



CMBI Momentum Series Methodology

Version 1.1

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1 Introduction

Coin Metrics' mission is to provide transparent and actionable cryptoasset market and network (on-chain) data. As one of the early providers of both market and network data, Coin Metrics is uniquely positioned to provide investors with a high quality suite of crypto indexes.

The Coin Metrics Bletchley Indexes ("CMBI") are designed to provide cryptoasset markets with a diverse range of market capitalization-weighted, equal-weighted and network data-weighted indexes to measure performance of the largest and most utilized global cryptoassets. CMBI products are operated and calculated by Coin Metrics and are designed to serve as an independent, transparent, and comprehensive measure of cryptoasset market performance.

Indexes are weighted and calculated using a robust and resilient methodology that is resistant to manipulation and adheres to international best practices for financial benchmarks, including the International Organization of Securities Commissions' (IOSCO) Principles for Financial Benchmarks. The Coin Metrics Oversight Committee (the "Oversight Committee") protects the integrity of CMBI and ensures the indexes serve as a source of transparent and independent benchmarking.

1.1 Description

Coin Metrics Momentum Indexes aim to reflect the performance of the momentum factor for a variety of CMBI Parent Indexes ("Parent Indexes"). A Parent Index is any CMBI Single Asset Series or CMBI Multi Asset Series Index.

Constituents for the momentum indexes are selected based on eligibility criteria and their 10 year expected future market capitalization, as defined in the Parent Indexes methodology. The weight of each cryptoasset within the index is dynamic and based on the momentum scores of the asset during the momentum observation period.

There are two measures of momentum that determine how constituents are selected and weighted in Coin Metrics momentum strategies:

1. The total market's momentum during the observation period. This is defined as the sum of the momentum scores across the index constituents during the observation period and defines how much of the index is weighted to crypto assets and cash for each strategy. The calculation of the Momentum Score is defined in Section 4.2.1.
2. Each individual constituent's momentum score, which defines how much of an index's total allocation is assigned to a specific constituent.

In the highly volatile and new asset class of cryptoassets, short term momentum durations (i.e. 5-30 days) have empirically provided a more prominent momentum signal than longer term

momentum (>30 days). High momentum cryptoassets have demonstrated continuance of trend over the very near term (<30 days).

Given the early stages and financial immaturity of the cryptoasset market, there is not enough sophisticated trading infrastructure, custody solutions, liquidity or other financial services to support the long tail of cryptoassets. Many of these factors have gone into the design of CMBI products and the methodology outlined below so as to create a suite of truly investable indexes. As the ecosystem evolves and becomes more sophisticated it may be deemed that other indexes become investable.

Index levels are available through the Coin Metrics website (<https://indexes.coinmetrics.io/>), major financial quote vendors and print and electronic media outlets.

1.2 Administration

Coin Metrics serves as the administrator for CMBI products and has primary responsibility for all aspects of the index construction process, including development, definition, determination, dissemination, operation, and governance. All aspects of index production are carried out by Coin Metrics; however, Coin Metrics may rely on third party agreements to obtain data inputs for index calculation.

Coin Metrics ensures that transparency in relation to significant decisions and associated rationale are published and made available to external stakeholders. Data contingency and exclusion rules are in place to handle certain extraordinary circumstances and external factors beyond the control of Coin Metrics.

2 Other Documents

The CMBI Indexes are collectively governed by policies described in [CMBI Index Policies](#), which outline the administration, oversight, conflicts of interest, significant changes and terminations, recalculations, internal controls, complaints, record retention, and compliance policies.

The CMBI Indexes are supervised by the [CMBI Governance Committee Charter](#), which defines the roles and responsibilities of the Oversight Committee and the Index Committee.

3 Data Inputs

3.1 Coin Metrics Prices

Constituent price data for CMBI Multi Asset Indexes is sourced from Coin Metrics Reference Rates. Refer to the [CM Prices Methodology](#) for more information on hourly/end-of-day and real-time pricing.

3.2 Eligibility Criteria

The eligible universe is represented by the constituent assets selected in the CMBI 10 (CMBI10) monthly rebalances. All other digital assets that are not included in the CMBI 10 are excluded.

4 Index Calculation Methodology

4.1 Approach

Constituents eligible for a CMBI Momentum Series' Parent Index are typically rebalanced monthly on the first business day of the month at 16:00 ET (the "Parent Index Effective Date"). Whilst the eligible constituents for a CMBI Momentum Series' Parent Indexes are determined on the first business day of the month, constituent composition for a CMBI Momentum Series product is only changed upon the subsequent Momentum Index rebalancing.

Business days are defined as Monday to Friday, excluding public holidays, as defined by the New York Stock Exchange (NYSE) holidays and trading hours calendar.

To the extent that a forked asset meets the Coin Metrics definition of 'legitimate' (as defined in the CMBI Fork Legitimacy Policy), a liquidation event will occur during index rebalancing. Coin Metrics does not deem airdrops as eligible for a liquidation event in the CMBI Momentum Series. When there is no liquidation event for any fork, the rebalance process will still be conducted but will result in no change to an index.

4.2 Momentum Weighting

The cryptoasset market has historically been highly correlated in price movements. As such, Coin Metrics' Momentum Indexes strive to capture both market momentum and specific asset momentum in the determination of asset weighting across indexes.

4.2.1 Constituent Momentum Score

The momentum score is defined by its return over the observation period.

$$Score = \frac{P_{T-1}}{P_{T-(N+1)}} - 1 \quad (1)$$

Where,

P_{T-1} = Constituent's CM Reference Rate one calendar day prior to the rebalancing date (T)

N = Observation Period (number of days)

$P_{T-(N+1)}$ = Constituent's CM Reference Rate (N+1) days prior to the rebalancing date (T)

The momentum score is computed excluding the most recent day of cryptoasset performance.

4.2.2 Momentum Hurdle Level

The momentum hurdle is defined as the level at which as constituent is considered to have sufficient momentum and be included during the following rebalance for an index. For example, if an asset's Momentum Score is higher than the Momentum Hurdle Level, it is defined as having momentum and warrants an allocation as defined by the methodology. However, if an asset's Momentum Score is lower than the Hurdle Rate, it is not considered during the upcoming momentum index rebalance.

The Momentum Hurdle Level varies between indexes and is defined in each index's construction parameters in (section).

4.2.3 Constituent Momentum Factor

Constituents are considered to exhibit the Constituent Momentum Factor if their Constituent Momentum Score, as defined by (Equation 1), exceeds the index's Momentum Hurdle Level, as defined in Section 4.2.2.

Each eligible constituent's Momentum Factor is measured independently in a binary nature, as follows. Each constituent is:

- Assigned a Constituent Momentum Factor of 1 if their Constituent Momentum Score is greater than the index's Momentum Hurdle Level.
- Assigned a Constituent Momentum Factor of 0 if their Constituent Momentum Score is less than or equal to the index's Momentum Hurdle Level.

4.2.4 Constituent Total Momentum Score

An index's Constituent Total Momentum Score is the sum of Constituent Momentum Factors within the index. An index's Constituent Total Momentum Score has:

- a minimum score of 0, when the sum of an index's Constituent Momentum Factors are 0 (i.e. no constituent has a Momentum Score greater than the Momentum Hurdle Level).
- A maximum score equal to the number of constituents in the index, when all constituents have a Momentum Factor of 1.

CMBI Momentum Indexes are not necessarily fully allocated to cryptoassets. Indexes can allocate up to 100% of its weight to cash if there is no momentum in any of the constituent assets. The total weight allocated to cash into a momentum strategy is dependent on the Market Momentum Score, as defined for each specific index in Section 4.4.

4.3 Weighting Scheme

For any given rebalance effective date, cryptoassets eligible for inclusion in a CMBI Momentum Index are defined by the Parent Index Constituents. The index weighting assigned to cryptoassets and cash is determined by each specific Index's Constituent Total Momentum Score and the Individual Constituent Weighting schemas outlined in Section 4.4.

4.4 CMBI Momentum Indexes

4.4.1 CMBI 10 14d Momentum Index

The CMBI 10 14d Momentum Index is rebalanced weekly at 12:00 UTC on the first business day of the week ("Effective Date"). The rebalancing reference date ("Reference Date") is one calendar day prior to the rebalancing day at 12:00 UTC. Business days are defined as Monday - Friday excluding public holidays, as defined by the New York Stock Exchange (NYSE) holidays and trading hours calendar. Calendar days are defined as every day of the year (including weekends and public holidays).

The rebalancing process is as described below:

1. Constituents: The eligible constituents during any rebalance are those of the CMBI 10.
2. Observation Period: 14 days
3. Momentum Hurdle Level: 8 percent
4. Constituent Total Momentum Score: The Total Momentum Score is between zero and ten, with ten being equal to the maximum number of index constituents.

5. Total Constituent/Cash Weighting: If the Index's Constituent Total Momentum Score determines the total weighting of the index that is held in cryptoassets or cash. A Constituent Total Momentum Score of:
 - a. 0 indicates a 100% allocation to cash.
 - b. 1 indicates 28% of total assets are allocated to constituents and 72% remains in cash.
 - c. 10 indicates 100% of total assets are allocated to constituents and 0% remains in cash.
6. Individual Constituent Weight: Constituents with a Momentum Factor of 1 are equally weighted within the total cryptoasset weighting. For example, if 52% of the total level is weighted to cryptoassets, and four constituents have momentum, then each constituent receives a weight of 13.0%.

5 Appendix A: Coverage Universe

The following table lists the current coverage universe.

Index Name	Index Ticker
CMBI 10 14d Momentum	CMBI10M

6 Change Log

1. **Version 1.1 on October 2, 2023:** Annual Methodology Review.
2. **Version 1.0 on June 30, 2021:** Finalized CMBI Momentum Series Methodology.