



CoinDesk Bitcoin Futures Index Methodology (BFIC)

March 2024

Table of Contents

CoinDesk Bitcoin Futures Index Methodology (BFIC).....	1
Introduction.....	3
Index Objective.....	3
Additional Details.....	3
Index Construction.....	3
Roll Schedule	3
Index Calculation	4
Calculation Frequency	5
Designated Contracts.....	6
Contract Convention	6
Holidays.....	6
Data Distribution	6
Index Governance.....	6
Appendix 1: Data sources.....	7
Appendix 2: Methodology Changes	8
Appendix 3: Document Revision History	9
Disclaimer.....	10

Introduction

Index Objective

The CoinDesk Bitcoin Futures Excess Return Index measures the performance of Bitcoin futures contracts. The index gives a single measure of the performance of futures contracts accounting for price movements of the underlying futures contracts as well as the “roll yield” as the index transitions from one futures contract to another. This is intended to establish a standardized measure of the performance of Bitcoin futures to ensure consistency and transparency in pricing.

Additional Details

The CoinDesk Bitcoin Futures Excess Return Index (the “Index”) is constructed from Chicago Mercantile Exchange (CME) futures contracts on the Bitcoin spot price.

Table 1: Index Details

Index Name	Index Ticker	Launch Date	Base Date	Base Value
CoinDesk Bitcoin Futures Excess Return Index	BFIC	Feb 7, 2024	Dec 27, 2017	14690.00

Index Construction

The index is calculated using the front-month contract and will roll from the lead contract to the next contract prior to the lead contract expiration date.

Roll Schedule

The roll starts on the Friday prior to the last trade date of each monthly CME contract and ends on the Wednesday prior to the last trade date. Last trade dates occur on the final Friday, or Thursday if Friday is a holiday, of each month, so the roll process will end on the Wednesday of that week. If any holidays occur during the roll period, the roll is shortened to reflect the number of trading days within the roll period.

Table 2: Sample Roll Schedule

Calculation Period	Last Trade Date	1 st Day of Roll Period	Last Day of Roll Period	Roll Period Length (Days)
September 2023	Sep 29, 2023	Sep 22, 2023	Sep 27, 2023	4
October 2023	Oct 27, 2023	Oct 20, 2023	Oct 25, 2023	4
November 2023	Nov 24, 2023	Nov 17, 2023	Nov 22, 2023	4

December 2023*	Dec 29, 2023	Dec 22, 2023	Dec 27, 2023	3
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*The December 2023 roll period is reduced to three days to account for the Christmas holiday.

Index Calculation

The transition process from one futures contract to another occurs over a period of up to four trading days leading up to two calendar days prior to the last trading date of the lead contract. Index levels during this roll period are determined by the weighted allocations of the lead and next contracts on each day. The calculation is as follows.

On the base date:

$$\begin{aligned} IndexValue_0 &= P_{0,Lead} \\ U_{0,Lead} &= 1 \\ U_{0,Next} &= 0 \end{aligned}$$

At any other time t :

$$IndexValue_t = U_{t-1,Lead} \times P_{t,Lead} + U_{t-1,Next} \times P_{t,Next}$$

Where:

$IndexValue_t$ is the CoinDesk Bitcoin Futures Index at time t

$U_{t,Lead}$ is the number of units of the lead futures contract at time t

$U_{t,Next}$ is the number of units of the next futures contract at time t

$P_{t,Lead}$ is the price of the lead futures contract at time t

$P_{t,Next}$ is the price of the next futures contract at time t

During roll periods, $U_{t,Lead}$ and $U_{t,Next}$ are determined by:

$$\begin{aligned} U_{t,Lead} &= U_{t-1,Lead} - Step_p \\ U_{t,Next} &= \frac{IndexValue_t - U_{t,Lead} \times P_{t,Lead}}{P_{t,Next}} \end{aligned}$$

Where $Step_p$ is the roll interval for the specific roll period p . $Step_p$ is determined by the number of units of the lead contract on the day prior to the start of the roll period ($start$) and the number of trading days in that roll period ($Days_p$):

$$Step_p = \frac{U_{start,Lead}}{Days_p}$$

Prior to the roll period:

$$U_{t,Lead} = U_{t-1,Lead}$$

$$U_{t,Next} = 0$$

Following the roll period:

$$U_{t,Lead} = 0$$

$$U_{t,Next} = U_{t-1,Next}$$

On the final day of the roll period, in order to avoid a small amount of units of the lead contract remaining in the index, $Step_p$ is adjusted to the remaining units of the lead contract. To simplify the calculation, Index values are rounded to six (6) decimal points, and contract units are rounded to eight (8) decimal points.

During a typical roll process with no holidays, the proportion of the lead contract allocation that is rolled into the next contract is as follows:

Day in Roll Period	Ratio of Lead Contract to Roll Each Day
Day Before Roll Begins	0
1st Day	1/4
2nd Day	1/4
3rd Day	1/4
4th Day	1/4

If one holiday occurs during the roll period, the roll occurs over three trading days. In this special case, the number of units of the lead and next contract follow this schedule:

Day in Roll Period	Ratio of Lead Contract to Roll Each Day
Day Before Roll Begins	0
1st Day	1/3
2nd Day	1/3
3rd Day	1/3

Calculation Frequency

The index is calculated once per day at approximately 5pm Eastern time using the 4pm Eastern time settlement price from CME and will be updated at approximately 7pm Eastern time when final settlement prices are confirmed by CME.

Designated Contracts

Each month, the lead contract used for calculation of the Index is defined in the table below. The next contract is defined as the lead contract for the next month.

Roll Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Lead Contract	F	G	H	J	K	M	N	Q	U	V	X	Z

Contract Convention

The CME naming conventions for Bitcoin Futures Contracts are formatted as “BTC” followed by the month code of the contract expiry and the on-digit year. For example, the January 2024 futures contract will be identified as “BTCF4”.

Holidays

The Index follows the [CME holiday calendar](#). When futures expiry occurs outside of the standard schedule according to CME procedures, the roll process is moved accordingly so that the final date of the roll process occurs two trading days prior to the expiry date, and the roll process begins four trading days prior to that.

Data Distribution

Index values are calculated daily and are available to subscribers via REST 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.

Bitcoin Futures Price data

Bitcoin futures price data is sourced from the Chicago Mercantile Exchange (CME).

Appendix 2: Methodology Changes

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

Effective Date	Prior Treatment	Updated Treatment	Material Change
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Appendix 3: Document Revision History

Timing	Description
March 28, 2024	Minor clarifications including updated language to clarify treatment of holidays during/after roll period.
Feb 5, 2024	Initial Version

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