Swiss Index

Methodology Rulebook Governing Leveraged Indices

Version 1.50, 21.12.2023

C1 Public

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1 Index Structure

1.1 Introduction

The leveraged indices reflect the daily returns of the underlying indices with added leverage. With underlying indices of either equities or bonds, the following types of index are calculated: Leverage (leverage +2), Short (leverage -1) and Short Leverage (leverage -2). By publishing leveraged indices, investors can replicate investment strategies in a transparent, rule-based and cost-efficient manner.

Given their methodology, leveraged indices are more suited to risk-friendly investors with short-term horizons than to “buy and hold” strategies. Long-term returns of leveraged indices can diverge significantly from the long-term returns of the underlying indices.

The structure, calculation and any changes to the composition of a given index basket for the relevant underlying instrument are regulated in the corresponding rules.

1.2 Revision History

Date	Version	Description
17.12.2021	1.40	Included Section Governance, mainly to increase transparency of bodies and concepts when calculating indices.
21.12.2023	1.50	Clarification of the content in section 4 regarding the information provided at the beginning of a market consultation.

1.3 General Principles

In order to achieve the stated index objective SIX Swiss Exchange defines the general principles that govern the index methodology. SIX Swiss Exchange publishes the index objective and rules for all indices.

- **Representative**
  The development of the market is represented by the index.
- **Tradable**
  The index components are tradable in terms of company size and market.
- **Replicable**
  The development of the index can be replicated in practice with a portfolio.
- **Stable**
  High index continuity.
- **Rules-based**
  Index changes and calculations are rule-based.
- **Projectable**
  Changes in rules are with appropriate lead time (usually at least 2 trading days) – no retrospective rule changes.
- **Transparent**
  Decisions are based on public information.

2 Index Calculation

2.1 Methodology

2.1.1 Calculation Formula

$$LI_{x,t} = \underbrace{LI_{x,T} \times \left[1 + \left(\frac{UI_t - UI_T}{UI_T} \times x\right)\right]}_{LEVERAGE\ TERM}$$

$$\underbrace{+ (1-x) \times LI_{x,T} \times \left[\left(\frac{SARON_T}{360}\right)\right] \times D}_{FINANCING\,/\,INTEREST\ TERM}$$

Legend:

LI:	Leveraged Index
UI:	Underlying Index
t:	Time of calculation
T:	Closing price on last trading day prior to **t**
SARON:	SAR Swiss Average Rate® ON (published in %)
D:	Number of calendar days between **t** and **T**
x = +2:	Leverage Index
x = -1:	Short Index
x = -2:	Short Leverage Index

2.1.2 Leverage Term

The leverage term describes the influence the underlying has on the corresponding leveraged index. Leverage indices reflect the daily price change in the underlying instrument with a leverage factor of 2. For short and short leverage indices, the daily change in the underlying instrument is reflected with a leverage factor of -1 and -2, respectively.

2.1.3 Financing and Interest Term

Financing term and interest term are two rate components that result from the underlying strategy. In the case of a leverage index, capital is obtained on which interest must be paid. With short and short leverage indices, the base capital and proceeds from short sales are invested and therefore generate interest income.

The closing level of SAR Swiss Average Rate ON (SARON) recorded for the previous trading day **T** is used for calculating the rate component during the current trading day **t**.

2.2 Adjustment in Cases of Extraordinary Market Conditions

In order to limit the risk of a total loss, all leveraged indices feature a safety mechanism, which is triggered upon the occurrence of a predefined daily change in the underlying instrument.

2.2.1 Leverage Index

If the underlying instrument at any point in time **t** falls by 25% compared to the previous day's closing level, a new trading day will be simulated intraday on the basis of adjusted $\mathbf{UI_T}$ and $\mathbf{LI_T}$ values. During a trading day, this adjustment process may be repeated as often as required. As a part of this, no financing costs will be taken into account for that particular day.

Threshold value:	$\left(\frac{UI_t}{UI_T}-1\right)\le -25\%$
Simulation of a new trading day:	$UI_{T,new} = UI_{T,old} \times 0.75$ $LI_{T,new} = LI_{T,old} \times (1-0.25\times x)$ $D = 0$

2.2.2 Short and Short Leverage Index

If the underlying instrument at any point in time **t** rises by 25% compared to the previous day's closing level, a new trading day will be simulated intraday on the basis of adjusted $\mathbf{UI_T}$ and $\mathbf{LI_T}$ values. During a trading day, this adjustment process may be repeated as often as required. As a part of this, no interest income will be taken into account for that particular day.

Threshold value:	$\left(\frac{UI_t}{UI_T}-1\right)\ge 25\%$
Simulation of a new trading day:	$UI_{T,new} = UI_{T,old} \times 1.25$ $LI_{T,new} = LI_{T,old} \times (1+0.25\times x)$ $D = 0$

2.3 Calculation Interval and Publication

All leveraged indices are calculated in realtime and immediately published. As soon as there is a change in the price level of the underlying instrument, the corresponding index reading is re-calculated and published. The shortest calculation interval is one second.

All relevant index data are disseminated by SIX Exfeed (a subsidiary of SIX Group).

2.4 Adjustment of Standardization

SIX Swiss Exchange reserves the right to re-standardize the leveraged indices if it considers such to be necessary.

2.5 Information on Index Events

Any relevant forthcoming extraordinary corporate events that result in an adjustment to the indices are published by e-mail via Investor Service.

The registration form is available on the SIX Website. SIX accepts no liability for Investor Service.

3 Correction Policy

An index-related correction is to be made due to two causes. Either because the necessary data is not available or because it is wrong.

3.1 Unavailable Data

If the price level of the given leveraged index’s underlying instrument is not available at some time during regular SIX Swiss Exchange trading hours, the level of that leveraged index will not be calculated.

If data which is necessary to determine the price or weight of an underlying instrument is not available to SIX after the closing auction due to trade suspensions or market distortions the latest available data is used. Such cases may lead to a deviation from the general principles of the indices defined in the respective rulebooks. These changes may be related to review schedules or ordinary reviews and are publicly announced with a notification period of at least 2 trading days.

3.2 Wrong Data

Errors in the necessary data can be caused by calculation errors or by incorrect input data.

Calculation errors which are detected within a trading day are immediately corrected. Intraday tick data is not corrected retrospectively. Calculation errors that are older than a trading day and incorrect input data are only corrected if technically possible and economically viable. If the correction leads to a significant difference in the index levels those can be corrected retrospectively.

4 Governance

The indices are internally managed by the index team of SIX. The team ensures that the rules of the indices are applied, and the indices fulfil the required quality standards. The index team works against structured processes to ensure compliance with a regulatory framework.

Index Commission

The Management Committee of SIX Index Ltd is supported by the Index Commission (advisory board) in all index-related matters, notably in connection with changes to the index rules and adjustments, additions and exclusions outside of the established review and acceptance period. The Index Commission convenes at least twice a year. It provides valuable input on how existing products can be improved and new ones created.

Review of Index Concept

The validity of the index concepts and rules is reviewed on a regular basis and at least annually by SIX. For material changes a broad market consultation is conducted. A change of an index methodology requires approvals according to the governance processes.

The effective date for index methodology changes is aligned, where feasible, with the periodic Index Review. Material methodology changes should generally be publicly announced three months prior to implementation. SIX may decide to shorten the notice period:

- In exceptional or urgent cases or in situations where there is no client or other stakeholder impact and where immediate communication is not possible. A case that requires urgent action is for example a situation in which the investor’s ability to replicate the index performance with his or her portfolio is no longer ensured. In such cases, changes or amendments to the methodology documents must be made on the same day the new methodology or change is implemented.
- For non-material changes i.e. rule clarifications
- To align with the periodic index review dates and the rebalancing of the index.

Market Consultations

Where possible, SIX consults representatives of the affected clients and other stakeholders on all material changes to index rules and on the discontinuation of indices. In this context, a material change to the index rules means a change that “significantly alters the procedures used to determine an index” and thus materially affects the index value compared to an unchanged scenario.

At the beginning of a market consultation SIX will provide the following:

- Information about the key elements of the methodology that is considered to be affected by the proposed material change.
- An assessment whether the representativeness of the benchmark or family of benchmarks, and its appropriateness as a reference for financial instruments and contracts, would be put at risk if the change were not made.
- The time frame of the consultation The timing and duration of the consultation period depends on the materiality of the proposed changes to the index rules. By default, a market consultation for material changes lasts one month.

A summary of the market consultation comments and SIX’ response to those comments will be made available to clients and stakeholders after each consultation period, unless the originator of the comments has requested confidentiality.

Termination of Indices

A decision to discontinue an index will be publicly announced with appropriate lead time. The time frame is dependent on the impact of the cessation. The default notice period is one month.

SIX is not responsible for determining or offering an alternative index when an index is decommissioned.

In case of existing financial products linked to the index of which SIX is aware a market consultation is conducted in advance and a transition period is introduced before the definitive termination. Otherwise no market consultation will be carried out.

Determination of an Index

All indices in this rulebook use values of underlying indices. The index methodology does not use extrapolation to determine the index value.

The minimum data needed for each leveraged index is the index value of an underlying index and SARON. No threshold is defined as to the frequency or the number of updates of the underlying instruments, as the leveraged indices are re-calculated whenever a new value of an underlying index is retrieved.

Potential Limitations of an Index

If data which is necessary to determine the price or weight of an index component is not available to SIX due to trade suspensions or market distortions the latest available data is used. Such cases may lead to a deviation from the general principles of the indices defined in the respective methodology rulebooks. These changes may be related to review schedules, ordinary reviews as well as component and weighting changes outside of ordinary index reviews and are publicly announced with a notification period of at least 2 trading days.

In case of structural changes of the market or economic reality or in cases where the interest in a market has diminished or is non-functioning, the reliability of a methodology can no longer be ensured. SIX reviews the methodology rulebooks at least annually to anticipate any such changes and mitigate its consequences by adjusting the methodology accordingly.

Controls and Rules for the Exercise of Expert Judgement

The rules for each of the indices have been designed to eliminate discretion or expert judgement for the index calculation to the greatest extent possible. However, due to unforeseen market events or the unavailability of date the following situations may materialize:

- Unexpected events, such as complex corporate actions
- Technical reasons, for example the inability of a stock exchange to provide a close price due to a computer outage or the inability of a data provider to deliver certain data points on time.
- Where a rule allows for several interpretations ("unclear rule")
- The absence of a rule in the methodology which potentially leads to a benchmark value which does not properly reflect the nature of the index ("insufficient rule")
- Determination of materiality of changes to the index methodology

In such unexpected cases, a pre-defined incident and escalation process has been established. SIX will evaluate and document the use of discretion as part of the incident management process. To the extent possible, this rulebook will be updated to capture such unexpected cases with a new transparent rule.

In addition, any feedback from market participants about the use of discretion will usually be discussed in the upcoming Index Commission meeting.

Further documentation on regulation and processes can be found on the SIX website.[1] Based on the general principles outlined in section 2, SIX reserves the right to adjust index compositions, component weightings or notification periods.

[1] https://www.six-group.com/en/products-services/financial-information/indices/benchmark-regulation.html

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