CoinDesk 20 Index Methodology (CD20)

January 2024

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Introduction

Index Objective

The CoinDesk 20 Index measures the performance of the largest 20 digital assets by market capitalization from the CoinDesk Market Index (CMI). Constituents must meet certain trading and liquidity requirements and are weighted by market capitalization subject to capping requirements defined in *Constituent Weighting*.

Additional Details

Constituents of the CoinDesk 20 Index (the "Index") must be included in the CoinDesk Market Index, a broad-based index measuring the digital asset market. For more information on the CoinDesk Market Index, please refer to the CMI Methodology.

This methodology was created by CoinDesk Indices ("CDI") to achieve the Index Objective stated above. There may be circumstances or market events which require CDI, in its sole discretion, to deviate from these rules to ensure each Index continues to meet its Index Objective. This document should be read in conjunction with the CoinDesk Digital Asset Indices Policy Methodology (the "Policy Methodology").

Table 1: Index Details

Index Name	Index Ticker	Launch Date	Base Date	Base Value
CoinDesk 20 Index	CD20	Jan 12, 2024	Oct 4, 2022	1000.00

Eligibility criteria

Universe Eligibility

To be included in the Index Universe, a digital asset must meet the following criteria as of the Reconstitution Reference Date:

1. The digital asset must be a constituent of the CoinDesk Market Index (CMI). For more information on the CMI, please refer to the CMI Methodology.
2. A CoinDesk Reference Rate must exist for the digital asset and have three contributing Eligible Exchanges. For more details on CoinDesk's Reference Rates, please refer to the CoinDesk Reference Rate Methodology.
3. Any digital asset that meets the definition of a security as defined in the Policy Methodology will not be eligible.

Index Construction

Constituent Selection

The constituent selection process targets the 20 largest digital assets by market capitalization that are in the Index Universe and meet certain trading and liquidity requirements. The selection process relaxes certain requirements for current constituents to reduce excess turnover.

Constituents are selected from the Index Universe as follows:

Step 1: Rank all digital assets in the Index Universe by 90-day median daily value traded (MDVT) in descending order up to and including the Reconstitution Reference Date. Daily volume data is sourced from USD trading pairs and aggregated across CoinDesk's Eligible Exchanges. Refer to the Policy Methodology for more details on Eligible Exchanges.
Step 2: Select the 40 (50) highest ranked non-constituents (current constituents) from the results of Step 1.
Step 3: Rank the results of Step 2 by market capitalization in descending order. Market capitalization used to determine the ranking of each digital asset is sourced from the CoinDesk Market Index as of 4 p.m. Eastern Time on the Reconstitution Reference Date.
Step 4: Select the top 15 ranked digital assets as constituents from Step 3.
Step 5: From the remaining digital assets not selected in Step 4, select current constituents ranked by market capitalization within the top 25 until 20 digital assets are selected.
Step 6: If Step 5 results in fewer than 20 digital assets, select the highest ranked non-constituents from the remaining digital assets not selected in Step 5 until 20 digital assets are selected.

As a supplement to the general policy on discretion set forth in the Policy Methodology, CoinDesk Indices reserves the right to exclude a digital asset that meets the eligibility criteria but lacks an identifiable utility or use case. Any such exclusions will be noted in the results of an index reconstitution.

Constituent Weighting

Constituents are weighted by market capitalization subject to the following capping requirements imposed at each reconstitution:

Step 1: Determine the uncapped market capitalization weight of each constituent.

Step 2: If the weight of the largest constituent determined in Step 1 exceeds 30%, reduce its weight to 30% and redistribute the excess weight to the remaining constituents in proportion to their market capitalization.

Step 3: If any remaining constituent's weight exceeds 20%, reduce its weight to 20% and redistribute the excess weight to all uncapped constituents in proportion to their market capitalization.

Step 4: Repeat Step 3 until all remaining constituent's weights do not exceed 20%.

The initial constituent weights are determined on the Weighting Reference Date (see *Index Maintenance)* and use each constituent's latest circulating supply and CoinDesk Reference Rate. Index supplies are determined to achieve the initial constituent weights as follows:

- For uncapped assets, index supply = circulating supply as of the Weighting Reference Date
- For capped assets, the index supply will be reduced to achieve the initial constituent weight.

The index circulating supplies determined above will be used on the reconstitution effective date ("Effective Date") to calculate each constituent's final reconstitution weight using the CoinDesk Reference Rate as of the Effective Date. Note, final reconstitution weights will drift from the initial constituent weights due to constituent price movements between the Reconstitution Weighting Date and the Effective Date.

$$Weight_{i,ED} = \frac{Constituent\ Price_{i,ED} * Index\ Supply_{i,ED}}{\sum_{i=1}^{n} Constituent\ Price_{i,ED} * Index\ Supply_{i,ED}}$$

where:
$Weight_{i,ED,}$ = Weight of constituent i on the Effective Date
$Constituent\ Price_{i,ED}$ = Reference Rate for constituent i on the Effective Date
$Index\ Supply_{i,ED}$ = Index Supply for constituent i on the Effective Date
n = number of constituents

Index Calculation

The indices are calculated in real-time using reference rates for each underlying constituent as described below.

Constituent pricing

Real-time reference rates for constituent digital assets are calculated approximately every 5 seconds by CDI using a volume weighted average price (VWAP) across three contributing exchanges over the prior 60 minutes.

The number of contributing exchanges may drop below three between reconstitutions. In the event the number of contributing exchanges drops below three between reconstitutions, the Index Committee will review the eligible exchanges at the end of the month to determine the appropriate course of action.

For more information on constituent pricing, please refer to the CoinDesk Reference Rate Methodology.

Calculation Formula

$$Index_t = Index_{PR} * (1 + \sum_{i=1}^{N} W_{i,PR} * (\frac{Constituent\ Price_{i,t}}{Constituent\ Price_{i,PR}} - 1))$$

where:
$Index_t$ = Index Value at time t
$Index_{PR}$ = Index Value as of prior reconstitution effective date
$W_{i,PR}$ = Weight of constituent i as of prior reconstitution effective date (see constituent weighting section above)
N = number of constituents
Constituent Price$_{i,t}$ = Reference Rate for constituent i at time t
Constituent Price$_{i,PR}$ = Reference Rate for constituent i as of prior reconstitution effective date

Index Maintenance

Index Reconstitution

Each index is reviewed on a quarterly basis based on the rules described above. Any index changes resulting from the quarterly review are announced two weeks prior to the effective date and implemented on the second business day of January, April, July, and October. Please see Table 4 for the reconstitution timing.

Table 4: Reconstitution Timing

Activity Description	Timing	Example Reconstitution Timing
Reconstitution Reference Date	Announcement Date minus 2 business days	Mar 15, 2024
Announcement Date	Effective Date minus 14 calendar days (following business day if this is a holiday)	Mar 19, 2024

Weighting Reference Date	Effective Date minus 7 calendar days (following business day if this is a holiday)	Mar 26, 2024
Effective Date	4PM Eastern Time on the 2nd business day of the start of each quarter	Apr 2, 2024

In addition to the quarterly process, constituents are monitored for potential anomalies and trading disruptions. Out-of-review monitoring, which would require an index modification, only applies in extraordinary circumstances. Incident types that would require one or more index modifications are outlined in the Policy Methodology.

Additions

There will be no additions to the index between reconstitutions.

Deletions

If a constituent is removed from an index outside of the scheduled reconstitution process it will not be replaced. It is possible that the constituent count may drop to fewer than 20 constituents due to a deletion between reconstitutions.

Data Distribution

Real-time index values are calculated 24x7 and are available publicly at https://coindesk.com/indices/ and are also available to subscribers via REST, WebSocket APIs, and scheduled email updates.

Index Governance

The CoinDesk Index Committee provides ongoing oversight of the Index and its Methodology. For more details on the Index Committee, please refer to the Index Governance section of the CoinDesk Digital Asset Indices Policy Methodology.

Appendix 1: Data sources

This section describes data sources used to maintain, reconstitute, and calculate the Indices. If data is not available for any reason from the sources described in this appendix, other data sources may be used.

Price data

Prices used to calculate VWAPs are sourced from Eligible Exchanges.

Reconstitution Data

Market capitalization and circulating supply data are provided by CoinMarketCap.com. Daily notional volume is sourced from Eligible Exchanges. Circulating supply data is subject to review by CDI and may be modified for appropriateness.

Appendix 2: Methodology Changes

The table below is a summary of modifications to this Methodology.

Effective Date	Prior Treatment	Updated Treatment	Material Change

Appendix 3: Document Revision History

Timing	Description
Jan 11, 2024	Initial Version

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