

cfbenchmarks

CF Capitalization Series

Methodology Guide v1.3

09th February 2023

Table of Contents

| | | |
|----------|--|-----------|
| 1 | Version History | 4 |
| 2 | Introduction | 5 |
| 2.1 | Index Aims | 5 |
| 2.2 | Requirements | 5 |
| 2.3 | Underlying Economic Reality | 6 |
| 3 | Index Parameters | 7 |
| 3.1 | Eligible Index Constituents | 7 |
| 3.2 | Index Denomination | 7 |
| 3.3 | Index Return Types | 8 |
| 3.4 | Calculation & Publication Frequency | 8 |
| 3.5 | Constituent Review Buffers | 8 |
| 3.5.1 | “Top N assets” Constituent Review Screening Buffers | 8 |
| 3.5.2 | “Top <i>n</i> th percentile” Constituent Review Screening Buffers | 9 |
| 3.6 | Constituent Weighting | 9 |
| 3.7 | Index Constituent Pricing Sources (Input Data) | 9 |
| 3.7.1 | Spot Rate | 9 |
| 3.7.2 | Settlement Price | 9 |
| 3.8 | Rebalance Frequency | 10 |
| 3.8.1 | Rebalance Free Float Supply Determination Time | 10 |
| 3.8.2 | Rebalance Price Determination Time | 10 |
| 3.8.3 | Rebalance Implementation Point | 10 |
| 3.8.4 | Rebalance Determination Pricing Sources | 10 |
| 4 | Index Parameter Table | 11 |
| 4.1 | Index Composition Parameters | 11 |
| 4.2 | Settlement Price Variants Parameters | 14 |
| 4.3 | Tickers | 15 |
| 4.4 | Expert Judgement | 16 |
| 5 | Index Calculation Method | 17 |
| 5.1 | Definitions | 17 |
| 5.2 | Weighting Methodology | 19 |
| 5.2.1 | Diversified Free Float Market Capitalization Weights Determination | 19 |
| 5.2.1.1 | Initial Weights | 19 |
| 5.2.1.2 | Diversified Market Capitalization | 19 |
| 5.2.1.3 | New Weights | 20 |
| 5.2.2 | Free Float Market Capitalization Weights Determination | 20 |
| 5.3 | Supply Calculation | 20 |

| | | |
|----------|--|-----------|
| 5.4 | Index Calculation | 20 |
| 5.5 | Metadata | 21 |
| 6 | Contingency Calculation Rules | 22 |
| 6.1 | Delayed Calculation and Dissemination | 22 |
| 6.2 | Calculation Failure | 22 |
| 7 | Restatement & Republishing | 23 |
| 7.1 | Restatement and Republishing of the Index Level | 23 |
| 8 | Methodology Review and Changes to the Index | 24 |

1 Version History

| Version | Date Issued | Summary of Change | Owner |
|---------|--------------------------------|--|--------------------------|
| V1.0 | 17th January 2022 | Launch | CF Benchmarks Management |
| V1.1 | 29 th July 2022 | Parameter Tables: Updated Minimum liquidity ratio | CF Benchmarks Management |
| V1.2 | 7 th December 2022 | <ul style="list-style-type: none"> ● Rename Index family name to “CF Capitalization Series” ● Generalise eligibility screenings as Index parameter ● Generalise weighting methods as Index parameter ● Add Top N asset eligibility screening ● Add free float market capitalization weighting method ● Include UC5 Index | CF Benchmarks Management |
| V1.3 | 09 th February 2023 | <ul style="list-style-type: none"> ● Update Oversight Function name ● Update CF Broad Cap Index names for both variants | CF Compliance Function |

2 Introduction

2.1 Index Aims

An index within the CF Capitalization Series (the “**Index**”) aims to provide index users with exposure to a target capitalization range of the liquid digital asset universe and deliver the associated “beta” return. Whilst a portfolio of multiple digital assets could be said to be diverse, diversified exposure is better achieved if the portfolio weight is not overly concentrated in a small proportion of the constituents. Since inception, the digital asset market has exhibited a very high degree of concentration of market capitalization in the largest digital assets. To that end this Index Series includes the diversified free float market capitalization weighting method to give a more diversified exposure of the market for index users.

The Index has been designed to be investible and to be used as a benchmark as defined by **EU Benchmark Regulations (“EU BMR”)** including for:

- The performance benchmarking of actively managed portfolios of digital assets and determine relative performance
- The passive replication in investment funds and financial instruments and products
- The settlement of financial instruments including derivative contracts
- As a means of valuing or “marking to market” portfolio holdings of digital assets

2.2 Requirements

For the Index to meet its stated aims it must:

- Accurately represent the prevailing price of the constituents in the currency of denomination of the Index (USD)
- Apply a constituent weighting mechanism that accurately reflects the quantity of each constituent available in the open market
- Be able to accurately represent the real-world distribution scenarios for index constituents
- Be replicable without incurring unreasonable costs or unacceptable risks for investors
- Be capable of calculation and administration in a reliable and robust manner in accordance with all CF Benchmarks Administration Policies and the provisions of **EU BMR**

2.3 Underlying Economic Reality

The Index series is intended to measure the underlying economic reality of the value of the base assets in units of the quote asset as held in a portfolio that seeks to replicate the top part of the market capitalization. This is done by observing the exchange of the base assets for the quote asset and vice versa. This is accomplished using transactional input data from Constituent Exchanges, the criteria for eligibility for which are available in the ***CF Constituent Exchange Criteria***.

3 Index Parameters

3.1 Eligible Index Constituents

The constituents for the Index shall always be based on the digital asset Full Market Capitalizations as defined in the ***CF Digital Asset Index Family - Multi Asset Series Ground Rules – Section 4***. The Index will have its constituent eligibility screening as one of the following:

1. Top N assets: Fixed number of assets with the largest Full Market Capitalizations, as defined in the ***CF Digital Asset Index Family - Multi Asset Series Ground Rules – Section 3.2***.
2. Top n^{th} percentile: Assets selected based on their inclusion in the n^{th} percentile of the Investible Universe Full Market Capitalization, as defined in the ***CF Digital Asset Index Family - Multi Asset Series Ground Rules – Section 3.4***.

The Index constituent eligibility screening will be defined in the **Index Parameter Table**.

Digital Assets that are, by their design, pegged to the value of other assets such as but not limited to fiat currency (“stablecoins”), a physical commodity or another digital asset, are not eligible for inclusion. Digital assets whose status as a digital asset is ambiguous or has been questioned by Regulatory and Supervisory Authorities of major jurisdictions including but not limited to the United States of America, the European Union, and the United Kingdom, are not eligible for inclusion.

As the Index weights shall be determined by initially using the free float market capitalization, any digital assets where the Administrator cannot reliably determine the ***Free-Float Supply*** as defined in the ***CF Digital Asset Index Family - Multi Asset Series Ground Rules*** shall also be excluded.

To be able to reliably determine the pricing of any constituent of the Index any digital assets that are not listed on 2 (two) or more constituent exchanges shall not be eligible for Inclusion. To be able to reliably determine the pricing of any constituent of the Index any digital assets that are not listed on 1 (one) or more constituent custodians shall not be eligible for Inclusion.

3.2 Index Denomination

The Index series is denominated in U.S. Dollars.

3.3 Index Return Types

The index is available in two return variants:

- **Total Return:** Inclusive of distributions (such as forks, airdrops amongst others) - the definition and treatment of distributions are defined in the *CF Digital Asset Index Family - Multi Asset Series Ground Rules – Section 8 Treatment of Distributions*
- **Price Return:** Exclusive of distributions

3.4 Calculation & Publication Frequency

The Index shall be calculated at the frequency stated in the **Index Parameter Table**.

3.5 Constituent Review Buffers

Constituent Reviews are carried as described In the *CF Digital Asset Index Family - Ground Rules Section 3 - Constituent Review*.

3.5.1 “Top N assets” Constituent Review Screening Buffers

If the Index has a constituent review screening based on fixed number N of assets with the largest Full Market Capitalizations, the Index will employ the below constituent review buffers:

- Where a cryptocurrency that is not an existing index constituent reaches a market capitalization rank of **3 or higher** it will replace an existing constituent that is the lowest ranked by market capitalization
- Where a cryptocurrency that is not an existing index constituent reaches a market capitalization rank of **4** then it will only enter the index and replace an existing index constituent if an existing index constituent falls to a market capitalization rank of 7 or lower
- Where a cryptocurrency that is not an existing index constituent reaches a market capitalization rank of **5** then it will only enter the index and replace an existing index constituent if the existing index constituent falls to a market capitalization rank of 8 or lower

The buffers above are effective for the case of 5 assets. Proportional buffers will be used for other cases.

3.5.2 “Top n^{th} percentile” Constituent Review Screening Buffers

If the Index has a constituent review screening with assets selected based on their inclusion in the n^{th} percentile of the Investible Universe Full Market Capitalization, the Index will employ the below constituent review buffers:

- Where a digital asset that is an existing index constituent reaches a market capitalization that is fully above the $(n + 0.5\%)^{th}$ percentile it will exit the index
- Where a digital asset that is not an existing index constituent reaches a market capitalization that starts within the $(n - 0.5\%)^{th}$ percentile it will enter the index

3.6 Constituent Weighting

The Index constituents are weighted based on one of the following weighting mechanisms:

- Free Float Market Capitalization Weight, as defined in the ***CF Digital Asset Index Family - Multi Asset Series Ground Rules – Section 4.1.***
- Diversified Market Capitalization Weight, as defined in the ***CF Digital Asset Index Family - Multi Asset Series Ground Rules – Section 4.5.2.***

In all cases, the determination of the free float supply will include the mechanism “Mitigating against large swings in Free-Float Supply” as defined in the ***CF Digital Asset Index Family - Multi Asset Series Ground Rules – Section 4.4.***

The Index constituent weighting will be defined in the Index Parameter Table.

3.7 Index Constituent Pricing Sources (Input Data)

3.7.1 Spot Rate

The Index Constituent Pricing Source shall be the CF Spot Rates available at www.cfbenchmarks.com.

3.7.2 Settlement Price

The Index Constituent Pricing Source shall be the CF Benchmarks Reference Rates available at www.cfbenchmarks.com. The respective methodologies for each of these pricing benchmarks is available at www.cfbenchmarks.com.

Should these sources become permanently unavailable then **CF Digital Asset Index Family - Multi Asset Series Ground Rules - Section 6 Input Data Hierarchy** shall be applied after review by the CF Digital Assets Index Family Oversight Function.

3.8 Rebalance Frequency

The Index shall be rebalanced per the Index Parameter Table in Section 4 below.

3.8.1 Rebalance Free Float Supply Determination Time

Time of the free float supplies determination used in the rebalance weight calculation: 16:00:00 UTC on the day which is 8 business days prior to the Rebalance Implementation Point.

3.8.2 Rebalance Price Determination Time

Time of the price determination used in the rebalance weight calculation and specified in the **Index Parameter Table**.

3.8.3 Rebalance Implementation Point

At the Index Calculation & Publication time on the first business day of Rebalance month.

3.8.4 Rebalance Determination Pricing Sources

The Index Rebalance Determination Pricing Source shall be the CF Benchmarks Reference Rates, Settlement Prices, or other CF Benchmarks pricing sources.

The respective methodologies for each of these pricing benchmarks is available at www.cfbenchmarks.com.

Should these sources become permanently unavailable then **CF Digital Asset Index Family Ground Rules - Section 6 Input Data Hierarchy** shall be applied after review by the CF Digital Asset Index Family Oversight Function.

4 Index Parameter Table

4.1 Index Composition Parameters

- CF Diversified Large Cap

| | |
|---|---|
| Index Name | CF Diversified Large Cap Index |
| Inception Date | December 1st 2021 |
| Inception Value | 1000 |
| Base Currency | USD |
| Constituent Pricing Sources | CF Digital Asset Reference Rates |
| Constituent Selection Method | All constituent falling within the 95% percentile ranked by market capitalization |
| Constituent Weighting Method | Diversified Free Float Market Capitalization Weight |
| Return Types | <ul style="list-style-type: none"> • Total Return • Price Return |
| Calculation & Publication Frequency | <ul style="list-style-type: none"> • Spot Rate: Every second, every day, 365 days a year • Settlement Price: Once per day, 365 days a year |
| Constituent Minimum Liquidity Requirement | 0.05% |
| Constituent Minimum Monthly Asset Turnover | 2% |
| Buffers for Exclusion of an Existing Constituent at reconstitution | <ul style="list-style-type: none"> • 50% of the Minimum Full Market Cap • 50% of the Minimum Liquidity Ratio • 50% of the Minimum Turnover Ratio |
| Increment Parameter | 4% |
| Rebalance Frequency | Quarterly – 1 st business day of March, June, Sep, Dec |

- CF Broad Cap (Diversified Weight)

| | |
|---|---|
| Index Name | CF Broad Cap Index (Diversified Weight) |
| Inception Date | September 1st 2022 |
| Inception Value | 1000 |
| Base Currency | USD |
| Constituent Selection Method | All constituent falling within the 99% percentile ranked by market capitalization |
| Constituent Weighting Method | Diversified Free Floating Market Capitalization |
| Return Types | <ul style="list-style-type: none"> • Total Return |
| Calculation & Publication Frequency | <ul style="list-style-type: none"> • Spot Rate: Every second, every day, 365 days a year • Settlement Price: Once per day, 365 days a year |
| Constituent Minimum Liquidity Requirement | 0.05% |
| Constituent Minimum Monthly Asset Turnover | 2% |
| Buffers for Exclusion of an Existing Constituent at reconstitution | <ul style="list-style-type: none"> • 50% of the Minimum Full Market Cap • 50% of the Minimum Liquidity Ratio • 50% of the Minimum Turnover Ratio |
| Increment Parameter | 4% |
| Rebalance Frequency | Quarterly – 1 st business day of March, June, Sep, Dec |

- CF Broad Cap (Free Float Market Cap Weight)

| | |
|---|---|
| Index Name | CF Broad Cap Index (Free Float Market Cap Weight) |
| Inception Date | September 1 st 2022 |
| Inception Value | 1000 |
| Base Currency | USD |
| Constituent Pricing Sources | CF Digital Asset Reference Rates |
| Constituent Selection Method | All constituent falling within the 99% percentile ranked by market capitalization |
| Constituent Weighting Method | Free Floating Market Capitalization |
| Return Types | <ul style="list-style-type: none"> • Total Return |
| Calculation & Publication Frequency | <ul style="list-style-type: none"> • Spot Rate: Every second, every day, 365 days a year • Settlement Price: Once per day, 365 days a year |
| Constituent Minimum Liquidity Requirement | 0.05% |
| Constituent Minimum Monthly Asset Turnover | 2% |
| Buffers for Exclusion of an Existing Constituent at reconstitution | <ul style="list-style-type: none"> • 50% of the Minimum Full Market Cap • 50% of the Minimum Liquidity Ratio • 50% of the Minimum Turnover Ratio |
| Increment Parameter | 4% |
| Rebalance Frequency | Quarterly – 1 st business day of March, June, Sep, Dec |

- Ultra Cap 5

| | |
|---|---|
| Index Name | CF Ultra Cap 5 Index |
| Inception Date | August 31st 2018 |
| Inception Value | 1000 |
| Base Currency | USD |
| Constituent Pricing Sources | CF Digital Asset Reference Rates |
| Constituent Selection Method | Top 5 asset by Full Market Capitalization |
| Constituent Weighting Method | Free Floating Market Capitalization |
| Return Types | <ul style="list-style-type: none"> • Total Return |
| Calculation & Publication Frequency | <ul style="list-style-type: none"> • Spot Rate: Every second, every day, 365 days a year • Settlement Price: Once per day, 365 days a year |
| Constituent Minimum Liquidity Requirement | 0.05% |
| Constituent Minimum Monthly Asset Turnover | 2% |
| Buffers for Exclusion of an Existing Constituent at reconstitution | <ul style="list-style-type: none"> • 50% of the Minimum Full Market Cap • 50% of the Minimum Liquidity Ratio • 50% of the Minimum Turnover Ratio |
| Increment Parameter | 4% |
| Rebalance Frequency | Quarterly – 1 st business day of March, June, Sep, Dec |

4.2 Settlement Price Variants Parameters

- London Settlement Price

| | |
|---|--|
| Calculation & Publication Time | <ul style="list-style-type: none"> • Spot Rate: Every second • Settlement Price: Between 16:05 and 16:30 London time |
| Rebalance Price Determination Time | 16:00:00 London time on the day which is 6 business days prior to the Rebalance Implementation Point |

- New York Settlement Price

| | |
|---|--|
| Calculation & Publication Time | <ul style="list-style-type: none"> • Spot Rate: Every second • Settlement Price: Between 16:05 and 16:30 New York time |
| Rebalance Price Determination Time | 16:00:00 New York time on the day which is 6 business days prior to the Rebalance Implementation Point |

- Brazil Settlement Price

| | |
|---|--|
| Calculation & Publication Time | <ul style="list-style-type: none"> • Spot Rate: Every second • Settlement Price: Between 16:05 and 16:30 Brazil time |
| Rebalance Price Determination Time | 16:00:00 Brazil time on the day which is 6 business days prior to the Rebalance Implementation Point |

4.3 Tickers

| | |
|--|-----------------|
| CF Diversified Large Cap Index, London Time, Total Return, Spot Rate | CFDLCLDN_RTI_TR |
| CF Diversified Large Cap Index, London Time, Total Return, Settlement Price | CFDLCLDN_RR_TR |
| CF Diversified Large Cap Index, New York Time, Total Return, Settlement Price | CFDLCUS_RR_TR |
| CF Diversified Large Cap Index, Brazil Time, Total Return, Settlement Price | CFDLCBRT_RR_TR |

| | |
|---|-----------------|
| CF Broad Cap Index (Diversified Weight), London Time, Total Return, Spot Rate | CFDBCLDN_RTI_TR |
| CF Broad Cap Index (Diversified Weight), London Time, Total Return, Settlement Price | CFDBCLDN_RR_TR |
| CF Broad Cap Index (Free Float Market Cap Weight), London Time, Total Return, Spot Rate | CFFBCLDN_RTI_TR |
| CF Broad Cap Index (Free Float Market Cap Weight), London Time, Total Return, Settlement Price | CFFBCLDN_RR_TR |
| CF Ultra Cap 5 Index, London Time, Total Return, Settlement Price | CFUC5LDN_RR_TR |
| CF Ultra Cap 5 Index, London Time, Total Return, Spot Rate | CFUC5LDN_RTI_TR |

4.4 Expert Judgement

The Administrator does not utilise expert judgment in the day-to-day calculation of the index. In extraordinary circumstances Expert Judgement may be exercised by the Administrator in the calculation, constituent review and rebalance procedure for the index. This will be done in accordance with its codified policies and processes which are available upon request.

5 Index Calculation Method

5.1 Definitions

| Symbol | Name | Description |
|-------------|--|---|
| t | Effective time | The time at which the index is calculated |
| k_i | Rebalance Implementation Time | The time when the rebalance parameters are implemented at the i^{th} rebalance |
| r_i | Rebalance Free Float Supply Determination Time | The time when the Free Float supply is determined at the i^{th} rebalance |
| s_i | Rebalance Price Determination Time | The time of the price determination used at the i^{th} rebalance |
| v_i | Rebalance weight Determination Time | The time of the weight determination used at the i^{th} rebalance: $v_i = \max(s_i, r_i)$ |
| $c \in C_i$ | Index Constituents | The list of constituents that are determined to be index constituents at the i^{th} rebalance |
| $s_{r_i}^c$ | Rebalance Determination Free Float Supply | The free float supply of constituent c used at the Rebalance Free Float Supply Determination Time |
| $q_{s_i}^c$ | Rebalance Determination Price | The price of constituent c used at the Rebalance Price Determination Time s_i . Note that this may be different from the Constituent Pricing Source |
| M_i^c | Free Float Market Capitalization | The Free Float Market Capitalization of constituent c at the i^{th} rebalance |
| p_t^c | Constituent Pricing Source | The price of constituent c at time t |
| $q_{s_i}^c$ | Rebalance Determination Price | The price of constituent c used at the i^{th} Rebalance Price Determination Time. Note that this may be different from the Constituent Pricing Source |

| | | |
|-------------|--------------------------------|--|
| $Q_{k_i}^c$ | Rebalance Implementation Price | The price of constituent c used at the i^{th} Rebalance Implementation Time. Note that this may be different from the Constituent Pricing Source |
| w_i^c | Initial weight | The weight of constituent c based on the market capitalization at the Rebalance weight Determination Time v_i |
| $w_i'^c$ | Effective weights | The weight of constituent c effective at Time v_i |
| $g_{k_i}^c$ | Relative supply | The relative supply of constituent c at the i^{th} rebalance |
| d_{k_i} | Divisor | Divisor used for the i^{th} rebalance |
| R_{k_i} | Return factor | Return factor for the i^{th} rebalance |
| A_{r_i} | Return amount | Return amount used for the i^{th} rebalance |
| I_t | Index value | Index value at time t |
| IP | Increment Parameter | Unique input Parameter of the Diversified Market Capitalization Method – Section 5.2.3 |
| df_n | Diversifying Factor | Factor to apply to the n^{th} interval in the Diversified Market Capitalization Method - Section 5.2.3 |

Usage of Parameters between Variants: Parameters $Q_{k_i}^c$, p_t^c , R_{k_i} , A_{r_i} and I_t are different between variants of this index family. Each section shall apply to each variant independently, except for those equations which have parameters marked with the variant label:

| Type | Label |
|-----------|-------|
| Spot Rate | RTI |

| | |
|------------------|----|
| Settlement Price | RR |
| Total Return | TR |
| Price Return | PR |

5.2 Weighting Methodology

The index weights are calculated using one of the methods defined in **Constituent Weighting - section 3.6** as specified in the **Index Parameter Table**.

5.2.1 Diversified Free Float Market Capitalization Weights Determination

The methodology modifies, independently for each constituent, the initial market capitalization to obtain a new diversified market capitalization.

The diversifying step is applied incrementally on each percent of the constituent market cap weight.

5.2.1.1 Initial Weights

The initial weight of constituent c in the index at the i^{th} rebalance:

$$\forall c \in C_i, \quad w_i^c = \frac{M_i^c}{\sum_{a \in C} M_i^a}$$

Where $\forall c \in C_i, M_i^c = s_{r_i}^c * q_{s_i}^{c,RR}$

5.2.1.2 Diversified Market Capitalization

The whole index weight (100%) is divided into intervals such that each interval length is the *Increment Parameter IP*.

The diversifying factor df_n corresponds to the n^{th} interval and is defined as follows:

$$\forall n \in \{1, \dots, 25\}, \quad df_n = \frac{1}{n}$$

The new diversified market capitalization at the i^{th} rebalance is:

$$\forall c \in C_i, M'_i{}^c = M_i^c \left(\frac{IP}{w_i^c} \sum_{n=1}^F df_n + df_{F+1} * \frac{R - IP}{w_i^c} \right)$$

Where: $\{F = \text{floor}(\frac{w_i^c}{4})\}$ $R = w_{k_i}^c \text{ modulo } IP$

5.2.1.3 New Weights

The effective weights at the i^{th} rebalance are inferred from the new diversified market capitalization:

$$\forall c \in C_i, w'_i{}^c = \frac{M'_i{}^c}{\sum_{a \in C} M'_i{}^a}$$

5.2.2 Free Float Market Capitalization Weights Determination

In the case where the Index utilizes the Free Float Market Capitalization weighting method, the effective weights are equal to the initial weights:

$$\forall c \in C_i, w'_i{}^c = w_i^c = \frac{M_i^c}{\sum_{a \in C} M_i^a}$$

5.3 Supply Calculation

The relative supplies $g_{k_1}^c$ can be inferred from the new weights $w'_i{}^c$ using the following relation:

$$\{g_{k_1}^c = \frac{w'_1{}^c I_{k_1}}{q_{k_1}^{c,RR}} \quad \forall i \geq 2, g_{k_i}^c = \frac{w'_i{}^c \sum_{a \in C_i} g_{k_{i-1}}^a q_{k_i}^{a,RR}}{q_{k_i}^{c,RR}} \quad (1)$$

The Index inception value I_{k_1} is define in the **Index Parameter Table**.

5.4 Index Calculation

The index value at time t where $k_i \leq t < k_{i+1}$ is given by

$$I_t = \frac{R_{k_i}}{d_{k_i}} \sum_{c \in C_i} g_{k_i}^c p_t^c$$

About R_{k_i} :

At index inception there are no distributions or deductions hence $R_{k_1} = 1$.

If the application point of distribution and deduction events is at the i^{th} rebalance, let the Return Amount A_{r_i} be the sum of all Distribution Proceeds and Deductions Amounts from said events. Then the return factor shall be:

$$\{R_{k_i}^{TR} = R_{k_{i-1}}^{TR} \left(1 + \frac{A_{r_i}}{\sum_{c \in C_{i-1}} g_{k_{i-1}}^c \varrho_{k_i}^{c,RR}} \right) R_{k_i}^{PR} = 1$$

About d_{k_i} :

The divisor is used to scale the index so that the value of the index is fixed at inception and continuous at each rebalancing. The divisor factor shall be:

$$\{d_{k_1} = \frac{1}{I_{k_1}} \sum_{c \in C_1} g_{k_1}^c p_{k_1}^{c,RR} \forall i \geq 2, d_{k_i} = d_{k_{i-1}} \cdot \frac{\sum_{c \in C_i} g_{k_i}^c \varrho_{k_i}^{c,RR}}{\sum_{c \in C_{i-1}} g_{k_{i-1}}^c \varrho_{k_i}^{c,RR}}$$

5.5 Metadata

The *index share* of a constituent is defined as the number of units of a constituent one needs to buy such that the composition of all constituents reproduces the value of the index.

Example:

The index value is 1000. Assume a return factor of 1.6.

$$share_i^c = \frac{R_{k_i}}{d_{k_i}} g_{k_i}^c$$

| Constituent | Price | Weight | Relative supply | Index share |
|-------------|-------|--------|-----------------|-------------|
| A | \$5 | 50% | 62.5 | 100 |
| B | \$2 | 50% | 156.25 | 250 |

6 Contingency Calculation Rules

There may be instances where the Index cannot be calculated according to the calculation methodology.

6.1 Delayed Calculation and Dissemination

Where any Constituent Pricing Source for the calculation of the index is delayed, missing or otherwise not available for any index calculation time the index value shall be deemed delayed, where no index value will be published. The index shall resume publication when valid Constituent Pricing Source(s) are published.

Where any Divisor Adjustment Price for the calculation of the index is delayed, missing or otherwise not available for a Rebalance Implementation Point, the index values(s) on and subsequent from Rebalance Implementation Point shall be deemed delayed, where no index value(s) will be published. The index shall resume publication when valid Divisor Adjustment Price(s) are published.

Where for the above or any reason the Administrator is not able to calculate and publish the index within the Dissemination Time on any given Calculation Day then the Administrator shall publish a notification on its website at blog.cfbenchmarks.com informing index users that calculation and publication has been delayed. The Administrator will seek to publish the Index for that Calculation Day as soon as it is able to.

6.2 Calculation Failure

If the index cannot be calculated for a given Calculation Day before 23:59:59 London time, for instance because:

- A Constituent Pricing Source for the calculation time is not published, or published but not retrieved by the Calculation Agent before 23:59:59 London time
- A Divisor Adjustment Price for the Rebalance Implementation Point is not published, or published but not retrieved by the Calculation Agent before 23:59:59 London time
- Any other reason or circumstance that prevents the orderly calculation of the index

Then the index value for that calculation day is given by the index value on the previous calculation day and this index value shall be published with a marker of (*).

The occurrence of any index calculation failure is reported to the CF Oversight Function and announced at blog.cfbenchmarks.com

7 Restatement & Republishing

The Index is subject to restatement and republishing before 23:59:59 London time of any given Calculation Day due to republication of underlying Constituent Pricing Sources, or errors made by the Calculation Agent or its systems. The index shall not be subject to republishing after this time.

7.1 Restatement and Republishing of the Index Level

The Administrator shall only Restate and Republish the index on any given Calculation Day if the Administrator can restate and republish the index before 23:59:59 London of the given calculation day. The Administrator shall announce on its website that a restatement and republishing of the index will take place for that Calculation Day.

The Administrator shall restate the index as soon as possible after the restated Constituent Pricing Source has been published or the errors made by the Calculation Agent, or its systems are acknowledged and shall do so by overwriting the previously published Index level. This restated index level will carry no mark when published and will be final and not subject to any further change or republication.

The index shall be not restated if any Divisor Adjustment Price is republished.

8 Methodology Review and Changes to the Index

This methodology is subject to internal review by the Administrator and the CF Digital Assets Index Family Oversight Function at least annually.

Any changes to this methodology are overseen by the CF Digital Assets Index Family Oversight Function, and in accordance with EU BMR Article 13.

All *material* changes to the methodology shall only be implemented after a consultation process with users and relevant stakeholders that shall be conducted according to the Administrator's policies and overseen by the CF Digital Assets Index Family Oversight Function.

Should the Administrator deem it necessary to cease providing the Index it shall only do so after a consultation process with users and relevant stakeholders that shall be conducted according to the Administrator's policies and overseen by the CF Cryptocurrency Index Family Oversight Function.