



CRESCENT CRYPTO  
ASSET MANAGEMENT

# CRESCENT CRYPTO MARKET INDEX (CCMIX) INDEX GUIDE

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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 Crescent Crypto Market Index ("CCMIX/the Index").

#### 1.1 Objective of the Index

The objective of the CCMIX is to track the performance of the market capitalization weighted basket of the largest and most liquid digital assets that are tradeable and secure. The Index is constructed for tracker investments and serves as a tangible benchmark for the industry. Digital asset investors can monitor markets and compare their performance to the CCMIX.

The core focus of the index design is as follows:

1. **Representative & Diversified** - The CCMIX could include up to a maximum of 20 digital assets. The CCMIX employs a trailing 90-day average market cap selection and weighting methodology that reduces turnover and makes the index weightings stickier and less subject to short term price action.
2. **Data Integrity & Liquidity** - Pricing data sources are selected by evaluating the largest exchanges with strong track records of stable, secure performance while maintaining local regulatory compliance. Coins are eligible if they meet substantial liquidity thresholds, which are measured only on the Index's limited list of eligible and trusted exchanges.
3. **Secure & Investable** - The eligible index universe is narrowed to only include digital assets with wallets capable of generating private keys and signing transactions offline, allowing for cold-storage custody. The Index will not hold assets that cannot be stored and transferred safely.

#### 1.2 About Crescent Crypto Asset Management

Crescent Crypto Asset Management is a digital asset index provider that manages a suite of private index funds for US and offshore investors. The Crescent Crypto Index family is owned by Crescent Crypto Asset Management. The 3 founders are Goldman Sachs alumni and have additional experience in venture capital and trading. Crescent reserves the right to update the rules in this index guide at any time.

#### 1.3 About MV Index Solutions GmbH

Crescent Crypto Asset Management has selected an index administrator, MV Index Solutions GmbH (MVIS) to maintain the Crescent Crypto Market Index. MVIS is a third party service provider and is not related to Crescent Crypto Asset Management. MVIS has selected Crypto Coin Comparison Ltd. ('CryptoCompare') as an index calculation agent to calculate the index.

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#### 1.4 Approval of Index Methodology

The Index Owner has established the Crescent Crypto Index family and the individual methodologies 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

## 1 INTRODUCTION

of Art. 12 of the Benchmark Regulation and is approved and implemented according to a robust and reliable process.

The methodologies for the Index covered in this Index Guide has been analyzed by the Index Administrator's Index Operations department in order to ensure that they are robust and reliable, have clear rules on use of discretion, allow sustainable validation (based on reasonable back testing) and are traceable and verifiable. Furthermore, the size, liquidity and transparency of the underlying market for each methodology have 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 5.7 applies.

## 2 INDEX UNIVERSE

## 2 Index Universe

### 2.1 Total Index Universe

The total index universe includes all digital assets traded on the eligible exchanges covered by the CCCAGG pricing provided by CryptoCompare.

### 2.2 Eligible Index Universe

The Crescent Crypto Index family determines a digital asset's eligibility considering the following criteria:

- **Size:** Coins must have trailing 90-day average market cap greater than USD \$500 million.
- **Liquidity:** A coin's trailing 30-day average daily trading volume (30-day ADTV) must be greater than USD \$3 million for at least one day over the past month.
  - A coin must trade on 2 or more eligible exchanges.
  - Trading volumes are calculated using data only from eligible exchanges.
- **Free Floating Price:** No stable coins or pegged assets - coins that are pegged to other digital assets, traditional assets, or fiat currency will not be included.
- **Security & Custody:**
  - Cold storage capable: Air-gapped solution through a hardware wallet or trusted 3rd party with offline transaction ability.
  - Coins have no known security issues - including potential bugs, exposure to 51% attacks, public developers engaged in the project, transparent pre-mine information, announced delistings from exchanges, etc.

## 3 GENERAL DEFINITIONS

### 3 General Definitions

#### 3.1 Treatment of New Entrants

New entrants are afforded some considerations in order to be captured into the Index in a timely and accurate manner:

“Average Market Cap Consideration”: If a new entrant meets all other criteria prior to having 90 days of history on approved exchanges, the average market capitalization used for determining the index weight will be calculated using a simple moving average of the daily market caps since the asset’s first day of trading on an eligible exchange up until the review period.

“Liquidity Consideration”: If a new entrant meets all other criteria prior to having 60 days of history on approved exchanges, the minimum liquidity thresholds will calculate using daily average volumes across eligible exchanges from the asset’s first day of trading on an eligible exchange up until the review period.

#### 3.2 Weighting Methodology

Index constituents’ weighting factors are calculated based on the trailing 90-day average market capitalization. The market capitalization used in the selection process is also used to determine the final constituent weighting. The Index does not use ‘cap’ or ‘floor’ factors to restrict the weights of components, which allow the index to represent the asset class more effectively.

#### 3.3 Review and Rebalance Schedule

The Index is rebalanced monthly (the ‘Monthly Rebalance Date’).

The reviews for the index is based on the opening data (adjusted for changes in circulating supply) on the fourth from the last business day in that month. 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, Germany.

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 16:00:00 ET/EST of the last trading day in each month.

#### 3.4 Pricing Source & Calculation

Eligible exchanges are determined by Crescent Crypto Asset Management on a monthly basis.

Crescent Crypto’s Investment Committee determines and periodically reviews eligible exchanges while considering the following criteria:

- Strong history of security controls,

### 3 GENERAL DEFINITIONS

- Available to US institutional investors,
- Substantial trading volumes,
- Local regulatory compliance and accurate reporting.

For each index component, pricing is calculated using a custom eligible exchange subset of the CCCAGG Price Index by CryptoCompare ([www.cryptocompare.com](http://www.cryptocompare.com)). Exchanges may be excluded if they are not licensed to be added to an index. Values are not backadjusted. Pricing calculation described below:

- All trading pairs on the eligible exchanges are reviewed.
- At each monthly review, the trading pair with the most volume across the eligible exchanges will be selected for each component. Stable coins are excluded from this selection.
- The component price at any time is calculated as exchange volume weighted average price using the latest trade price from all designated exchanges where the coin trades against its most liquid pair. The exchange volume is defined as the past 24-hour trade volume at the designated exchange at any given time.
  - Each exchange's volume is adjusted with a liquidity penalty factor in the case there is down time between trades.
- If the most liquid trading pair for an index component is not USD, the price will be converted back into USD, real-time, using respective custom subset of CCCAGG price index for non-USD trading pairs.

## 4 CRESCENT CRYPTO MARKET INDEX

### 4 Crescent Crypto Market Index

#### 4.1 Review

Upon monthly review: A maximum of 20 assets from the eligible index universe will comprise the index; there is no minimum number of assets.

- The assets fulfilling the universe criteria described in Section (2.2) above are ranked by their market capitalization (based on trailing 90-day average price and current supply) in descending order.
- The top 17 digital assets (if available) qualify for selection.
- The remaining 3 components are selected from the highest ranked remaining index components ranked between 18 and 23 (if available).
- If the number of selected components is still below 20, then the highest ranked digital assets are selected until the number of components equals 20.
- In case less than 20 digital assets are eligible, the index is constituted of all eligible assets and has less than 20 components.

In the event there are more than 20 eligible components, the above methodology allows the last 3 constituents to remain in the portfolio so long as they do not drop below the 23rd position.

Index constituents' weighting factors are calculated based on the trailing 90-day average market capitalization as described in Section (3.2).

#### 4.2 Dissemination and Identifiers

The index is calculated with the constituent prices converted to USD, on a daily basis between 00:00 and 24:00 (ET/EST). Dissemination is in USD. Real-time index values are calculated with the latest available prices each 15 seconds. The closing value is calculated at 16:00:00 ET/EST with fixed 16:00 ET/EST exchange rates.

The Crescent Crypto Market Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SLA6UN1	BHR9718	SLA6UN	CCMIX	.CCMIX

The index was launched on 18 December 2018 with a base index value of 1000.00 as of 31 December 2016.



## 5 ONGOING MAINTENANCE

### 5 Ongoing Maintenance

#### 5.1 Changes in Circulating Supply

Changes in the circulating supply will not be adjusted during the month, but with the next monthly review.

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

##### 5.2.1 Hard & Soft Fork Index Eligibility & Process

There are two criteria that will qualify forked assets as eligible for inclusion in the Index:

1. Forked coins have no known security issues - including potential bugs, exposure to 51% attacks, public developers engaged in the project, transparent pre-mine information, etc.
2. Once a forked coin starts trading on ONE eligible exchange, the forked asset is added to the index value based on the proportional amount that the index received from the fork.
  - Forked asset consideration at monthly reviews, post-fork:
    - If the forked coin is not relying on ANY of the temporary exceptions (see below) at the first review period post-fork, then the forked coin will be reviewed normally and rebalanced to its market cap weighting, which will be a simple moving average of the daily market capitalizations until 90 days of data are available.
    - If the forked coin relies on at least one of the temporary exceptions (see below) at the first review period post-fork, then the position will continue to be held in the amount that it was initially allocated.
      - \* Forked coins relying on a temporary exception do not count towards the maximum number of index constituents.
    - At the second monthly review period post-fork, the forked asset either:
      - \* meets all of the fund's eligibility requirements and is then rebalanced to its average market cap weight, which will be a simple moving average of the daily market capitalizations until 90 days of data are available.
      - \* does not meet all of the fund's eligibility requirements and is then sold and proceeds are reinvested into the index.
  - Temporary Exceptions - In the case of a hard fork, the Index temporarily provides exception for these otherwise required criteria for selection:
    - "Cold Storage Exception"

## 5 ONGOING MAINTENANCE

- \* A forked asset will be eligible for index inclusion without meeting the cold storage requirement for the first review period after the fork.
- “Liquidity Exception”
  - \* A forked asset will be eligible for index inclusion once it trades on at least one eligible exchange for the first review period after the fork.

### 5.2.2 Airdrops

Airdrops are distinct from a hard fork, where small amounts of tokens are distributed to holders of cryptocurrencies either for free or for performing a specific task. Because most airdrops are of de minimis value and are illiquid or unlisted, the Crescent Crypto Index family 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 the Index may claim airdrops in pursuit of excess returns.

### 5.3 Changes to Pricing (CCCAGG)

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

### 5.4 Trade Suspensions and Market Distortions

Extraordinary circumstances including but not limited to multiple exchange outages or failures, drastic market event, regulatory restrictions on coins/exchanges, or extended disruptions may result in rule changes of the Index.

### 5.5 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.

### 5.6 Review of Index Concept

Due to a very dynamic market of crypto assets and tokens each 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 each methodology and the data sourcing process. Any changes will be communicated by Crescent and MVIS with a 60-day lead time to enable customers to adjust their processes.

### 5.7 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 analyzed in this phase of the change process are robustness, transparency, reliability and

## 5 ONGOING MAINTENANCE

integrity. The result of the review will be communicated to the operations department. The email will be archived by the operations department.

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 analyze 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.

### 5.8 Discretion regarding the Use of Input Data and Extraordinary Events

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, an extraordinary event, or a situation is not covered by the index rules, MVIS may use or change data/index composition at its own discretion according to the following discretion policy after a plausibility check. Regarding input data, this may include:

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

Regarding extraordinary events, this may include:

- Trading stops,
- Regulatory actions,
- Hacks,
- Detection of fraud,
- Changes in custodian coverage,
- Etc.

Any changes 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

## 5 ONGOING MAINTENANCE

analyzed 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 in similar cases for the future an update of the index rules can be taken into consideration if applicable. Regarding the use of data, 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.

### 5.9 Input Data and Contributor Selection

According to the input data requirements under Art. 11 of the Benchmark Regulation, following requirements 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.

## 6 CALCULATION

### 6 Calculation

#### 6.1 Index Formula

The Index is calculated using the Laspeyres' formula:

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

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

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

#### 6.2 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 ( $cf_i$ ).

#### 6.3 Divisor Adjustments

Index maintenance - reflecting changes in circulating supply, 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.

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

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

## 6 CALCULATION

### 6.4 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.
- The 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 to 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.
- The 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 to use another calculation and/or dissemination agent.

7 APPENDIX

## 7 Appendix

### 7.1 Changes to the Index Guide

Date	IG Version	Change
18 June 2019	1.1	Inclusion of CCALT, CCDARK and CCSMART
30 November 2019	1.2	Removal of CCALT, CCDARK and CCSMART
4 August 2020	1.3	Clarification of CCCAGG pricing
31 March 2021	1.4	Discretion in case of extraordinary events

## 8 DISCLAIMER

### 8 Disclaimer

MVIS has contracted with CryptoCompare Data Limited to maintain and calculate the Index. CryptoCompare Data Limited uses its best efforts to ensure that the Index is calculated correctly subject to the accuracy of any data that has been provided to it by third parties. Irrespective of its obligations towards MV Index Solutions GmbH, CryptoCompare Data Limited has no obligation to point out errors in the Index to third parties. In particular, MVIS is not responsible for the Licensee and/or for Licensee's legality or suitability and/or for Licensee's business offerings. Offerings by Licensee are not sponsored, endorsed, sold, or promoted by MVIS, Van Eck Associates Corporation as its parent company or its affiliates (collectively, "VanEck"), and MVIS and VanEck make no representation regarding the advisability of investing in Licensee and/or in Licensee's business offerings. **MVIS, VanEck AND ITS AFFILIATES MAKE NO WARRANTIES AND BEAR NO LIABILITY WITH RESPECT TO LICENSEE.**