

# coinbase DERIVATIVES

LMX Labs, LLC d/b/a Coinbase Derivatives

May 23, 2023

## VIA CFTC Electronic Portal

Mr. Christopher J. Kirkpatrick  
Secretary of the Commission  
Office of the Secretariat  
Commodity Futures Trading Commission  
Three Lafayette Centre  
1155 21st Street, NW  
Washington, DC 20581

**Re: CFTC Regulation 40.2(a) Certification: Listing of Bitcoin Futures Contract  
Coinbase Derivatives Submission #2023-2E**

Dear Mr. Kirkpatrick:

Pursuant to Commodity Futures Trading Commission (“CFTC” or “Commission”) Regulation 40.2(a), LMX Labs, LLC, d/b/a Coinbase Derivatives (the “Exchange” or “CDE”) hereby submits for self-certification its initial listing of the Bitcoin Futures contract to be offered for trading on the Exchange on trade date June 5, 2023.

## Contract Description

The Bitcoin Futures contract (the “Contract”) will be a monthly cash-settled and margined contract with the following specifications:

<b>Product</b>	Bitcoin Futures
<b>Product Type</b>	USD-settled index future
<b>Contract Size</b>	1 Bitcoin
<b>Displayed Price Example</b>	\$30,005
<b>Contract Notional</b>	~\$30,000 contract notional (i.e. 1 x estimated BTC price of \$30,000)  Contract will always represent 1 Bitcoin, using an estimated Bitcoin price of \$30,000 for illustrative purposes.
<b>Contract Code</b>	BTI
<b>Minimum Tick Size and Value</b>	<b>Min tick size:</b> \$5 per bitcoin <b>Min tick value:</b> \$5 per contract

<b>Listed Contracts</b>	4 nearest monthly contracts, and the next December contract. A second December contract will be listed if one is already listed in the nearest 4 monthly contracts.
<b>Daily Settlement</b>	Daily Settlement: 3:00 pm CT 1. 1-min VWAP of futures contract rounded to the nearest tradable tick 2. 1-min TWAP of futures contract midpoint of the Bid/Ask rounded to the nearest tradable tick 3. If a two-sided market is not available during the sixty (60) seconds prior to 3:00 PM CT, then the Settlement Price will be the Market Vector Coinbase CBBR index value - (difference between previous day's CBBR value and previous day's futures settlement)
<b>Final Settlement</b>	Final settlement price of the expiring contract will be the value of the Market Vector Coinbase Bitcoin benchmark reference rate (CBBR) at 4:00 p.m. London time, calculated and disseminated by Market Vector. Contracts will be cleared by Nodal Clear
<b>Daily Price Limits</b>	30% Daily Price Limits based on previous day settlement
<b>Price Fluctuation Limits</b>	10% of Hourly Calculated Reference Price
<b>Last Trading Day</b>	Trading terminates at 4:00 pm London time on the last Friday of the contract month. If that day is not a business day in the U.S., trading terminates on the preceding day that is a U.S. business day.
<b>Position Limits</b>	20,000 BTI aggregate
<b>Large Trader Reporting</b>	5 contracts
<b>Trading Hours</b>	5pm to 4pm CT Sun-Fri, with trading halt from 4pm to 5pm CT Mon-Thurs.

## Contents:

- I. Bitcoin Market Overview
- II. Contract Description
- III. Volatility
- IV. Analysis of Deliverable Supply
- V. Compliance with Core Principles

### I. Bitcoin Market Overview

Bitcoin was created in 2008 by the pseudonymous individual(s) operating under the name of Satoshi Nakamoto. The technology behind the cryptocurrency was detailed in a white paper, which described an open ledger called the blockchain that occupies a network accessible to all. Bitcoin was launched in 2009 implementing this technology and is used as a mode of financial exchange wherein one can process financial transactions without the intervention of a central bank. Bitcoin has since become the most widely traded cryptocurrency in the markets.

Bitcoin is created by miners who perform complex mathematical calculations to create a new block in the chain. The Bitcoin blockchain has a limit of 21 million Bitcoin that can be mined. As of March 2023, 19 million Bitcoin have already been mined. When Bitcoin was first created, each block represented 50 Bitcoin. As more blocks in the chain are created, the number of Bitcoin per block is reduced. Currently, each block mined represents 6.25 Bitcoin. This number is expected to reduce further with the ultimate expectation that the 21 million limit will be reached around sometime in 2140<sup>1</sup>.

### II. Contract Description

The Bitcoin Futures contract is a cash-settled contract based on the MarketVector Coinbase Bitcoin Benchmark Rate Index (“Index”). This Index tracks the price of Bitcoin as traded on the Coinbase spot exchange. MarketVector is an Index Provider based in Frankfurt, Germany and is regulated by the Federal Financial Supervisory Authority (“BaFin”).


Each contract represents 1 Bitcoin. At the current price of approximately \$30,000, the notional value of each Coinbase Derivatives contract would be approximately \$30,000. The Exchange will initially offer the four nearest contract months and the next December contract for trading.

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<sup>1</sup> <https://www.coindesk.com/learn/what-happens-when-all-bitcoin-are-mined/>

## Bitcoin Price as of May 2, 2023

Cryptocurrencies > Coins > Bitcoin

 **Bitcoin** BTC ☆ ↑

Rank #1 Coin On 3,970,923 watchlists

[bitcoin.org](#) 🔍 Explorers 👤 Community

</> Source code 📄 Whitepaper

Tags: Mineable PoW SHA-256 Store Of Value [View all](#)

Bitcoin Price (BTC)

**\$28,073.75** ▼ 1.67%

15.31 ETH ▼ 0.97%

Low: \$27,680.79 High: \$28,626.28 24h

Market Cap **\$543,567,392,117** ▼ 1.66%

Fully Diluted Market Cap **\$589,548,679,934** ▼ 1.67%

24h Volume / Market Cap 0.0291

Source: <https://coinmarketcap.com/currencies/bitcoin/>

### III. Volatility

In the past six months, the Bitcoin Volatility Index has hovered around 2-3%, with the latest 30-day estimate at 1.85% as of May 2, 2023<sup>2</sup>. By way of comparison, the Crude Oil Volatility Index on May 2, 2023 stood at approximately 35.94<sup>3</sup>%, and the current CBOE Market Volatility Index was approximately 16.57%<sup>4</sup>.

## The Bitcoin Volatility Index

The Bitcoin volatility index measures how much Bitcoin's price fluctuates on a specific day, relative to its price. See the historical and average volatility of Bitcoin below.

LATEST 30-DAY ESTIMATE

**3.08%**

LATEST 60-DAY ESTIMATE

**3.64%**

### Bitcoin Volatility Time Series Charts



<sup>2</sup> <https://www.buybitcoinworldwide.com/volatility-index/>

<sup>3</sup> <https://www.cnbc.com/quotes/.OVX>

<sup>4</sup> <https://www.marketwatch.com/investing/index/vix>

#### IV. Analysis of Deliverable Supply

As stated above, Bitcoin was created with a limited supply of 21 million Bitcoin, with 19 million currently mined. The current number of Bitcoin mined would not equal the number in circulation, as there are Bitcoins that are permanently unavailable, or “burned” due to lost wallet keys and other factors. It is estimated that up to 20% of Bitcoin are burned. Therefore, the deliverable supply of Bitcoin would be closer to 15 million Bitcoin. Given that each Coinbase Derivatives Bitcoin cash-settled contract represents 1 Bitcoin, a single contract is <0.01% of the deliverable supply. A common practice is to set the position limit so that a market participant holds no more than 25% of the deliverable supply of a commodity. Given that 25% of the deliverable supply of Bitcoin is 4.725 million Bitcoin, a position limit of 20,000 Bitcoin would be reasonable. This position limit is also consistent with Bitcoin products listed by other exchanges.

#### V. Compliance with Core Principles

The Exchange has reviewed the designated contract market (“DCM”) core principles (“Core Principles”) set forth in the Commodity Exchange Act and has identified that the Contract may most directly implicate the following Core Principles:

##### *Core Principle 2 -- Compliance with Rules*

Trading in the Contract is subject to the Exchange Rulebook (the “Rulebook”) including Chapter 5, which prohibits fraud, non-competitive trading, market manipulation and abusive and disruptive trade practices. Additionally, as with all contracts traded on the Exchange, trading will be subject to monitoring and surveillance by the Market Regulation Department, which has the authority to investigate and enforce Exchange rules, as described in Chapter 7.

##### *Core Principle 3 -- Contracts Not Readily Subject to Manipulation*

The Contract is based on the MarketVector Coinbase Bitcoin Benchmark Rate, which was first published on May 16, 2022. MarketVector Index Solutions GmbH (“MVIS”) is governed by the European Benchmark Regulation (the “EUBMR”) and supports the International Organisation of Securities Commissions (“IOSCO”) “Principles for Financial Benchmarks” (the “IOSCO Principles”). The Exchange has a data sharing agreement with the Coinbase spot market as well as a licensing agreement for the use of MVIS for the Exchange Contract. MVIS manages the governance and oversight of the Index, as described in Appendix A below. Given this oversight, the Index is not readily subject to manipulation.

##### *Core Principle 4 -- Prevention of Market Disruption*

Chapter 5 of the Rulebook prohibits Participants from manipulating, distorting the price of, and disrupting the settlement process of the Contract. As with all contracts traded on the Exchange, trading in the Contract will be subject to monitoring and surveillance by the Market Regulation Department. Further, trading in the Contract shall be subject to price limits consistent with the U.S. equity market-wide circuit breakers. In addition, the Index Provider uses a methodology which makes potential manipulation of the underlying spot market unlikely to have an effect on the Index price.

*Core Principle 5 -- Position Limits or Accountability*

The Contract shall be subject to a position limit of no more than 20,000 Bitcoin per month, with a reportable level of 5 contracts.

*Core Principle 7 -- Availability of General Information*

The Exchange shall publish on its website and in its Rulebook the specifications, terms and conditions of the Contract.

*Core Principle 8 -- Daily Publication of Trading Information*

The Exchange shall publish on its website on a daily basis the trading volumes, open interest, and price information for the Contract.

*Core Principle 9 -- Execution of Transactions*

The Contract shall be listed for trading on the Exchange's trading system, which provides for efficient, competitive, and open execution of transactions.

*Core Principle 10 -- Trade Information*

All requisite trade information shall be included in the audit trail and is sufficient for the Market Regulation Department to monitor for market abuse.

*Core Principle 11 -- Financial Integrity of Transactions*

The Contract shall be cleared by Nodal Clear, LLC, a CFTC registered derivatives clearing organization subject to the CFTC regulations related thereto.

*Core Principle 12 -- Protection of Markets and Market Participants*

Chapters 4 and 5 of the Rulebook require all market participants, including futures commission merchants ("FCMs") carrying customer accounts, to observe high standards of integrity, market conduct, commercial honor, fair dealing, and just and equitable principles of trade and prohibits, among other things, fraud, non-competitive trading, market manipulation, and abusive and disruptive trade practices. As with all contracts traded on the Exchange, trading will be subject to monitoring and surveillance by the Market Regulation Department.

*Core Principle 13 -- Disciplinary Procedures*

Rulebook Chapter 7 sets forth the rules and procedures for the investigation, enforcement, and sanctioning of persons that violate the Exchange's Rules.

*Core Principle 14 - Dispute Resolution*

Disputes related to the Contract are governed by Chapter 8 of the Exchange Rulebook, which provides for arbitration procedures overseen by the National Futures Association.

Certification

The Exchange has spoken with FCMs and market participants who support the decision to launch the Contract. The Exchange is not aware of any substantive opposing views to the Contract. The Exchange certifies that the Contract and related rules certified herein comply with the Commodity Exchange Act and the rules and regulations promulgated thereunder.

The Exchange certifies that this submission has been concurrently posted on the Exchange's website at: <https://www.coinbase.com/derivatives>.

If you have any questions or require any further information, please contact me at [jane.downey@coinbase.com](mailto:jane.downey@coinbase.com).

Sincerely,

/s/

Jane Downey  
Chief Regulatory Officer

Attachments:

Appendix A MarketVector Coinbase Bitcoin Benchmark Rate Index Methodology  
Appendix B Amendments to CDE Rulebook Chapter 11  
Appendix C Position Limit, Position Accountability, and Reportable Level Table (CDE Rulebook Chapter 5)



## APPENDIX A

### Market Vector Coinbase Bitcoin Benchmark Rate Index Methodology

#### Description

The Market Vector Coinbase Bitcoin Benchmark Rate Index (“Index”)<sup>5</sup> is produced by MV Index Systems of Frankfurt, Germany, an affiliate of Van Eck Associates Corporation (“MVIS”). The Index is calculated and disseminated in USD and tracks the price of Bitcoin Traded at Coinbase.

The Market Vector Coinbase Bitcoin Benchmark Rate uses the largest, most liquid Bitcoin exchange in the United States. Coinbase is the dominant cryptocurrency spot market in the United States, with nearly 70% of all Bitcoin trading in the U.S. traded on the exchange. To illustrate the Coinbase market share over competing cryptocurrency markets, the price of Bitcoin across the top five cryptocurrency markets as represented by the CF indexes contract used by the CME, varies, on average by \$4.4 on a daily settlement basis in 2023, or the equivalent of approximately 1bp or 0.01% of the notional value of the underlying asset.<sup>6</sup>

#### Advisory Board

The MVIS Advisory Board is governed by the Rules of Procedure for the Advisory Board. The Advisory Board is responsible to supervise and advise the Managing Directors of MVIS. The approval of the Advisory Board is required for certain important decisions.

#### Independent Oversight Function

MVIS has implemented an Independent Oversight Function (“IOF”) that consists of employees of the Legal and Compliance department of VanEck (Europe) GmbH. Some of the key task and responsibilities of the IOF are:

- Periodic review of the Index Guide and methodology;
- Review and approval of the procedures for Index cessation;
- Oversee third parties involved in the provision of the indices, including calculation or dissemination agents;
- Assess internal and external audits or reviews, and monitor the implementation of identified remedial actions; and
- Monitor input data and contributors and MVIS’ related actions in challenging or validating contributions of input data.

#### Managing Directors

MVIS has two Managing Directors (“MD”), the Operations and the Shared Services MDs. The roles and responsibilities of the two different MDs are documented and serve to ensure mitigation of conflicts of interest and enhance governance standards. The MDs are responsible for the ongoing review and monitoring of compliance with MVIS’ policies and procedures by all involved parties and the notification of possible breaches or incidents to the IOF.

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<sup>5</sup> <https://marketvector.com/indices/digital-assets/marketvector-coinbase-bitcoin-benchmark-rate>

<sup>6</sup> Based on settlement data from Jan 1, 2023 through April 23, 2023.

## Market Vector Coinbase Bitcoin Benchmark Rate Index is not Subject to Manipulation

The Index is calculated daily between 00:00 and 24:00 London time, and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 London time with a fixed 16:00:00 London time exchange rate.

$$Index\ Value = \frac{1}{n} \sum_{i=1}^n M(i).$$

where the quantity weighted median price for each interval  $i$  is

$$M(i) = \begin{cases} p_{i,k} & \text{if } k \text{ satisfies } \sum_{j=1}^{k-1} q_{i,j} < \frac{1}{2} \sum_{j=1}^{J_i} q_{i,j} \text{ and } \sum_{j=k+1}^{J_i} q_{i,j} \leq \frac{1}{2} \sum_{j=1}^{J_i} q_{i,j}, \\ p_{i,1} & \text{if } q_{i,1} \geq \frac{1}{2} \sum_{j=1}^{J_i} q_{i,j}, \\ \frac{p_{i,k} + p_{i,k+1}}{2} & \text{if } \sum_{j=k+1}^{J_i} q_{i,j} = \frac{1}{2} \sum_{j=1}^{J_i} q_{i,j}, \end{cases}$$

with the number of intervals calculated as the total index time window divided by the interval window:

$$n = \frac{T}{b},$$

and

- $p_{i,j}$  =  $j$ th price in  $i$ th interval,
- $q_{i,j}$  =  $j$ th quantity/volume traded in  $i$ th interval,
- $J_i$  = number of trades in  $i$ th interval,
- $b$  = interval window for the calculation of the median prices,
- $n$  = number of intervals,
- $T$  = total index time window for the calculation of an index price.

The set of trades for the total index calculation consists of transactions occurring within the total index time window as follows:

$$\theta_t = \{a_{i,j}(s_{i,j}, p_{i,j}, q_{i,j}) | t - T \leq s < t\},$$

with

- $\theta_t$  = set of trades for the calculation of the index price at time  $t$ ,
- $a_{i,j}$  = trade  $j$  in trade set  $A_i$ ,
- $s_{i,j}$  = time of trade  $a_{i,j}$ .

Each interval consists of a subset of trades of  $\theta_t$ :

$$A_i \subset \theta_t$$

$A_i$  being the set of trades for the calculation of the median price in interval  $i$ , where each trade  $a_{i,j}$  within  $A_i$  is sorted by price  $p_{i,j}$  in ascending order and it holds that trades occur within the interval window as follows:

$$A_i = \{a_{i,j}(s_{i,j}, p_{i,j}, q_{i,j}) | (t - T) + (i - 1)b \leq s < (t - T) + ib\}.$$

Due to the sheer number of times the price is recalculated, and the size of Coinbase's market, any attempt to manipulate the price of the Index would be extremely difficult. In addition to the calculation safeguards, MVIS has procedures in place to prevent manipulation, MVIS has a number of policies and procedures in place to ensure a fair marketplace. MVIS has instituted measures to investigate and correct a potentially erroneous price due to bad data, late or

delayed transactions and non-reporting exchanges. Incorrect or missing data is corrected immediately.

Disruptions with calculation agents are handled by Compliance and Senior Management at MVIS. MVIS will communicate any error to all affected clients. In addition, if MVIS identifies any conduct that may involve manipulation of an index by calculation/dissemination agent, it will report this to its regulator, BaFin.

The Exchange has in place an agreement with Coinbase to share information and trade data occurring on Coinbase in connection with regulatory inquiries. This agreement gives Coinbase Derivatives the opportunity to investigate activity in the spot market which may have an impact on the listed futures contract.

#### How Settlement is Calculated

During the 1-hour settlement window, MVIS breaks the hour into 20 3-minute intervals. In each of these intervals, MVIS aggregates all trades and volume from the constituent exchange and calculates a volume weighted median price for the interval. The settlement is based on a simple average of the 20 volume weighted median prices calculated.

## APPENDIX B

Additions underscored; deletion are ~~struckthrough~~

### CHAPTER 11: CONTRACTS

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#### **RULE 1108. Bitcoin Futures**

- (a) Scope. Rule 1108 is limited in application to the trading of the Bitcoin futures (“BTI Contract”). In addition to Rule 1108, the BTI Contract is subject to all Rules of the Exchange as applicable. Unless otherwise stated, all times referred to herein are Central Time Zone.
- (b) Trading Schedule. The BTI Contract shall be offered for monthly trading in the front four months and following December contract month during such hours as the Exchange shall determine from time-to-time.
- (c) Trading Unit. The trading unit is equal to 1 Bitcoin.
- (d) Price Increments. The minimum price increment shall be 5 index points (\$5 per Contract).
- (e) Position Limits, Position Accountability, and Reportable Levels. Pursuant to Rules 530 to 533 and subject to the requirements and exceptions therein, the BTI Contract is subject to the following:
  - (1) Position Limit. 20,000 BTI aggregate.
  - (2) Reportable Level. 5 BTI Contracts
- (f) Price Fluctuation Limits. Trading in the BTI Contract shall be subject to the following price fluctuation limits of
  - (1) 10% of the Hourly Calculated Reference Price at the top of each hour.
  - (2) Reference Price is calculated by using the settlement calculation from the last 60 seconds of each hour. A 10% up and down Price Limit will be applied to the Reference Price.
  - (3) The market will enter a Halt state for 2 minutes if a Price Limit is reached. Orders can be submitted, canceled and amended during this state but no matching will occur.
  - (4) The new Reference Price will be the last Price Limit reached.
  - (5) If Price Limits are hit on the Lead Month Contract, all related instruments will be Halted.
  - (6) If Price Limits are hit on non-Lead Month Contracts, only the specific instrument which reached the Price Limit will be Halted.

- (g) Daily Price Limits. Trading in the BTI Contract shall be subject to the following Daily Price Limits of
- (1) 30% Daily Price Limits will be applied from the previous day's settlement price and applied to the next trading session.
  - (2) If Daily Price Limits are reached the market will remain open but will not trade beyond the Daily Price Limit.
- (h) Trading terminates at 4:00 pm London time on the last Friday of the contract month. If that day is not a U.S. business day, trading terminates on the preceding day that is a U.S. business day.
- (i) Settlement. The BTI Contract is cash settled
- (1) Daily Settlement Price at 3:00 PM CT shall be determined as follows:
    - (i) 1-min VWAP of futures contract rounded to the nearest tradable tick
    - (ii) 1-min TWAP of futures contract midpoint of the Bid/Ask rounded to the nearest tradable tick
    - (iii) If a two-sided market is not available during the sixty (60) seconds prior to 3:00 PM CT, then the Settlement Price will be Market Vector CBBR index value - (difference between previous day's CBBR index value and previous day's futures settlement)
  - (2) Final Settlement Price shall be the value of the underlying index at 4 p.m. London Time on the day of expiration, calculated and disseminated by MVIS as the Index Provider and calculation agent.
  - (3) Final Settlement. Clearing Firms holding open positions in an expiring BTI Contract at the termination of trading shall make or receive payment in accordance with the rules of the Clearing House.
- (j) Disclaimer.

The MarketVector Index Solutions Coinbase Bitcoin Benchmark rate is a trademark of MarketVector Index Solutions and its affiliates (collectively "MVIS"). MVIS or MVIS's licensors own all proprietary rights in the Indices. MVIS is NOT affiliated with LMX Labs, and neither approves, endorses, reviews or recommends the Bitcoin Futures. MVIS does not guarantee the timeliness, accurateness or completeness of any data or information relating to the Coinbase Bitcoin Benchmark Rate Index, and neither shall be liable in any way to LMX Labs, investors in the Bitcoin (BTI) futures or other third parties in respect of the use or accuracy of the Coinbase Bitcoin Benchmark Rate Index or any data included therein.

## APPENDIX C

Additions underscored; deletion are ~~struckthrough~~

### CHAPTER 5: TRADING PRACTICES AND BUSINESS CONDUCT

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#### RULE 533. Position Limit, Position Accountability, Reportable Level, and Volume Threshold Level Table

Product	CDE Code	Contract Size	Aggregate Into Futures	<u>Aggregate Ratio</u>	CFTC Reporting Limit	Exchange Reporting Limit	Position Limit
Nano Bitcoin Futures	BIT	0.01	BTI	<u>100 BIT = 1 BTI</u>	25	25	20,000 ( <u>BTI Aggregate</u> )
<del>Bitcoin Futures</del>	<del>BTI</del>	<del>1</del>	<del>BTI</del>		<del>25</del>	<del>25</del>	
Nano Ether Futures	ET	0.1	ETI	<u>100 ET = 1 ETI</u>	25	25	40,000 ( <u>ETI Aggregate</u> )
<del>Ether Futures</del>	<del>ETI</del>	<del>10</del>	<del>ETI</del>		<del>25</del>	<del>25</del>	
Nano Bloomberg US Large Cap Index Futures	B5	100	B5		200	200	60,000
Micro Bloomberg US Large Cap Index Futures	LB5	10	LB5		200	200	25,000
Nano SuperTech Index Futures	TEC	100	TEC		200	200	60,000
Micro SuperTech Index Futures	LTEC	10	LTEC		200	200	25,000
Micro Crude Oil Futures	OIL	100	OIL		350	350	5,000