



# INDEX GUIDE

ITI FUNDS CRYPTO INDEX

VERSION 1.0 | 12.2018

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## 1 INTRODUCTION

### 1 Introduction

In accordance with Art. 13 No. 1 (a) of Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 (the “Benchmark Regulation”), this document provides the rules for establishing, calculating and maintaining the ITI Funds Crypto Index (“ITIFC”).

#### 1.1 Objective of Index

The index is passive, capitalisation weighted, capped; providing a diversified, long-term and non-speculative investment approach based on a list of crypto assets from the top 30 market leaders.

#### 1.2 About ITI Funds

ITI Funds is a modern buy-side intermediary, advisory and asset management business within emerging and global markets. ITI Funds offers a world-class controllable access to alternative investments and ETFs, and the ability to use products with different risk characteristics and investment horizons to investors and a high-end infrastructure and technology, highly qualified and experienced operational management, and coordinated distribution support to portfolio managers.

#### 1.3 About MV Index Solutions GmbH

MVIS® is a registered trademark of Van Eck Associates Corporation and therefore protected globally against unlawful usage. MVIS has selected an index calculation agent to calculate the index.

#### 1.4 Approval of Index Methodologies

The Index Owner has established the Indices and their individual methodology covered in this Index Guide. A detailed written “Procedure for Index Development” describes the steps and approvals required to develop, document and approve an Index and its methodology. The intention of the Procedure for Index Development is to ensure that the methodology of an Index meets the requirements of Art. 12 of the Benchmark Regulation and is approved and implemented according to a robust and reliable process.

The methodology for each index and its methodology covered in this Index Guide has been analysed by the Index Administrator’s Index Operations department in order to ensure that it is robust and reliable, has clear rules on use of discretion, allows sustainable validation (based on reasonable back testing) and is traceable and verifiable. Furthermore, the size, liquidity and transparency of the underlying market for each methodology has been tested and particular circumstances for each relevant market have been taken into account.

Each index methodology and the related detailed analysis was presented by the Index Operations Department to the Independent Oversight Function for its approval. Based on the aforementioned approval process and its documentation each Index Methodology was presented to the Management Board (Geschäftsführer) of the Index Administrator for final approval.

#### 1.5 Review of this Index Guide

According to Art. 13 No. 1 (b) of the Benchmark Regulation, the Index Administrator reviews this Index Guide on an annual basis and immediately in case of special circumstances that require a review. The review takes place in meetings attended by the Independent Oversight Function and the Management Board of the Index Administrator. If changes to this Index Guide are considered necessary, the process described in Section 4.7 applies.

## 2 GENERAL DEFINITIONS

### 2 General Definitions

#### 2.1 Index Dissemination and Identifiers

The index is calculated with the constituent prices converted to USD, on a daily basis between 00:00 and 24:00 (UTC). Dissemination is in USD. Real-time index values are calculated with the latest available prices each 15 seconds. The closing value is calculated at 24:00:00 UTC with fixed 24:00 UTC exchange rates.

The ITI Funds Crypto Index has the following identifiers:

<b>Index Type</b>	<b>ISIN</b>	<b>SEDOL</b>	<b>WKN</b>	<b>Bloomberg</b>	<b>Reuters</b>
Price Return Index	DE000SLA6UQ4	BHR9729	SLA6UQ	ITIFC	.ITIFC

The index was launched on 12 December 2018 with a base index value of 100.00 as of 31 December 2016.

#### 2.2 Review Schedule

The Index is rebalanced quarterly (the “Quarterly Rebalance Date”) on the first day of January, April, July and October.

The reviews for the Index are based on the closing data (adjusted for reviewed amount outstanding) on the fifth but last business day in the month prior to the Quarterly Rebalance Date. If a security does not trade on a business day, then the last available price for this security will be used.

A “business day” means any day (other than a Saturday or Sunday) on which commercial banks and foreign exchange markets settle payments in Frankfurt.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.

The Index is rebalanced at 24:00:00 UTC of the last trading day in each month.

#### 2.3 Pricing Source

For each component price, the CCCAGG Price Index by CryptoCompare ([www.cryptocompare.com](http://www.cryptocompare.com)) is used. CCCAGG is a weighted average of the latest available trading price at each exchange.

## 4 ONGOING MAINTENANCE

### 3 Quarterly Review

#### 3.1 Index Universe

The index universe includes all crypto currencies traded on the exchanges covered by the CCCAGG pricing provided by Crypto Coin Comparison Ltd. ("CryptoCompare").

#### 3.2 Eligible Index Universe

Coins need to fulfil the following conditions:

- Availability of insured cold storage solution,
- Must be traded on the Genesis OTC platform (Index Owner to expand list of providers),
- Must not be stable coins/pegged assets.
- Must be ranked in the top 30 of the MVIS Digital Assets 100 Index (ex pegged/stable) at current review.

#### 3.3 Index Selection

The assets and tokens fulfilling the universe criteria above are added to the index

#### 3.4 Weighting Scheme

A 15%-cap ensures diversification by assigning weights to components which cannot exceed 15% but still ensures bigger sizes of bigger components.

All components are ranked by their market capitalisation. The maximum weight for any component is 15%. If a constituent exceeds the maximum weight, the weight will be reduced to the maximum weight and the excess weight shall be redistributed pro rata to the market capitalisation across all other index components. This process is repeated until no components have weights exceeding the respective maximum weight.

## 4 Ongoing Maintenance

#### 4.1 Changes in Amount Outstanding

Changes in the amount outstanding will not be adjusted during the quarter, but with the next quarterly review.

#### 4.2 Changes due to Forks

A hard fork occurs when a blockchain protocol is radically changed, such that it becomes incompatible with older versions. In effect, participants taking part in transactions on the old blockchain must upgrade to the new one in order to continue validating transactions. However, participants that do not upgrade may continue to support and validate transactions on the older blockchain protocol separately.

The result of this is that a blockchain splits into two - hence the name 'hard fork'. If there are nodes permanently supporting the new chain, then the two chains will co-exist.

Users that once held digital assets on an older blockchain before the protocol change at a pre-specified blockchain length will now also hold an amount of new coins on the altered blockchain. This new asset

## 4 ONGOING MAINTENANCE

has essentially been derived from an older token as well as its associated blockchain's transaction history.

Each additional component resulting from a fork is immediately added to the index with a price of 0, until it's confirmed it fulfils the eligibility criteria. In case it does not trade, it will be kept with a 0 price until the first price is retrieved. Implementation is effective with the change in the respective block.

In case it does not fulfil the eligibility criteria or it does not trade at the review cutoff date following the fork, it will be removed from the index with a price of 0.

### 4.3 Airdrops

Because most airdrops are of de minimis value and are illiquid or unlisted, the ITIFC does not incorporate their values into the calculation of the Index. Claiming airdrops sometimes requires agency on the behalf of an investor and may pose a security risk. Fund Managers tracking this index may claim potentially valuable airdrops in pursuit of excess returns.

The same treatment applies to soft forks if the process results in a division or split into multiple non-fungible assets.

### 4.4 Changes to Pricing (CCCAGG)

In case an exchange is added to CCCAGG or removed from it, the index divisor will not be adjusted.

### 4.5 Index Corrections

- Index corrections distinguish between calculation errors and incorrect input data.
- Calculation errors detected within a trading day are corrected immediately. Intraday tick data are not corrected retrospectively.
- Calculation errors that are older or based on erroneous input data are corrected if technically possible and economically viable. If significant differences exist, index values can also be corrected retrospectively.

### 4.6 Review of Index Concept

Due to a very dynamic market of crypto assets and tokens the index methodology, parameters and thresholds will be reviewed at least once a year. Market participants feedback is being considered in the process whether or not to make amendments to the methodology and the data sourcing process. Any changes will be communicated by ITI and MVIS with a 60-day lead time to enable customers to adjust their processes.

### 4.7 Changes to the Index Guide

Any changes to the Index Guide will be reviewed and approved by the index owner and MVIS's Legal and Compliance Department. Legal and Compliance may also request a conclusive description and further information on any change and may consult the operations department on such changes. The key elements to be analysed in this phase of the change process are robustness, transparency, reliability and integrity. The result of the review will be communicated to the operations department. The email will be archived by the operations department.

## 4 ONGOING MAINTENANCE

In case of changes that might immediately change the composition of an index or must be considered material for any other reason also need to be approved by the Independent Oversight Function ("IOF") prior to their publication and implementation.

In case of material changes an advance notice will be published and provided to users. MVIS will generally disseminate a notification related to an Index Guide change 60 days prior to the change. A shorter period of time may be applied at MVIS's discretion if the relevant index has not been licensed for a financial product to a third party. The notice will describe a clear time frame that gives the opportunity to analyse and comment upon the impact of such proposed material change. Any material comments received in relation to the Index Guide change and MVIS's response to those comments will be made publicly accessible after any consultation, except where confidentiality has been requested by the originator of the comments.

### 4.8 Discretion regarding the Use of Input Data

Pursuant to Art. 12 No.1. (b), MVIS has established the following rules identifying how and when discretion may be exercised in the administration of an index.

In case input data are or appear to be qualitatively inferior or different sources provide different data, or a situation is not covered by the index rules, MVIS may use or change the data at its own discretion according to the following discretion policy after a plausibility check. This may include

- Liquidity and size data,
- Event information,
- Other secondary data.

Any changes to input data that MVIS intends to apply because of missing data, different data from different sources or other information concluding the inappropriateness or incorrectness of data must subject to reasonable discretion. The decision on any change must be required, appropriate, commensurable and in line with the respective index scope and objective and must reasonably consider in a balance weight the interest of Users, investors in related products and the integrity of the market.

Index operations ensures consistency in the use of discretion in its judgement and decision. Employees involved in the operations team must have shown the respective experience and skills. Significant decisions are subject to sign-off by a supervisor. In case of material changes to data the relevant situation will be analysed in detail, described and presented to the IOF and discussed and reviewed with the IOF.

The broad range of possible data quality problems does not allow to define specific steps for each possible instance. MVIS will always weight the different interest of the index users, the integrity of the market and other involved parties and determine the least disadvantageous measure that equally considers the relevant interests best.

In order to avoid individual decisions on the use of data in similar cases for the future an update of the index rules can be taken into consideration if applicable. Other possible mitigation measures are the change of input data sources or providers and/or own data research where possible and reasonable.

Records are kept about material judgement or discretion by MVIS and will include the reasoning for said judgement or discretion.

## 4 ONGOING MAINTENANCE

### 4.9 Input Data and Contributor Selection

According to the input data requirements under Art. 11 of the Benchmark Regulation the, following shall apply with regard to the input data used for the management and provision of an index and the relevant input data providers (“Contributors”):

- the input data shall be sufficient to represent accurately and reliably the market or economic reality that the benchmark is intended to measure;
- the input data shall be transaction data, if available and appropriate. If transaction data is not sufficient or is not appropriate to represent accurately and reliably the market or economic reality that the index is intended to measure, input data which is not transaction data may be used, including estimated prices, quotes and committed quotes, or other values;
- the input data shall be verifiable;
- clear guidelines regarding the types of input data, the priority of use of the different types of input data and the exercise of expert judgement, to ensure compliance with the Index Guide and index methodology and the aforementioned requirements are defined in the Code of Conduct for Contributors; and
- where an index is based on input data from Contributors, MVIS will obtain, where appropriate, the input data from a reliable and representative panel or sample of Contributors so as to ensure that the resulting index is reliable and representative of the market or economic reality that the index is intended to measure.

In order to control the quality of contributors, MVIS will conduct the following controls:

- Evaluate market share, reputation, quality and cost of possible input data sources and providers before selecting them on the basis of the gathered information and data;
- Compare the input data of one Contributor with the input data from one or more other Contributors in order to ensure the integrity and accuracy of the input data and in case of bad quality replace a Contributor with another Contributor.

MVIS will not use input data from a contributor if it has any indication that the Contributor does not adhere to its Code of Conduct for Contributors and in such a case shall obtain representative publicly available data.



## 5 CALCULATION

### 5 Calculation

#### 5.1 Index Formula

The underlying index is calculated using the Laspeyres' formula:

$$\text{Underlying Index} = \frac{\sum_{i=1}^n p_i * q_i * cf_i * fx_i}{D} = \frac{M}{D}$$

Where (for all tokens (i) in the Index):

- $p_i$  = price,
- $q_i$  = amount outstanding,
- $cf_i$  = weighting cap/floor factor (if applicable, otherwise set to 1),
- $fx_i$  = exchange rate (index currency to USD),
- $M$  = market capitalisation of the index,
- $D$  = divisor.

#### 5.2 Input Data

The following rounding procedures are used for the index calculation:

- Rounding to 2 decimal places:
  - index values,
- Rounding to 6 decimal places:
  - divisors ( $D$ ),
- Rounding to 18 decimal places:
  - prices ( $p_i$ ),
  - exchange rates ( $fx_i$ ),
  - weighting cap/floor factors ( $cf_i$ ).

#### 5.3 Divisor Adjustments

Index maintenance - reflecting changes in amount outstanding, events, addition or deletion of tokens to the Index - should not change the level of the index. This is accomplished with an adjustment to the divisor. Any change to the tokens in the index that alters the total market value of the index while holding token prices constant will require a divisor adjustment.

$$\text{Divisor}_{new} = \text{Divisor}_{old} * \frac{\sum_{i=1}^n p_i * q_i * cf_i * fx_i \pm \Delta MC}{\sum_{i=1}^n p_i * q_i * cf_i * fx_i}$$

$\Delta MC$  = Difference between closing and adjusted closing market capitalisation of the index.

## 6 APPENDIX

### 5.4 Data Correction and Disruptions

MVIS will usually receive information about errors or disruption from calculation agent, index owner, client, internal systems (IT) or by monitoring the respective output.

Incorrect or missing input data will be corrected immediately:

- The error is immediately communicated to the calculation agent, if applicable.
- Calculation agent will be asked to investigate the reason for the error.
- An email will be sent to all affected clients to inform them about the error; this includes the reason for the issue and an estimate on when the issue will be solved.
- MVIS recalculates missing EOD data points and disseminates to vendors and clients.

In case of a material error,

- Legal and Compliance to check the relevant agreements for liability of the calculation agent.
- If MVIS identifies any conduct that may involve manipulation or attempted manipulation of an index by calculation agent it will report this to the regulator.
- Where possible and economically reasonable MVIS will try use another calculation agent.

Investigations and communication regarding disruptions with calculation agents will be handled by Compliance and Senior Management. They are either caused by disruptions in calculation or dissemination, which might affect different servicers.

- The disruption is immediately communicated to the calculation/dissemination agent, if applicable.
- Calculation/dissemination agent will be asked to investigate the reason for the disruption.
- An email will be sent to all affected clients to inform them about the disruption; this includes the reason for the issue and an estimate on when the issue will be solved.
- MVIS prompts calculation agent to make all efforts to restart index calculation.
- MVIS prompts dissemination agent to make all efforts to restart index dissemination.
- MVIS recalculates missing EOD data points and disseminates to vendors and clients.
- Legal and Compliance to check the relevant agreements for liability of the calculation/dissemination agent.
- If MVIS identifies any conduct that may involve manipulation or attempted manipulation of an index by calculation/dissemination agent it will report this to BaFin.
- Where possible and economically reasonable MVIS will try use another calculation and/or dissemination agent.

## 6 Appendix

### 6.1 Changes to the Index Guide

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