

CF Capitalization Series

Methodology Guide

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1.9

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1 Version History

Version	Date Issued	Summary of Change	Owner
V1.0	17 Jan 2022	Launch	CF Benchmarks Management
V1.1	29 Jul 2022	Parameter Tables: Updated Minimum liquidity ratio	CF Benchmarks Management
V1.2	07 Dec 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 Feb 2023	<ul style="list-style-type: none"> Update Oversight Function name Update CF Broad Cap Index names for both variants 	CF Benchmarks Compliance Function
V1.4	10 Mar 2023	<ul style="list-style-type: none"> Add footnote to reference CFUC5 past methodology Add Contact Information section Add Notice and Disclaimer section Update to the Index Constituent Pricing Source Section 3.7.1. and 3.7.2. 	CF Benchmarks Product Management
V1.5	11 Sep 2023	<ul style="list-style-type: none"> Section 2.2 Requirement updated to reflect different base currencies Ultra Cap 5 EUR and CF Large Cap (Free Float Market Cap Weight) indices added to section 4.1 Index Composition Parameters and section 4.3 Tickers Return Types updated within Section 4.1 for CF Large Cap (Diversified Weight) and CF Large Cap (Free Float Market Cap Weight) Section 7 Restatement & Republishing policy updated 	CF Benchmarks Compliance Function

Version	Date Issued	Summary of Change	Owner
V1.6	13 Nov 2023	Update to logo & format	CF Benchmarks Marketing
V1.7	15 Nov 2023	<ul style="list-style-type: none"> • Changed Turnover buffer from 50% to 25% for Exclusion of Existing Constituents • Changed turnover threshold from 2% to 0.2% for EUR Indices. 	CF Benchmarks Product Management
V1.8	20 Nov 2023	<ul style="list-style-type: none"> • Updated logo (AKC v2) 	CF Benchmarks Marketing
V1.9	06 Feb 2024	<ul style="list-style-type: none"> • Updates to the Administrator communication procedures for Delayed Calculation & Publication; Calculation Failure; Restatement & Republishing and Market Failure Events 	CF Benchmarks 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 **the UK Benchmarks Regulation (“UK 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 base currency of the Index
- 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 UK 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, that are selected based on published **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 – Section 4.3.1* 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 and CME CF Real Time Index Rates available at www.cfbenchmarks.com. The respective methodologies for each of these pricing sources are available at www.cfbenchmarks.com.

3.7.2 Settlement Price

The Index Constituent Pricing Source shall be the CF Settlement Prices and CME CF Reference Rates available at www.cfbenchmarks.com. The respective methodologies for each of these pricing sources are 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 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 sources 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 Large Cap (Diversified Weight)

Index Name	CF Large Cap (Diversified Weight)
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
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 • 25% of the Minimum Turnover Ratio
Increment Parameter	4%
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sep, Dec

- CF Large Cap (Free Float Market Cap Weight)

Index Name	CF Large Cap (Free Float Market Cap Weight)
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
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 • 25% of the Minimum Turnover Ratio
Increment Parameter	4%
Rebalance Frequency	Quarterly – 1st business day of March, June, Sep, Dec

- CF Broad Cap Index (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 • 25% of the Minimum Turnover Ratio
Increment Parameter	4%
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sep, Dec

- CF Broad Cap Index (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 • 25% of the Minimum Turnover Ratio
Increment Parameter	4%
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sep, Dec

- CF Ultra Cap 5

Index Name	CF Ultra Cap 5
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 • 25% of the Minimum Turnover Ratio
Increment Parameter	4%
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sep, Dec

***Note:** As per the original methodology rules, rebalance determination prices used for the CF Cryptocurrency Ultra Cap 5 (“CFUC5”), between inception and 25th June 2021, were the CF Spot Rates and CME CF Real Time Index Rates as of 1600 New York Time. During this period the index was rebalanced monthly on the last Friday of the month. The original methodology rules are deemed accurate for that period and will not be subject to any changes or corrections.

- CF Ultra Cap 5 EUR

Index Name	CF Ultra Cap 5 EUR
Inception Date	September 01st 2018
Inception Value	1000
Base Currency	EUR

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	0.2%
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 • 25% 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 Ultra Cap 5 - Settlement Price London Time, Total Return	UC5_RR_TR
CF Ultra Cap 5 - Spot Rate London Time, Total Return	UC5_RTI_TR
CF Ultra Cap 5 EUR - Settlement Price London Time, Total Return	UC5_EUR_RR_TR
CF Ultra Cap 5 EUR - Spot Rate London Time, Total Return	UC5_EUR_RTI_TR
CF Large Cap (Free Float Market Cap Weight) - London - Settlement Price London Time, Total Return	CFFLCCLDN_RR_TR
CF Large Cap (Free Float Market Cap Weight) - London - Spot Rate London Time, Total Return	CFFLCCLDN_RTI_TR
CF Large Cap (Free Float Market Cap Weight) - Brazil - Settlement Price Brazil Time, Total Return	CFFLCBRT_RR_TR
CF Large Cap (Free Float Market Cap Weight) - US - Settlement Price New York Time, Total Return	CFFLCUS_RR_TR
CF Large Cap (Diversified Weight) - London - Settlement Price London Time, Total Return	CFDLCLDN_RR_TR
CF Large Cap (Diversified Weight) - London - Spot Rate London Time, Total Return	CFDLCLDN_RTI_TR
CF Large Cap (Diversified Weight) - Brazil - Settlement Price Brazil Time, Total Return	CFDLCBRT_RR_TR
CF Large Cap (Diversified Weight) - US - Settlement Price	CFDLCUS_RR_TR

New York Time, Total Return	
CF Broad Cap Index (Free Float Market Cap Weight) - London - Settlement Price London Time, Total Return	CFFBCLDN_RR_TR
CF Broad Cap Index (Free Float Market Cap Weight) - London - Spot Rate London Time, Total Return	CFFBCLDN_RTI_TR
CF Broad Cap Index (Free Float Market Cap Weight) - Brazil - Settlement Price Brazil Time, Total Return	CFFBCBRT_RR_TR
CF Broad Cap Index (Free Float Market Cap Weight) - US - Settlement Price New York Time, Total Return	CFFBCUS_RR_TR
CF Broad Cap Index (Diversified Weight) - London - Settlement Price London Time, Total Return	CFDBCLDN_RR_TR
CF Broad Cap Index (Diversified Weight) - London - Spot Rate London Time, Total Return	CFDBCLDN_RTI_TR
CF Broad Cap Index (Diversified Weight) - Brazil - Settlement Price Brazil Time, Total Return	CFDBCRT_RR_TR
CF Broad Cap (Diversified Weight) - US - Settlement Price New York Time, Total Return	CFDBCUS_RR_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: $v_i = \max(s_i, r_i)$
$c \in \mathcal{C}_i$	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_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 $\forall c \in C_i, M_i^c = s_{r_i}^c * \varrho_{s_i}^{c,RR}$

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:

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

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

5.2.1.3 New Weights

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

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

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:

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

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:

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

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:

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

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:

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

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 Statuspage 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 Cryptocurrency Index Family Oversight Function. Any Calculation Failure events will be clearly communicated to all licensees via Statuspage.

7 Restatement & Republishing

The Administrator implemented CF Benchmarks Multi Asset Index Restatement Policy (“the Policy”) which outlines circumstances; materiality thresholds and timing for the Administrator’s restatement and republishing process. The Policy has been approved by the CF Cryptocurrency Index Family Oversight Function.

Where circumstances require to restate the stated index settlement price it will be restated and republished before 23:59:59 London time of that Calculation Day. For clarity where an error was identified on Day 1 but the process of investigating and agreeing corrective measures was concluded on Day 3 then it will be the Day 3 index settlement price that will be restated and republished before 23:59:59 London time of that Calculation Day. Restatement and Republishing announcements shall be clearly communicated to all licensees via Statuspage.

The Policy is subject to an internal review by the Administrator and the CF Cryptocurrency Index Family Oversight Function at least annually. It will also be reviewed in line with business changes and changes to regulation.

The latest Policy document is available [here](#).

8 Methodology Review and Changes to the Index

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

Any changes to this methodology are overseen by the CF Oversight Function, and in accordance with UK 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 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.

Contact Information

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