

# **Crypto Finance AG**

## **Rules Governing The Crypto Market Index 10**

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# 1 Index Structure

## 1.1 Objective of the Index

The objective of the Crypto Market Index<sup>10</sup> is to reliably measure the performance of the largest and most liquid crypto assets and tokens and provide an investable benchmark for this asset class. The prices for the crypto assets and tokens are obtained from multiple exchanges.

The Index Family consists of one Index for each selected crypto asset or token, which uses prices of this one crypto asset or token against one or more fiat currencies sourced from various exchanges (The “Crypto Average Rates”). In addition, one multi asset Index will be calculated, which includes multiple crypto assets and tokens weighted by their market capitalization (The “Crypto Market Index 10”).

Due to the high dynamic in this relatively new market the index membership of crypto assets and tokens as well as exchanges are reviewed on a quarterly basis.

## 1.2 Index Universe

### 1.2.1 Eligible Exchanges

A set of exchanges is selected in order to retrieve crypto rates from multiple sources. An exchange should meet the following criteria in order to be eligible:

- Support trading for crypto assets and tokens vs USD/EUR/JPY and vice versa
- Investable by international asset managers
- Located in the jurisdictions of FATF members (Financial Action Task Force)
- Providing a market data feed via API to source data on an ongoing basis including price, volume and time stamps
- Stable service operations and in business for at least 6 months
- Significant market share in the overall volumes of the crypto asset and token market
- Information about the exchange will have to be available in English, including a clear statement where the exchange is located and where the place of jurisdiction is
- Exchanges have a sustainable business model in place, e.g. sourcing revenues through trading fees

### 1.2.2 Eligible Crypto Assets and Tokens

The universe is defined by all crypto assets and tokens trading on the selected crypto exchanges that meet the following criteria:

- Application of globally consistent data structures (e.g. blockchain)
- Asset and token pairs vs USD, EUR or JPY available
- Quoted on at least 2 eligible exchanges
- Trading on an exchange at least once a day
- Not primarily designed to ensure anonymity
- No index token, no pegged coins (USDT, Gold, etc..), no security tokens
- A reliable multi-signature hardware wallet solution exists

## 1.3 Inclusion Criteria

For the Crypto Market Index 10 the following minimum thresholds apply:

- Average market capitalization > 1bn USD over the last 30 days (last price times units in circulation)
- Average daily liquidity > 20M USD over last 30 days (based on volume data from eligible exchanges)

### 1.3.1 Crypto Market Index 10

The assets and tokens fulfilling the inclusion criteria above are ranked by their market capitalization in descending order. All assets and tokens up until rank 10 are selected, thus becoming constituents of the Crypto Market Index 10.

In a case where less than 10 assets or tokens fulfill the inclusion criteria, the Crypto Market Index 10 will be calculated with less than 10 constituents and simply include all assets and tokens fulfilling the inclusion criteria.

### 1.3.2 Crypto Average Rates

Each selected crypto asset or token pair which is trading versus EUR, USD or JPY will be calculated as an individual Crypto Average Rate. Prices are sourced from selected exchanges only.

## 1.4 Standardization / Index History

The Crypto Market Index 10 was standardized on 31 December 2016 with an initial baseline value of 1000 points. Its divisor (see Section 2.2) was established such that the result of dividing the total market capitalization by the divisor was an index level of 1'000 points.

The index levels prior to the index launch date have been calculated using average closing prices from eligible exchanges (instead of volume weighted average prices). From the base date of the index until the close of business on 25 January 2018, the index levels have been calculated using a capfactor of 50%. From 26 January 2018 onwards, the methodology in this rulebook applied.

## 1.5 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 Crypto Finance AG with sufficient lead time to enable customers to adjust their processes.

## 1.6 Termination of the Index Calculation

A decision to discontinue will be publicly announced by Crypto Finance AG with appropriate lead time.

In case of existing financial products linked to the index, of which Crypto Finance AG is aware, a market consultation is conducted in advance and a transition period is introduced before the definitive termination.

## 2 Index Calculation

### 2.1 Index Formula

#### 2.1.1 Crypto Average Rates

The input prices used for the Crypto Average Rates are all traded prices of selected crypto asset and token pairs retrieved from selected crypto exchanges. The benchmark is determined on the basis of readily available data provided by the crypto exchanges. Contributed data or submissions are not considered.

Each Crypto Average Rate is calculated as the volume weighted average price ("VWAP") over the last 60 minutes prior to the current index calculation time using the above mentioned input prices.

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$$AR_t = \frac{\sum_{i=1}^{EX} \sum_{j=t-60m}^t P_{i,j,fiat} * V_{i,j,fiat} * X_{fiat\_usd,t}}{\sum_{i=1}^{EX} \sum_{j=t-60m}^t V_{i,j,fiat}}$$

**Legend:**

<b>AR<sub>t</sub>:</b>	Crypto Average Rate in USD (VWAP at t)
<b>t:</b>	Current calculation time
<b>i:</b>	Exchange variable
<b>EX:</b>	Number of exchanges
<b>j:</b>	Time variable
<b>t-60m:</b>	60 minutes prior to t
<b>P<sub>i,j,fiat</sub>:</b>	Crypto to fiat rate on exchange i at time j (1 unit of crypto vs fiat)
<b>V<sub>i,j,fiat</sub>:</b>	Volume of trade P <sub>i,j,fiat</sub>
<b>X<sub>fiat_usd,t</sub>:</b>	Fiat currency to USD rate at time t

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#### 2.1.2 Crypto Market Index 10

The input prices used for the calculation of the Crypto Market Index 10 are the Crypto Average Rates as defined above.

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$$I_t = \frac{\sum_{k=1}^m AR_{k,t} * Supply_k}{D_d}$$

**Legend:**

<b>I<sub>t</sub>:</b>	Crypto Market 10 Index at time t
<b>t:</b>	Current calculation time
<b>k:</b>	Crypto assets/tokens variable
<b>m:</b>	Number of crypto assets and tokens in I <sub>t</sub> (m ≤ 10)
<b>AR<sub>k,t</sub>:</b>	Crypto Average Rate k at time t
<b>Supply<sub>k</sub>:</b>	Units in circulation for crypto asset or token k
<b>D<sub>d</sub>:</b>	Divisor on day d
<b>d:</b>	Current day

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## 2.2 Divisor

The divisor is a technical number used to calculate the index. If variables “m” or “Supply” in the above formula change due to an ordinary index review or some other event (see Section 3), the divisor changes in order to keep the index value at the same level.

## 2.3 Weighting Scheme

The weight of each asset or token in the Crypto Market 10 Index is based on its price and the number of units in circulation.

## 2.4 Calculation Hours and Calendar

All indices are calculated on each trading day of SIX Swiss Exchange from 9 am to 5:30 pm Zurich time. The SIX trading calendar can be found on the SIX Swiss Exchange website.

## 2.5 Calculation Interval and Publication

The Crypto Index Family is disseminated in real-time every minute by SIX Exfeed Ltd (indirect subsidiary of SIX Group Ltd) and provided to major data vendors.

## 2.6 Final Settlement Value (FSV)

A Final Settlement Value (“FSV”) is disseminated for the Crypto Market Index 10, which can be used for the evaluation of financial products linked to this index. The index value calculated at 12:00 Zurich time in accordance with the formula in section 2.1.2, will be flagged as FSV in order for market participants to identify this value specifically.

## 3 Index Adjustments

### 3.1 Ordinary Adjustment Dates

The Crypto Market Index 10 is reviewed four times a year based on data available on the Cut-Off Date. Any resulting changes are implemented on the third Friday of the subsequent month (the "Implementation Date"):

Quarter	Cut-Off Date	Implementation Date
First	Last trading day of February	Third Friday in March
Second	Last trading day of May	Third Friday in June
Third	Last trading day of August	Third Friday in September
Fourth	Last trading day of November	Third Friday in December

The additions and deletions to/from the Index as well as the new number of units in circulation per crypto asset or token will be announced one week prior to the implementation date.

#### 3.1.1 Crypto Average Rates

Eligible crypto asset or token pairs are reviewed and will be added or deleted to/from the Crypto Average Rates effective at the Implementation Date.

#### 3.1.2 Crypto Market Index 10

The units in circulation per crypto asset or token as well as the composition of the Crypto Market Index 10 are reviewed and any changes will be effective at the Implementation Date.

## 3.2 Extra-Ordinary Market Events

### 3.2.1 Initial Coin Offering

New crypto assets and tokens are eligible for the next quarterly review, if they have been issued at least 30 days prior to the respective Cut-Off Date.

Crypto assets and tokens which require additional technical infrastructure in order to be tradable for financial products on the Crypto Market Index 10, will only be added with a lead time of one quarter to ensure implementation.

### 3.2.2 Sustained Chain Splits

For sustained chain splits, the newly created asset or token will be kept in the Crypto Market Index 10 until the next quarterly review. A new Crypto Average Rate will be introduced as pricing source for the Crypto Market Index 10, even if not all criteria in Section 1.2.2 are met. In case the new crypto asset or token does not start trading on the day of the split or the Crypto Average Rate is not available on the first day of trading, an estimated price might be used for the original and the newly created crypto asset or token until trading is resumed.

The membership of the new crypto asset or token will be reviewed at the upcoming quarterly Cut-Off Date in line with Section 1.3.

### 3.2.3 Trade Suspensions and Market Distortions

There are certain circumstances which might require extra-ordinary adjustments to the Crypto Market Index 10. These circumstances include, but are not limited to:

- Longer or recurring outages of an exchange
- Misconduct of an exchange or with a crypto asset or token has been noticed
- Sharp decline in trading volumes of certain crypto assets or tokens, certain exchanges or even larger areas of the crypto market in general
- Implementation of investment restrictions for international investors in certain countries or for certain exchanges
- The number of exchanges per eligible crypto asset or token falls below 2 due to permanent closure of an exchange or permanent delisting of crypto asset or token pairs
- A crypto asset or token does not trade any more permanently or for an extended period of time
- Technological failure

In each of these cases, the last available data will normally be used. In extreme cases and if deemed appropriate by Crypto Finance AG, a deviation from the rules defined in this rulebook can occur, for example, shifting the schedule of a regular index review.

### 3.3 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 Organisation

### 4.1 Index Administrator

The Crypto Market Index 10 is administered by Crypto Finance AG. Crypto Finance AG is responsible for any discretionary decisions which are not specifically mentioned in this rulebook.

Any request with respect to the index administration may be directed to the following address:

Crypto Finance AG  
Gotthardstrasse 28  
CH-6300 Zug

Email: [index@cryptofinance.ch](mailto:index@cryptofinance.ch)  
Phone: +41 41 545 88 11

### 4.2 Calculation Agent

SIX Swiss Exchange is the Calculation Agent of the Crypto Index Family. SIX Swiss Exchange ensures the correct calculation on its systems according to market standards.

Contact details:  
SIX Swiss Exchange Ltd  
Pfingstweidstrasse 110  
P.O. Box  
CH-8021 Zurich

Email: [indexdata@six-swiss-exchange.com](mailto:indexdata@six-swiss-exchange.com)  
Phone: +41 58 399 26 00

## 5 Static Data

Name	ISIN	Symbol	Base Date	Base Value
Crypto Market Index 10	CH0395449405	CMI10	31.12.2016	1000
Average Rate BitCoin Index	CH0395449421	ARBTC	30.12.2016	n.a.
Average Rate Ether Index	CH0395449447	ARETH	16.06.2017	n.a.
Average Rate LiteCoin Index	CH0395449462	ARLTC	16.06.2017	n.a.
Average Rate BitCoin Cash Index	CH0395449488	ARBCH	02.08.2017	n.a.