

cfbenchmarks

CME CF Cryptocurrency Pricing Products

Practice Standards

Version 4

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Version History

Version	Version Date	Changes to Previous
1	31 st Jan 2018	N/A
1.1	7 th June 2018	<p>In scope reference rates and real time indices expanded</p> <p>Generalised wording to support expanded number of reference rates and real time indices</p> <p>Appendix of in scope reference rates and indices added</p> <p>Contact details of CF Benchmarks updated</p>
2	11 th July 2019	Rebrand to CF Benchmarks
3	11 th September 2019	Update legal text with BMR registration
4	20 th May 2020	Update copyright year, correct complaints email address

Introduction and Overview

These Practice Standards set out the responsibilities of each of:

- CF Benchmarks Ltd. as the administrator (the “**Administrator**”) and the calculation agent (the “**Calculation Agent**”) of the **CME CF Crypto Currency Reference Rates** (see Appendix A for full list of available reference rates) and the **CME CF Cryptocurrency Real Time Indices** (see Appendix A for full list of available real time indices) whereas the reference rates and real time indices are collectively referred to as the “**Cryptocurrency Pricing Products**”;
- Chicago Mercantile Exchange Inc. as the data licensor and distributor of the Cryptocurrency Pricing Products (the “**Data Licensor/Distributor**”);
- The CME CF Crypto Currency Pricing Products Oversight Committee (the “**Oversight Committee**”) as the committee charged with providing the oversight function over the methodology and calculation process and the integrity of the Cryptocurrency Pricing Products and the Administrator;
- Cryptocurrency exchanges that have been approved by the Oversight Committee to contribute data to the Calculation Agent (each a “**Constituent Exchange**”); and
- The “**Cryptocurrency Pricing Products Team**” defined as the employees of the Administrator responsible for the day-to-day operations of the Cryptocurrency Pricing Products.

Overview of CME CF Cryptocurrency Reference Rates

The CME CF Cryptocurrency Reference Rates are a daily reference rate of the U.S. Dollar price of one unit of cryptocurrency as of 4:00 p.m. London time (see Appendix A for available reference rates). It is based on trade execution data observed at various Constituent Exchanges and provided by the Constituent Exchanges to the Calculation Agent in accordance with the policies and procedures of, and in the format prescribed by, the Calculation Agent from time to time. Calculation details are more particularly described in the **CME CF Reference Rate Methodology Guide**.

Overview of the CME CF Cryptocurrency Real Time Indices

The CME CF Cryptocurrency Real Time Indices are a real time index of the U.S. Dollar price of one unit of cryptocurrency (see Appendix A for available real time indices). It is representative of current bids and offers of market participants to buy or sell cryptocurrency on Constituent Exchanges and provided by the Constituent Exchanges to the Calculation Agent in accordance with the policies and procedures of, and in the format prescribed by, the Calculation Agent from time to time. It is geared towards timeliness and represents an unbiased estimator of the instantaneous price for cryptocurrency. Calculation details are more particularly described in the **CME CF Real Time Index Methodology Guide**.

Administrator

The Administrator will have primary responsibility for all of the following in respect of Cryptocurrency Pricing Products:

- a. All aspects of the administration of the Cryptocurrency Pricing Products, including taking appropriate emergency actions in unusual and extreme circumstances as discussed below to protect the integrity of the methodology and calculation process, subject to the oversight of the Oversight Committee.
- b. Implementing a conflicts of interest policy and associated procedures for the disclosure and assessment of potential conflicts of interest, subject to the approval of the Oversight Committee.
- c. Establishing the control, governance and oversight framework, in coordination with its responsibilities as the Calculation Agent, as set forth in these Practice Standards, subject to approval by the Oversight Committee.
- d. Establishing these Practice Standards and reviewing them at least on an annual basis and proposing substantive amendments, as appropriate, to the Oversight Committee for approval.
- e. Establishing appropriate monitoring processes and procedures designed to identify any breaches of these Practice Standards and any attempted manipulation or manipulative behaviour and reporting any such incidents to the Oversight Committee in a timely manner.
- f. Establishing appropriate processes and procedures designed to maintain the integrity and continuity of the Cryptocurrency Pricing Products as overseen by the Oversight Committee.
- g. Establishing appropriate processes and procedures designed to ensure the confidentiality of potentially sensitive information.

Calculation Agent

The Calculation Agent will be responsible for:

- a. Designing the Cryptocurrency Pricing Products.
- b. Documenting the methodology for each of the Cryptocurrency Pricing Products, subject to approval by the Oversight Committee.
- c. Collecting, retaining and securing the underlying data and data feeds used in connection with the Cryptocurrency Pricing Products calculation process.
- d. Establishing appropriate processes and procedures designed to maintain the integrity and continuity of the calculation process.

Data Licensor/Distributor

The Data Licensor/Distributor will be responsible for:

- Developing a commercial model for licensing the values of the Cryptocurrency Pricing Products in consultation with the Administrator.
- Distributing the values of the Cryptocurrency Pricing Products through the CME Market Data Platform and CME Datamine
- Administering the licensing of the Cryptocurrency Pricing Products and collecting the associated fees on behalf of the Administrator and itself.
- Maintaining the Cryptocurrency Pricing Products' values for distribution of historical data.
- Providing service for Cryptocurrency Pricing Products licensing customers.

CME CF Cryptocurrency Pricing Products Oversight Committee

The Oversight Committee is responsible for reviewing and providing challenge on all aspects of the methodology and calculation process and providing effective oversight of the Administrator as it relates to the Cryptocurrency Pricing Products. It is also responsible for assessing potential conflicts relating to the functioning and operation of the Cryptocurrency Pricing Products or any associated governance framework, policy or control process in accordance with the Cryptocurrency Pricing Products Conflicts of Interest Policy.

Constituent Exchanges

The Constituent Exchanges will make both trade data and order book data available to the Calculation Agent in accordance with the policies and procedures of, and in the format prescribed by, the Calculation Agent from time to time. The Constituent Exchanges shall each have controls and processes in place to protect against, amongst other things, market abuse (including, without limitation, attempted manipulation of the cryptocurrency pricing products).

The Constituent Exchanges are also responsible for making the relevant data available to the Calculation Agent at the relevant times and for ensuring that the data accurately represents the prices that were available / traded on their trading venues at the relevant times.

Cryptocurrency Pricing Products Team

The Cryptocurrency Pricing Products Team is responsible for the orderly production of the Cryptocurrency Pricing Products. It will monitor, administrate and keep up-to-date the software and hardware infrastructure that sources data from Constituent Exchanges, calculates the cryptocurrency pricing products and disseminates the same to the Data Licensor/Distributor.

Unusual and Extreme Circumstances

In the event where unusual and extreme circumstances occur which could jeopardize the ability of the Cryptocurrency Pricing Products to track the underlying value of a cryptocurrency, or where conflicting definitions of a cryptocurrency exist, the Administrator shall be responsible for recommending the necessary actions and responses to ensure the relevance and integrity of the Cryptocurrency Pricing Products.

Examples of unusual and extreme circumstances may include, but are not limited to:

- A security compromise at a Constituent Exchange, especially if the Constituent Exchange publishes market data that deviates from the underlying value of cryptocurrency;
- A hard fork of the respective cryptocurrency underlying blockchain, where both forks continue to be actively mined and traded but may not be fungible with each other; and
- Significant circumstances where a given cryptocurrency is not fungible between Constituent Exchanges, e.g. where bitcoin withdrawn from one Constituent Exchange may not be accepted for deposit at another Constituent Exchange

Note that large movements and/or high volatility of the price of a cryptocurrency generally do not constitute an unusual or extreme circumstance on their own, provided that the market data published by Constituent Exchanges generally tracks the underlying value of a cryptocurrency.

Prior to taking action, the Administrator must confirm that the current conditions are unusual and extreme and the taking of the proposed specific action or actions are necessary and prudent to maintain the relevance and integrity of the Cryptocurrency Pricing Products and receive the joint approval from the CF Member of the Oversight Committee and at least one of the CME Members of the Oversight Committee or their respective designee.

After taking one or more actions, the Administrator must notify the Oversight Committee within six hours.

The Administrator will timely publish summaries of all actions taken under this section of the Practice Standards on the Administrator's website.

Investigations of Complaints or Concerns Regarding Cryptocurrency Pricing Products

Stakeholders may submit any complaints or concerns regarding Cryptocurrency Pricing Products by emailing complaints@cfbenchmarks.com

Representatives of the Cryptocurrency Pricing Products Team will receive notification of any complaint or concern and will investigate the allegations in accordance with the following procedures:

- Investigations shall be conducted in a timely manner taking into account the nature of the complaint and its impact to the calculation process and the integrity of the Cryptocurrency Pricing Products;
- No member of the investigation team may be the subject of the allegation;
- The Oversight Committee shall receive a copy of all submitted allegations and receive an update on the investigation at its next quarterly meeting or on a more expedited timeline if necessary based on the nature of the complaint; and
- The Oversight Committee shall be responsible for overseeing any remediation or enhancements to the control framework resulting from the complaint.

Contacts for Further Information

For further information on the Cryptocurrency Pricing Products Practice Standards, please contact:

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Appendix A

Full List of CME CF Cryptocurrency Pricing Products

CME CF Cryptocurrency Reference Rates

	CME CF Bitcoin Reference Rate	CME CF Ether-Dollar Reference Rate
Ticker Symbol	BRR	ETHUSD_RR
Relevant Pair	Bitcoin vs. U.S. Dollars	Ether vs. U.S. Dollars
Effective Time	4:00 p.m. London time	4:00 p.m. London time

CME CF Cryptocurrency Real Time Indices

	CME CF Bitcoin Real Time Index	CME CF Ether-Dollar Real Time Index
Ticker Symbol	BRTI	ETHUSD_RTI
Relevant Pair	Bitcoin vs. U.S. Dollars	Ether vs. U.S. Dollars
Calculation Frequency	Every second, 24 hours a day, every day	

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