRADING DAY  $t$ .

$P_{i,t}$  = Used Price of INDEX COMPONENT  $i$  on TRADING DAY  $t$ , see Section 4.2.

$FX_t$  = the USD/EUR currency rate on TRADING DAY  $t$  if INDEX COMPONENT is in USD, otherwise 1.

If an option expires, the units of the cash component are increased by the price of the option on expiry converted into EUR, see section 4.2, on the following TRADING DAY.

After the LAST EXPIRY DAY, the INDEX is discontinued.

## 2.2 CORPORATE ACTIONS

The INDEX will be adjusted for any Corporate Action affecting the INDEX COMPONENTS according to the Options Clearing Corporation (<https://www.theocc.com/>).



## 2.3 ACCURACY

The level of the INDEX will be rounded to three decimal places.

## 2.4 RECALCULATION

SOLACTIVE makes the greatest possible efforts to accurately calculate and maintain its indices. However, errors in the determination process may occur from time to time for variety reasons (internal or external) and therefore, cannot be completely ruled out. SOLACTIVE endeavors to correct all errors that have been identified within a reasonable period of time. The understanding of "a reasonable period of time" as well as the general measures to be taken are generally depending on the underlying and is specified in the SOLACTIVE Correction Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/correction-policy/>.

## 2.5 MARKET DISRUPTION

In periods of market stress SOLACTIVE calculates its indices following predefined and exhaustive arrangements as described in the SOLACTIVE Disruption Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/disruption-policy/>. Such market stress can arise due to a variety of reasons, but generally results in inaccurate or delayed prices for one or more INDEX COMPONENTS. The determination of the INDEX may be limited or impaired at times of illiquid or fragmented markets and market stress.

# 3 MISCELLANEOUS

## 3.1 DISCRETION

Any discretion which may need to be exercised in relation to the determination of the INDEX (for example the determination of the Index Universe (if applicable), the selection of the INDEX COMPONENTS (if applicable) or any other relevant decisions in relation to the INDEX) shall be made in accordance with strict rules regarding the exercise of discretion or expert judgement.

## 3.2 METHODOLOGY REVIEW

The methodology of the INDEX is subject to regular review, at least annually. In case a need of a change of the methodology has been identified within such review (e.g. if the underlying market or economic reality has changed since the launch of the INDEX, i.e. if the present methodology is based on obsolete assumptions and factors and no longer reflects the reality as accurately, reliably and appropriately as before), such change will be made in accordance with the SOLACTIVE Methodology Policy, which is



incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/methodology-policy/>.

Such change in the methodology will be announced on the SOLACTIVE website under the Section "Announcement", which is available at <https://www.solactive.com/news/announcements/>. The date of the last amendment of this INDEX is contained in this GUIDELINE.

### 3.3 CHANGES IN CALCULATION METHOD

The application by the INDEX ADMINISTRATOR of the method described in this document is final and binding. The INDEX ADMINISTRATOR shall apply the method described above for the composition and calculation of the INDEX. However, it cannot be excluded that the market environment, supervisory, legal and financial or tax reasons may require changes to be made to this method. The INDEX ADMINISTRATOR may also make changes to the terms and conditions of the INDEX and the method applied to calculate the INDEX that it deems to be necessary and desirable in order to prevent obvious or demonstrable error or to remedy, correct or supplement incorrect terms and conditions. The INDEX ADMINISTRATOR is not obliged to provide information on any such modifications or changes. Despite the modifications and changes, the INDEX ADMINISTRATOR will take the appropriate steps to ensure a calculation method is applied that is consistent with the method described above.

### 3.4 TERMINATION

SOLACTIVE makes the greatest possible efforts to ensure the resilience and continued integrity of its indices over time. Where necessary, SOLACTIVE follows a clearly defined and transparent procedure to adapt Index methodologies to changing underlying markets (see Section 3.2 "Methodology Review") in order to maintain continued reliability and comparability of the indices. Nevertheless, if no other options are available the orderly cessation of the INDEX may be indicated. This is usually the case when the underlying market or economic reality, which an index is set to measure or to reflect, changes substantially and in a way not foreseeable at the time of inception of the index, the index rules, and particularly the selection criteria, can no longer be applied coherently or the index is no longer used as the underlying value for financial instruments, investment funds and financial contracts.

SOLACTIVE has established and maintains clear guidelines on how to identify situations in which the cessation of an index is unavoidable, how stakeholders are to be informed and consulted and the procedures to be followed for a termination or the transition to an alternative index. Details are specified in the SOLACTIVE Termination Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/termination-policy/>.

If nothing of the above has occurred, the INDEX will be terminated on the LAST EXPIRY DAY.



### 3.5 OVERSIGHT

An oversight committee composed of staff from SOLACTIVE and its subsidiaries (the “**OVERSIGHT COMMITTEE**”) is responsible for decisions regarding any amendments to the rules of the INDEX. Any such amendment, which may result in an amendment of the GUIDELINE, must be submitted to the OVERSIGHT COMMITTEE for prior approval and will be made in compliance with the Methodology Policy, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/methodology-policy/>.





## 4 INDEX CONSTITUENTS

### 4.1 INDEX COMPONENTS

i	RIC	Underlying	Strike	Type	Expiry	Unit on Base Date	Currency
1	GSA212237000.U	The Goldman Sachs Group Inc.	370	Call	21 <sup>st</sup> Jan 2022	1	USD
2	GSA212241000.U	The Goldman Sachs Group Inc.	410	Call	21 <sup>st</sup> Jan 2022	-1	USD
3	GSA212245000.U	The Goldman Sachs Group Inc.	450	Call	21 <sup>st</sup> Jan 2022	-1	USD
4	GSA212252000.U	The Goldman Sachs Group Inc.	520	Call	21 <sup>st</sup> Jan 2022	1	USD
5	GSM212224500.U	The Goldman Sachs Group Inc.	245	Put	21 <sup>st</sup> Jan 2022	-1	USD
6	GSM212221500.U	The Goldman Sachs Group Inc.	215	Put	21 <sup>st</sup> Jan 2022	1	USD
7		CASH	-	-	-	30	USD

### 4.2 USED PRICES

i	From INDEX BASE DATE to 07/05/2021	From 10/05/2021 to Expiry	On Expiry
1	Ask	Bid	$\max(0, (OC_i - strike_i))$
2	Bid	Ask	$\max(0, (OC_i - strike_i))$
3	Bid	Ask	$\max(0, (OC_i - strike_i))$
4	Ask	Bid	$\max(0, (OC_i - strike_i))$
5	Bid	Ask	$\max(0, (strike_i - OC_i))$
6	Ask	Bid	$\max(0, (strike_i - OC_i))$
7	1	1	1



With:

$OC_i$  = Official Close of the Underlying of the INDEX COMPONENT  $i$  on the TRADING DAY  $t$ .

$strike_i$  = Strike Price of INDEX COMPONENT  $i$  as shown in Section 4.1.

## 5 DEFINITIONS

“**BENCHMARK REGULATION**” shall have the meaning as defined in Section “Introduction”.

“**BMR**” shall have the meaning as defined in Section “Introduction”.

The “**BID PRICE**” and the “**ASK PRICE**” in respect of an INDEX COMPONENT and a TRADING DAY is an option's current bid or ask price as provided by the respective EXCHANGES on which the INDEX COMPONENTS are listed.

The “**CLOSE BID PRICE**” and the “**CLOSE ASK PRICE**” in respect of an INDEX COMPONENT and a TRADING DAY is an option's final regular-hours bid or ask price as provided by the respective EXCHANGES on which the INDEX COMPONENTS are listed.

“**EXCHANGE**” means the Option Pricing Authority (OPRA).

“**GUIDELINE**” shall have the meaning as defined in Section “Introduction”.

“**INDEX**” shall have the meaning as defined in Section “Introduction”.

“**INDEX CALCULATION AGENT**” is SOLACTIVE or any other appropriately appointed successor in this function.

“**INDEX ADMINISTRATOR**” shall have the meaning as defined in Section “Introduction”.

“**INDEX COMPONENTS**” are any options currently included in the INDEX, see as well section 4.1.

“**INDEX CURRENCY**” is the currency specified in the column “Currency” in the table in Section 1.1.

“**INDEX BASE DATE**” shall have the meaning as defined in Section 1.2.

“**INDEX OWNER**” shall have the meaning as defined in Section “Introduction”.

“**LIVE DATE**” shall have the meaning as defined in Section 1.2.

“**LAST EXPIRY DAY**” is the latest expiry of the INDEX COMPONENT as listed in Section 4.1.

“**OVERSIGHT COMMITTEE**” shall have the meaning as defined in Section 4.5.

“**SOLACTIVE**” shall have the meaning as defined in Section “Introduction”.

“**TRADING DAY**” is a day on which the EXCHANGE is scheduled to be open for Trading.

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