

INDEX GUIDELINE

MACSRP INDEX

VERSION 1.0

20 SEPTEMBER 2022



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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 MACSrp Index (the "INDEX"). The Index is calculated, administered and published by Solactive AG ("SOLACTIVE") assuming the role as index administrator (the "INDEX ADMINISTRATOR") under the Regulation (EU) 2016/1011 (the "BENCHMARK REGULATION" or "BMR") and CALCULATION AGENT. The name "Solactive" is trademarked. Solactive assumes the role of the INDEX OWNER.

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

1.1. SCOPE OF THE INDEX

The INDEX is a risk optimized multi asset strategy that invests systematically, is globally diversified, and implemented based on a risk parity framework. The strategy is adjusted monthly according to the investment environment, with the aim of achieving above average, risk adjusted returns through broad diversification across different, complementary asset classes and a systematic consideration of risk and correlation. In addition, the INDEX has a volatility control mechanism with the aim to achieve an annualized volatility of less than or equal to 8%.

1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers:

Name	ISIN	Currency	Type	RIC	BBG ticker
MACS Index	DE000SLOGEX5	USD	TR*	.MACSRP	MACSRP Index

*TR means that the Index is calculated as Total Return Index.

The INDEX is published 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. In the event that data cannot be provided to the price marketing services of Boerse Stuttgart GmbH, the Index cannot be published.

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/>.

1.3. INITIAL LEVEL OF THE INDEX

The initial level of the INDEX on the 31/03/1999, the START DATE, is 100. Historical values from the 26/09/2022, 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.

1.4. PRICES AND CALCULATION FREQUENCY

The level of the INDEX is calculated on each CALCULATION DAY from 9:00 a.m. to 10:50 p.m. CET based on the TRADING PRICES on the EXCHANGES on which the INDEX COMPONENTS are listed. TRADING PRICES of INDEX COMPONENTS not listed in the INDEX CURRENCY are converted using the current Intercontinental Exchange



(ICE) spot foreign exchange rate. Should there be no current TRADING PRICE for an INDEX COMPONENT, the later of: (i) the most recent CLOSING PRICE; or (ii) the last available TRADING PRICE for the preceding TRADING DAY is used in the calculation.

In addition to the intraday calculation a closing level of the INDEX for each CALCULATION DAY is also calculated. This closing level is based on the CLOSING PRICES for the INDEX COMPONENTS on the respective EXCHANGES on which the INDEX COMPONENTS are listed. The CLOSING PRICES of INDEX COMPONENTS not listed in the INDEX CURRENCY are converted using the 04:00 p.m. London time WM Fixing quoted by Reuters. If there is no 04:00 p.m. London time WM Fixing for the relevant CALCULATION DAY, the last available 04:00 p.m. London time WM Fixing will be used for the closing level calculation.

1.5. 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 SOLACTIVE.

2. INDEX SELECTION

2.1. INDEX CONSTITUENTS

The INDEX is composed of the following Assets (each of them an ASSET, together the ASSETS):

ASSET	RIC	BBG Ticker	Currency	RC (in bps)
ISHARES TIPS BOND ETF (*)	TIP.P	TIP US Equity	USD	5
ISHARES USD HY CORP USD ACC (*)	IHYA.L	IHYA LN Equity	USD	5
iShares Core MSCI World UCITS ETF (*)	SWDA.L	SWDA LN Equity	GBP	5
iShares Core MSCI EM IMI UCITS ETF (*)	EIMI. L	EIMI LN Equity	USD	5
iShares Global REIT ETF (*)	REET.P	REET UP Equity	USD	5
SPDR GOLD SHARES (*)	GLD.P	GLD UP Equity	USD	5
United States SOFR Secured Overnight Financing Rate (**)	USDSOFR=	SOFRRATE Index	USD	5

(*) For the bakctest period where no ETF history was available, the performance of the indices tracked by the eligible ETFs was used as a proxy for ETF past performance.

(**) Before 2nd April 2018 (excluded), the Fed Fund rate as published on Bloomberg page FEDL01 Index; From 2nd April 2018 (included): means, in respect of Calculation Date (t), the SOFR rate as published on Bloomberg page SOFRRATE Index. This asset will be referred to as CASH ASSET.



3. CALCULATION OF THE INDEX

3.1. INDEX FORMULA

The INDEX Level for any CALCULATION DAY t , denoted $Index_t$, is determined in accordance with the following formula:

$$Index_t = Index_{t-1} * \left(1 + E_{t-1} * \left(\frac{UBL_t}{UBL_{t-1}} - 1 \right) + (1 - E_{t-1}) * \left(\frac{Cash_t}{Cash_{t-1}} - 1 \right) - TC(t) - HC * \frac{DC_{t,t-1}}{365} \right)$$

$$Index_{START DATE} = 100$$

With:

$t - 1$: The CALCULATION DAY immediately preceding The CALCULATION DAY t

E_{t-1} : Exposure as of CALCULATION DAY $t-1$

UBL_t : The UNDERLYING BASKET Level for CALCULATION DAY t as calculated in section 4.

$TC(t)$: Transaction Costs; $TC(t) = 0.05\% * ABS(E_{t-1} - E_t)$

HC : Holding Costs; $HC=0.4\%$

$Cash_t$: the level of the CASH ASSET and it's calculated according to the following formula:

$$Cash_t = Cash_{t-1} * \left(1 + rate_{t-1} * \frac{DC_{t,t-1}}{360} \right)$$

$$Cash_{Assets Base Date} = 100$$

With:

$DC_{t,t-1}$ = Number of Calendar Days from (and excluding) CALCULATION DAY $t-1$ to (and including) CALCULATION DAY t

$rate_{t-1}$ = From 2nd April 2018 (included) the Level of the SOFR rate as of the CALCULATION DAY $t-1$. If no level is published for the SOFR for CALCULATION DAY $t-1$, the SOFR as of the previous CALCULATION DAY is used. Before 2nd April 2018 (excluded), the Fed Fund rate as published on Bloomberg page FEDL01 Index

$Cash_{t-1}$: the level of the CASH ASSET as of $t-1$



Exposure Calculation:

$$E_t = \min\left(\text{maxLeverage}, \frac{\text{TargetVolatility}}{\text{realizedVolatility}_t}\right)$$

With:

t : The CALCULATION DAY T

$\text{TargetVolatility} = 8\%$

$\text{maxLeverage} = 120\%$

$\text{realizedVolatility}_t$ = the UNDERLYING BASKET REALIZED VOLATILITY as of the t.

The Underlying Basket Realized Volatility Calculation:

The ("UNDERLYING REALIZED VOLATILITY") as of the CALCULATION DAY t is determined in accordance with the following formula:

$$\text{Var}_t^{\text{Long}} = \frac{1}{n^{\text{long}} - 1} * \sum_{i=0}^{n^{\text{long}}-1} \left(\ln\left(\frac{\text{UBL}_{t-i}}{\text{UBL}_{t-i-1}}\right) - \frac{1}{n^{\text{long}}} \sum_{j=0}^{n^{\text{long}}-1} \ln\left(\frac{\text{UBL}_{t-j}}{\text{UBL}_{t-j-1}}\right) \right)^2$$

$$\text{Var}_t^{\text{Short}} = \frac{1}{n^{\text{short}} - 1} * \sum_{i=0}^{n^{\text{short}}-1} \left(\ln\left(\frac{\text{UBL}_{t-i}}{\text{UBL}_{t-i-1}}\right) - \frac{1}{n^{\text{short}}} \sum_{j=0}^{n^{\text{short}}-1} \ln\left(\frac{\text{UBL}_{t-j}}{\text{UBL}_{t-j-1}}\right) \right)^2$$

$$\text{Vol}_t = \sqrt{252 * \max(\text{Var}_t^{\text{Long}}, \text{Var}_t^{\text{Short}})}$$

Where:

n^{long} : 60.

n^{short} : 20.

$t-1$: The CALCULATION DAY immediately preceding the CALCULATION DAY t.

UBL_t = The UNDERLYING BASKET Level for CALCULATION DAY t

UBL_{t-i} = The UNDERLYING BASKET Level for CALCULATION DAY $t-i$.

3.2. ACCURACY

The level of the INDEX will be rounded to 2 decimal places. TRADING PRICES and foreign exchange rates will be rounded to six decimal places.



3.3. . ADJUSTMENTS

Under certain circumstances, an adjustment of the INDEX may be necessary between two regular REBALANCE DAYS. Such adjustment has to be made if a corporate action (as specified in Section 4.4 below) in relation of an INDEX COMPONENT occurs. Such adjustment may have to be done in relation to an INDEX COMPONENT and/or may also affect the number of INDEX COMPONENTS and/or the weighting of certain INDEX COMPONENTS and will be made in compliance with the Solactive Equity Index Methodology, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/equity-index-methodology/>.

SOLACTIVE will announce the INDEX adjustment giving a notice period of at least two TRADING DAYS (with respect to the affected INDEX COMPONENT) on the SOLACTIVE website under the Section “Announcements”, which is available at <https://www.solactive.com/news/announcements/>. The INDEX adjustments will be implemented on the effective day specified in the respective notice.

3.4. CORPORATE ACTIONS

As part of the INDEX maintenance SOLACTIVE will consider various events – also referred to as corporate actions – which result in an adjustment to the INDEX between two regular REBALANCE DAYS. Such events have a material impact on the price, weighting or overall integrity of INDEX COMPONENTS. Therefore, they need to be accounted for in the calculation of the INDEX. Corporate actions will be implemented from the cum-day to the ex-day of the corporate action, so that the adjustment to the INDEX coincides with the occurrence of the price effect of the respective corporate action.

Adjustments to the INDEX to account for corporate actions will be made in compliance with the Equity Index Methodology, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/equity-index-methodology/>. This document contains for each corporate action a brief definition and specifies the relevant adjustment to the INDEX variables.

While SOLACTIVE aims at creating and maintaining its methodology for treatment of corporate actions as generic and transparent as possible and in line with regulatory requirements, it retains the right in accordance with the Equity Index Methodology to deviate from these standard procedures in case of any unusual or complex corporate action or if such a deviation is made to preserve the comparability and representativeness of the INDEX over time.

SOLACTIVE considers following, but not conclusive, list of corporate actions as relevant for INDEX maintenance:

- > Cash Distributions (e.g. payment of a dividend)
- > Stock distributions (e.g. payment of a dividend in form of additional shares)
- > Stock distributions of another company (e.g. payment of a dividend in form of additional shares of another company (e.g. of a subsidiary))
- > Share splits (company's present shares are divided and therefore multiplied by a given factor)



- > Reverse splits (company's present shares are effectively merged)
- > Capital increases (such as issuing additional shares)
- > Share repurchases (a company offer its shareholders the option to sell their shares to a fixed price)
- > Spin-offs (the company splits its business activities into two or more entities and distributes new equity shares in the created entities to the shareholders of the former entity)
- > Mergers & Acquisitions (transaction in which the ownership of a company (or other business organizations) are transferred or consolidated with other entities, e.g. fusion of two or more separate companies into one entity)
- > Delistings (company's shares are no longer publicly traded at a stock exchange)
- > Nationalization of a company (effective control of a legal entity is taken over by a state)
- > Insolvency

3.5. 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/>.

3.6. 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.



4. CALCULATION OF THE UNDERLYING BASKET LEVEL

The ("UNDERLYING BASKET") Level for any CALCULATION DAY t , denoted UBL_t , is determined in accordance with the following formula:

$$UBL_t = UBL_{t-1} * \left(1 + \sum_{i=1}^N W_{i,R(t)} * \left(\frac{NTR_{i,t}}{NTR_{i,t-1}} - 1 \right) - RC(t) \right)$$

$$UBL_{\text{UNDERLYING BASKET START DATE}} = 100$$

Where:

N : The total number of ASSETS in the INDEX excluding the CASH ASSET.

$t-1$: The CALCULATION DAY immediately preceding the CALCULATION DAY t .

$R(t)$: The REBALANCING DAY immediately preceding (but excluding) the CALCULATION DAY t .

$W_{i,R(t)}$: The ASSET WEIGHT of the ASSET i as of $R(t)$.

UBL_{t-1} : The UNDERLYING BASKET Level for CALCULATION DAY $t-1$.

$NTR_{i,t}$: The NET TOTAL RETURN LEVEL of the ASSET i as of the CALCULATION DAY t .

$RC(t)$: The Rebalancing Costs

$$RC(t) = \sum_{i=1}^N RC_i * ABS(W_{i,R(t)} - W_{i,R(t-1)})$$

Where:

RC_i : the rebalancing costs of the component i as specified in section 2.1

5. CALCULATION OF THE TOTAL RETURNS

Each ASSET return is adjusted for regular cash dividend payments, special dividends, extraordinary dividends, and return on capital by reinvesting those distributions into the paying ASSET after applying the withholding tax. The NET TOTAL RETURN level in respect of an ASSET i and a CALCULATION DAY t denoted $NTR_{i,t}$, is calculated in accordance with the following formula:

$$NTR_{i,t} = NTR_{i,t-1} * \frac{CCL_{i,t} + Div_{i,t} * (1 - WHT_i)}{CCL_{i,t-1}} * \frac{FX_{i,t}}{FX_{i,t-1}}$$



$$NTR_{i,ASSETS\ BASE\ DATE} = 100$$

With:

$t-1$ = The CALCULATION DAY immediately preceding The CALCULATION DAY t .

$CCL_{i,t}$ = The ASSET CLOSING LEVEL as of the CALCULATION DAY t .

$Div_{i,t}$ Means the aggregate amount of dividends for Asset i with an ex-dividend date falling in the period from, but excluding, the Index CALCULATION DAY t immediately preceding CALCULATION DAY t to, and including, CALCULATION DAY t

WHT_i = The withholding tax applied to dividends issued by ASSET i .

$FX_{i,t}$ = Spot rate of the ASSET currency i at t CALCULATION DAY t . $FX_{i,t} = 1$ if the currency of the ASSET i is the same as the index currency

6. CALCULATION OF THE ASSETS WEIGHTS

On each SELECTION DAY, each INDEX COMPONENT of the MACSrp Index is weighted according to a proprietary fixed weighting methodology which is aiming at risk parity among the INDEX COMPONENTS and at above average, risk adjusted returns through broad diversification across different, complementary asset classes and a systematic consideration of risk and correlation. The proprietary strategy for weight allocation uses an approach to portfolio management that focuses on allocation of risk rather than allocation of capital

The weights are implemented on the REBALANCING DAY.

The weighting of the INDEX COMPONENTS is determined and provided by the INDEX ADVISER on each SELECTION DAY.



7. MISCELLANEOUS

7.1. 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.

7.2. 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](https://www.solactive.com/news/announcements/)", which is available at <https://www.solactive.com/news/announcements/>. The date of the last amendment of this INDEX is contained in this GUIDELINE.

7.3. 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.



7.4. 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 5.2 "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/>.

7.5. 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/>.



8. DEFINITIONS

“**ASSET**” is each of the assets specified in the section 2.1.

“**ASSETS BASE DATE**” January 4th 1999.

“**ASSET WEIGHT**” shall have the meaning as defined in Section 6.

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

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

“**CALCULATION DAY**” means each day on which the Primary Exchanges in respect of all the Assets are scheduled to be open for trading for their regular trading session..

“**CLOSING PRICE**” in respect of an INDEX COMPONENT and a CALCULATION DAY is a security's final regular-hours TRADING PRICE published by the EXCHANGE and determined in accordance with the EXCHANGE regulations. If the EXCHANGE has no or has not published a CLOSING PRICE in accordance with the EXCHANGE rules for an INDEX COMPONENT, the last TRADING PRICE will be used.

“**Exchange**” is, in respect of the Index and every INDEX COMPONENT, the respective primary exchange where the Index Component has its primary listing. The Committee may decide to declare a different stock exchange the “Exchange” for trading reasons, even if the company is only listed there via a Stock Substitute.

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

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

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

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

“**INDEX COMPONENT**” is each security reflected in the INDEX.

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

“**INDEX ADVISER**” is CAT Financial Products AG.

“**LIVE DATE**” shall have the meaning as defined in Section 1.3.

“**NET TOTAL RETURN**” shall have the meaning as defined in Section 5.

“**OVERSIGHT COMMITTEE**” shall have the meaning as defined in Section 7.5.

“**REBALANCING DAY**” is the CALCULATION DAY immediately following (and excluding) the SELECTION DAY.

“**SELECTION DAY**” is the last calendar day of each month or, if such day does not fall on a CALCULATION DAY, the immediately preceding CALCULATION DAY.

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

“**START DATE**” shall have the meaning as defined in Section 1.3.



“TRADING PRICE” in respect of an INDEX COMPONENT and a TRADING DAY is the most recent published price at which the INDEX COMPONENT was traded on the respective EXCHANGE.

“UNDERLYING BASKET REALIZED VOLATILITY” shall have the meaning as defined in Section 3.1

“UNDERLYING BASKET” shall have the meaning as defined in Section 3.1

“UNDERLYING BASKET START DATE” shall have the meaning as defined in Section 3.1



9. HISTORY OF INDEX CHANGES

1.0	20 September 2022	Index Guideline creation (<i>initial version</i>)

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