

MSCI Digital Assets Reference Indexes Methodology

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Contents

1. Introduction	3
2. Constructing MSCI Digital Assets Reference Index	4
2.1 Applicable Universe	4
2.2 Weighting Scheme	4
2.3 Index Calculation	4
3. Maintaining MSCI Digital Assets Reference Indexes	5
3.1 Index Reviews	5
3.2 Ongoing Event-Related Maintenance	5
Appendix I – Description of Component Indexes	6
Appendix II – Reserve Component Index Administrator	7
Appendix III – Changes to this Document.....	8

1. Introduction

The MSCI Digital Assets Reference Indexes (“the Indexes”) aim to represent the performance of an investment strategy in the underlying single digital assets¹.

Each Index relates to a single digital asset and is constructed for resilience by blending multiple indexes that each seek to robustly represent the performance of the underlying digital asset computed over different daily pricing points.

¹ The Index is governed by a set of methodology and policy documents (“Methodology Set”), including the present index methodology document. Please refer to Appendix III for more details.

2. Constructing MSCI Digital Assets Reference Index

2.1 Applicable Universe

The Applicable Universe consists of a set of digital assets benchmarks (“Component Indexes”) for a single digital asset, published by an external data provider (“Component Index Administrator”)². Each Component Index differs in terms of the choice of the pricing window and hence the timing of the pricing snaps used in the determination of the underlying daily index closing prices.

2.2 Weighting Scheme

The Index blends rebased levels of the Component Indexes³ with a dynamically calculated weight on a daily basis.

On each index business day, weights are allocated to each of the Component Indexes based on the following formula:

$$W(i, t) = \frac{IL(i, t-1)}{\sum_{j=1}^3 IL(j, t-1)}$$

Where:

$W(i, t)$ = Opening Weight allocated to component i on date t

$IL(i, t - 1)$ = Index level of component i on date t

$i = 1$ to 3

2.3 Index Calculation

The Index daily price returns are calculated as the weighted average of daily price returns in US Dollar (USD) of the Component Indexes, based on the weights as calculated in 2.2.

The latest available daily index returns for each of the Component Indexes will be used for the calculation of the returns of the Index. The Index is calculated 5 days a week, from Monday to Friday, in price variant only as per the MSCI Index Calculation Methodology.⁴

² Please refer to Appendix I for details of the current Component Index Administrator and a description of the in-force Component Indexes.

³ Component Indexes from the same Component Index Administrator are blended in the construction of the Index. Component Index levels used in the calculation are rebased levels with the initial value of 100.

⁴ MSCI Index Calculation Methodology is available at <https://www.msci.com/index-methodology>.

3. Maintaining MSCI Digital Assets Reference Indexes

3.1 Index Reviews

The Index is reviewed on a quarterly basis, as of the close of the last business day of February, May, August and November. The pro-forma index is generally announced five business days before the Index effective date. Between two successive index reviews, the weights assigned to Component Indexes are kept constant.

3.2 Ongoing Event-Related Maintenance

There will be no addition to the list of Component Indexes between two successive Index Reviews. If any Component Index is terminated⁵ by the Component Index Administrator, it will be deleted from the Index on the day of termination with an advance notification of two days.

In case of the unavailability of a Component Index level used in the calculation of the Index for whatever reason, MSCI will carry forward the latest available component index level to calculate its indexes.

If fewer than two Component Index levels from the Component Index Administrator were available for more than five business days, then MSCI will calculate the Index based on a set of alternative Component Indexes (“Reserve Component Indexes”) as published by a second external data provider (“Reserve Component Index Administrator”⁶), with similar characteristics as those of the current Component Indexes⁷. Any such change will be reviewed by the MSCI Equity Index Committee (EIC) and an announcement would be sent to all clients with the relevant information and appropriate notice simultaneously.

If MSCI determines that other index levels are necessary to properly capture the index objective, for example, in, but not limited to, stressed market circumstances, persistent or repeated unavailability of full set of Component Indexes or if index levels from the Reserve Component Index Administrator were also unavailable, then an announcement would be sent simultaneously to all clients with the relevant information and appropriate notice of change. All such determinations are approved by the EIC.

All MSCI Digital Assets Reference Indexes are subject to the standard MSCI termination and consultation policies.⁸

⁵ Termination of Component Indexes will be governed by the stated public methodologies of the individual Component Indexes. Relevant links are provided in Appendixes 1 and 2.

⁶ See Appendix 2 for details on the Reserve Component Index Administrator.

⁷ The Indexes will use the Reserve Component Indexes, when needed, starting July 1, 2024

⁸ MSCI Index Policies are available at <https://www.msci.com/index-methodology> for details on MSCI’s index governance policies.

Appendix I – Description of Component Indexes

Each Index is constructed by blending two or more Component Indexes representing the same digital asset. Component Indexes from a single Component Index Administrator differ only in the choice of pricing window.

MSCI Bitcoin Reference Index

The MSCI Bitcoin Reference Index is a combination of following Component Indexes

- Compass Crypto Custom Reference Index Bitcoin 3pm-3:20pm London Time
- Compass Crypto Custom Reference Index Bitcoin 3:20pm-3:40pm London Time
- Compass Crypto Custom Reference Index Bitcoin 3:40pm-4:00pm London Time

At launch of the MSCI Bitcoin Reference Index, the calculation of the Index and its history is based upon the blend of the Bitcoin Compass Crypto Custom Reference Indexes⁹. These Component Indexes are governed by the same index methodology, but use different daily closing price definitions. Each Component Index is calculated for the three successive 20-minute intervals between 3 pm London time and 4 pm London time. The within-interval calculation is based on the 25th, 50th and 75th weighted price percentiles for resilience to outliers and price/volume distribution changes.

MSCI Ethereum Reference Index

The MSCI Ethereum Reference Index is a combination of following Component Indexes

- Compass Crypto Custom Reference Index Ethereum 3pm-3:20pm London Time
- Compass Crypto Custom Reference Index Ethereum 3:20pm-3:40pm London Time
- Compass Crypto Custom Reference Index Ethereum 3:40pm-4:00pm London Time

At launch of the MSCI Ethereum Reference Index, the calculation of the index and its history was based upon the blend of the Ethereum Compass Crypto Custom Reference Indexes. These Component Indexes are governed by the same index methodology, but use different daily closing price definitions. Each Component Index is calculated for the three successive 20-minute intervals between 3 pm London time and 4 pm London time. The within-interval calculation is based on the 25th, 50th and 75th weighted price percentiles for resilience to outliers and price/volume distribution changes.

⁹ Please refer to Section 3 of Compass Crypto Custom Reference Indices methodology for details on the index calculation and Section 4 for index governance, at https://www.compassft.com/wp-content/uploads/CCCRI_Methodology.pdf

The Benchmark Statement for the Compass Crypto Reference Indexes can be found at https://www.compassft.com/wp-content/uploads/CCRI_Benchmark_Statement.pdf

Appendix II – Reserve Component Index Administrator

The fallback mechanism described in Section 3.2 requires data from a Reserve Component Index Administrator.

Starting July 1, 2024, the Indexes will use, when needed, Reserve Component Indexes supplied by CCData, a regulated benchmark administrator formerly known as CryptoCompare.¹⁰

In the event the fallback calculation is required, the corresponding Reserve Component Indexes provided by CCData will be used for the Index calculation:

Bitcoin:

- CCData Bitcoin Reference Price 15:20 London Time Index
- CCData Bitcoin Reference Price 15:40 London Time Index
- CCData Bitcoin Reference Price 16:00 London Time Index

Ethereum:

- CCData Ethereum Reference Price 15:20 London Time Index
- CCData Ethereum Reference Price 15:40 London Time Index
- CCData Ethereum Reference Price 16:00 London Time Index

CCData's proprietary index calculation is based on 24-hour volume-weighted average calculation, time-penalty factor, and outlier methodology. All index methodology and other reference documents may be found at <https://ccdata.io/indices/index-documentation>.

While the Reserve Component Indexes also aim to reflect the performance of the underlying digital asset computed over the respective daily pricing points, the Reserve Component Index methodologies remain proprietary and may differ from those applied by the Component Index Administrator including, but not limited to, the exact calculation methodology, the choice of reference trading platforms and the number/frequency/timing/calculation of pricing snaps used in the determination of the underlying daily closing prices.

¹⁰ Effective from 1st July 2024. Further details about CCData may be found at <https://ccdata.io/>

Appendix III - Methodology Set

The indexes are governed by a set of methodology and policy documents (“Methodology Set”), including the present index methodology document as mentioned below:

- Description of methodology set – <https://www.msci.com/index/methodology/latest/ReadMe>
- MSCI Corporate Events Methodology – <https://www.msci.com/index/methodology/latest/CE>
- MSCI Fundamental Data Methodology – <https://www.msci.com/index/methodology/latest/FundData>
- MSCI Index Calculation Methodology – <https://www.msci.com/index/methodology/latest/IndexCalc>
- MSCI Index Glossary of Terms – <https://www.msci.com/index/methodology/latest/IndexGlossary>
- MSCI Index Policies – <https://www.msci.com/index/methodology/latest/IndexPolicy>
- MSCI Global Industry Classification Standard (GICS) Methodology – <https://www.msci.com/index/methodology/latest/GICS>
- MSCI Global Investable Market Indexes Methodology – <https://www.msci.com/index/methodology/latest/GIMI>

The Methodology Set for the Indexes can also be accessed from MSCI’s webpage <https://www.msci.com/index/methodology> in the section ‘Search Methodology by Index Name or Index Code’.

Appendix IV – Changes to this Document

First version reviewed and published in November 2023.

The following modifications are effective from February 2024:

Section 3: Maintaining MSCI Digital Assets Reference Indexes

- Updated footnote with revised effective date for Reserve Component Indexes usage

Appendix II - Reserve Component Index Administrator

- Updated footnote with revised effective date for Reserve Component Indexes usage

The following sections have been modified since April 2024:

Section 2.2 and 2.3

- The Index daily price returns calculation is amended as price-weighted average of daily price returns in US Dollar (USD) of the Component Indexes.

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The process for submitting a formal index complaint can be found on the index regulation page of MSCI's website at: <https://www.msci.com/index-regulation>.

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