



Koinju Reference Rates

Benchmark Statement

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Archives

“Koinju Reference Rates Benchmark Statement” updates and reference history

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Summary

As a Benchmark Administrator registered under n° BMR2021000001 in accordance with art. 34 of the (EU) 2016/1011 European Parliament and Council Regulation of June 8th 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds, amending the 2008/48/EC and 2014/17/EU Directives and (EU) n°596/2014 Regulation (hereinafter referred to as “BMR’ Regulation”) and authorized and regulated by the French Financial Markets Authority, Maarkt (hereinafter referred to as “the Administrator”) is required to publish a Benchmark Statement in accordance with art. 27 of the above-mentioned Regulation and art. 1 of the (EU) 2018/1643 Delegated Regulation of July 13th 2018. The content of this Statement meets the requirements of the above-mentioned regulations and directives. Maarkt provides services as a Calculation Agent, Benchmarks Administrator, and more generally as a data provider under the registered trademark “Koinju”.

This document is intended for Users of Benchmarks responding to the “Koinju Reference Rates” Family of Benchmarks. Its scope covers all the Reference Rates of this Family produced by the Administrator, as well as the Input Data that received from the selected Exchanges Platforms. As a reminder, the Administrator shall not be held responsible for the data made available in such way.

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1 General information

Benchmark Statement date of creation: February 8th, 2021.

Benchmark Statement date of last update: February 8th, 2021.

Benchmark Statement's scope: Family of Benchmarks hereinafter referred to as "Koinju Reference Rates".

This Benchmark Statement targets "Non-Significant Benchmarks" in the sense of art. 3.1 pt 27) of the "BMR" Regulation, framed in art. 26 of said Regulation.

The Input Data used to calculate this Family's Reference Rates is made available through Exchanges Platforms that are not "Contributors" (in accordance with art. 3.1 pts 8) and 9) of the "BMR" Regulation.

2 Observed Market Information

2-1 Description and Use of Reference Rates

2-1-1 Economic Representativeness of Koinju Reference Rates

Like FOREX, Crypto-assets are not traded (or quoted) on a single exchange, but on a plurality of them. In fact, the measure of the "economic reality" (in the meaning of recitals 23 to 27 of the "BMR" Regulation and art. 11 (among others) of said Regulation) of this set of observed markets (the Crypto-assets ones) is obtained through the aggregation of data made available by the Technical Interfaces of Exchange Platforms that are selected by the Administrator (in accordance with both quantitative and qualitative criteria).

Each Reference Rate of the "Koinju Reference Rate" Family aims to reflect the economic reality and price fluctuation of a particular Crypto-asset traded for a Quotation currency which is legal tender on a plurality of selected Exchange Platforms.

2-1-2 Use of "Koinju Reference Rates"

Koinju Reference Rates can be used to calculate the amount payable under a financial instrument or a financial contract, or the value of a financial instrument, or can be used to



measure the performance of an investment fund with the purpose of tracking the return of such index or of defining the asset allocation of a portfolio or of computing the performance fees.

2-1-3 “Koinju Reference Rates” Family content

Symbol	Product	Currency	Type	Index Long Name
KBTUR	Bitcoin	USD	Reference Rate	Koinju Bitcoin-USD Reference Rate
KETUR	Ethereum	USD	Reference Rate	Koinju Ethereum-USD Reference Rate
KLUR	Litecoin	USD	Reference Rate	Koinju Litecoin-USD Reference Rate
KBTGR	Bitcoin	GBP	Reference Rate	Koinju Bitcoin-GBP Reference Rate
KETGR	Ethereum	GBP	Reference Rate	Koinju Ethereum-GBP Reference Rate
KBTER	Bitcoin	EUR	Reference Rate	Koinju Bitcoin-EUR Reference Rate
KETER	Ethereum	EUR	Reference Rate	Koinju Bitcoin-EUR Reference Rate
KXTUR	Tezos	USD	Reference Rate	Koinju Tezos-USD Reference Rate
KEOUR	Eos	USD	Reference Rate	Koinju Eos-USD Reference Rate
KDAUR	Dai	USD	Reference Rate	Koinju Dai-USD Reference Rate
KATUR	Atom	USD	Reference Rate	Koinju Atom-USD Reference Rate

2-1-4 Geographical boundaries

The observed market has no particular geographical boundaries.

2-2 Calculation methodology

Reference Rates calculation is based on the relevant Trades of matching Markets (in terms of Quotation Currency) of selected Exchanges Platforms.

Calculation steps:

1-During a given Observation Period, the relevant Trades received are aggregated into a common list containing the respective Price, Volume and Timestamp, and are sorted in chronological order. All Timestamps are published by the selected Exchanges Platforms for each Trade in accordance with the expected general time repository (UTC hours expressed in milliseconds or microseconds).

2-The list is partitioned into a number of (Σ) Time Interval of equal duration. Each Time Interval corresponds to an Observation Period of (N) second(s) with a precision defined at millisecond.

The first Interval starts (ΣN) seconds before the fixing time, and the last Interval starts (N) second(s) before the fixing time. In total, the calculation period extends over an Observation Period of (ΣN) second(s) comprising (Σ) Intervals of (N) second(s).

3-For each partition, we calculate the median of the relevant Trades' Prices weighted by their respective Volumes. The median weighted by the Volumes is calculated by ordering the Trades from the lowest to the highest Price over the period, and then selecting the Price corresponding to the Trade of the 50th percentile of the cumulative sum of the Volumes of these Trades.

4-The Reference Rate of a Crypto-asset is then given by the average of all partition medians. In other words, the sum of weighted medians previously considered adjusted by the number of partitions:

$$\frac{1}{K} \sum_{i=1}^K VWM_{i_k}$$

Legend:

- *K*: Number of partitions
- *i*: *i*th partition
- *VWM_{i_k}*: Volume Weighted Median of the *i*th Interval considered

The resulting number is the Reference Rate.

This methodology meets the following criteria for robustness evaluation:

- **Relevance:** The Reference Rate shall reflect the actual market value of the Crypto-asset as accurately as possible;
- **Periodicity:** The Reference Rate shall refer to a Time Interval as accurate as possible and shall be delivered as soon as possible at the end of the Observation Period;
- **Resistance to manipulation:** it shall be as complex (or costly) as possible to deflect the Reference Rate from the actual value of the observed market;
- **Verifiability:** The Reference Rate calculation methodology shall be transparent so that the results of the calculations can be independently audited;
- **Reproducibility:** the investors shall be able to reproduce the Reference Rate with a minimum of replication error (standard deviation between rate and portfolio or financial instruments or share of funds);
- **Stability:** The Reference Rate shall not present price fluctuations other than those caused by actual variations and should not be sensitive to outliers and data quality issues;
- **Parsimony:** The Reference Rate methodology uses as few arbitrary parameters as possible.

2-3 Approval and Restatement of Reference Rates

The relevance of the Reference Rates and the pertaining calculation methodology are approved by the Oversight Function together with the Administrator in light of the market or economic reality they are supposed to represent. They are subject to an annual minimum review, or every time an event can reasonably influence the economic and financial representativeness of these Benchmarks.

2-4 Modification and Cessation of a Reference Rate

2-4-1 Modification

In accordance with art. 28 of “BMR” Regulation, where the representativeness of a Reference Rate or the Reference Rates Family is not or no longer fulfilled due to economic and market factors, where a significant pool of Users demonstrates that the adaptation of a Reference Rate is necessary in the face of market evolutions, or where the calculation methodology used not allows anymore to calculate a representative benchmark because of a selected Exchange Platform or constituent Market permanent suspension, the Administrator may proceed to a modification procedure.

Disclaimer: such a modification may affect the fund's performance calculation, the amount payable under a financial instrument or a financial contract calculation, the financial instrument valuation, the measure of the performance of an investment fund with the purpose of tracking the return of such index, or the definition of the asset allocation of a portfolio or the performance fees whose determination is based on the use of the Reference Rate(s) at issue.

2-4-2 Cessation

In accordance with art. 28 of “BMR” Regulation, where, for the above reasons, a modification is not sufficient, the Administrator may terminate the provision of the relevant Reference Rate(s).

Disclaimer: such a cessation may affect the fund's performance calculation, the amount payable under a financial instrument or a financial contract calculation, the financial instrument valuation, the measure of the performance of an investment fund with the purpose of tracking the return of such index, or the definition of the asset allocation of a portfolio or the performance fees whose determination is based on the use of the Reference Rate(s) at issue.

2-4-3 Public consultation

Modification and/or cessation procedures are subject to a public consultation procedure. The terms of this procedure are communicated publicly and directly to stakeholders within a reasonable time, which can vary according to various circumstantial factors.



In accordance with art. 13 of the “BMR” Regulation, only “material modifications” and termination of the Reference Rate administration are subject to a public consultation process.

2-5 Expert Judgment

No Expert Judgment is utilized either in the use of The Input Data (according to the provisions of art. 3.1 pt 13 of the “BMR” Regulation) or in the continuous Reference Rates calculation, except in exceptional circumstances which will then be the subject of a transferable report to the Users (which is a matter of trade secret).

2-6 Publication timing

The Administrator makes every effort to publish Koinju Reference Rates on an ongoing basis. Continuous publication is an obligation of means for the Administrator.

3 Input Data Information

3-1 Description

The Input Data used to calculate the Reference Rates are those derived from the Technical Interfaces of the selected Exchange Platforms.

Eligible sources of Input Data are the same for each Reference Rate that forms the same Family. In this case: the data from the selected Exchange Platforms. Each Reference Rate is calculated from the Input Data made available solely by the Exchanges Platforms offering a Market quoting a specific Crypto-asset into a desired Quotation Currency.

3-2 Hypothesis of Non-Satisfaction of Input Data

In some hypothesis, the Input Data collected through one or more Technical Interface(s) of selected Exchange Platforms may no longer meet, on a temporary (short-term) or prolonged basis (long and persistent duration), the requirements of sufficiency and appropriateness under art 11 of the “BMR” Regulation, which are necessary a satisfactory Reference Rates calculation.

These assumptions are (but not limited to):

- Missing or late data, caused by various unintentional events (such as Extraordinary Event, or any event outside the Administrator’s control) or intentional (such as the



voluntary cut-off of a selected Exchanges Platform from any access to its Technical Interface);

- Incorrect data, as a non-relevant Trade type (not corresponding to the expected data format), or that results from an unpredictable economic and/or technical event, such as Extraordinary Event (but not only).

3-3 Procedures

The Administrator make reasonable means to ensure the continuity of the provision of the Reference Rates. In the event of the occurrence of one or more of the above hypothesis, and when the assumption(s) is/are detected within a reasonable time, the Administrator may choose to suspend the provision of the relevant Reference Rate after an assessment of the risks incurred by such a suspension. If the event is temporary, and where possible, the Administrator can apply a correction procedure (for the future) of the Reference Rate impacted by the Non-Satisfaction of Input Data. In the event of a correction and/or suspension of the provision of the Reference Rate, the procedure(s) applied is/are notified to the User within a reasonable time.

3-4 Liability of the Administrator

Reference Rates calculation and administration depend upstream on Input Data, observed “as is” on the Technical Interface of several Exchange Platforms. In doing so, the Administrator cannot be held liable for contentious and/or erroneous data that is openly accessed by these Exchanges Platforms. The Administrator cannot replace the data made available through the Technical Interface of these Exchange Platforms. Thus, as part of its obligation of means, the Administrator continues its mission limited to the data collected. The Administrator uses all reasonable and necessary means to assess the relevance of the Input Data.

4 Complaint

4-1 Definition and Process

Users, selected Exchanges Platforms, supervision authorities, and anyone who warrants being harmed by the administration of a Reference Rate can file a complaint at the following email address: complaints@koinju.io.

The complaint shall include the following content:

- The plaintiff's civil identity, as well as the social identity of his company (if applicable);
- A detailed explanation of the complaint;

- The scope of the complaint (name of the rate, methodology, etc.);
- The date of the incident that motivated the filing of the complaint.

Upon receipt of the complaint (notified to the plaintiff), a specific file is newly established to ensure archiving and traceability of the procedure. It is processed in a maximum of fifteen (15) business days. A response is then notified within fifteen (15) business days from the end of the processing period.

During the processing period, the complaint department reviews the various elements described in the complaint, and decides to suspend, exclude or maintain the Reference Rate.

4-2 Guarantees

In addition, several guarantees and conditions shall be respected:

4-2-1 Guarantees provided by the Administrator

- The Administrator guarantees to meet the above deadlines;
- The Administrator guarantees that the complaint received is treated with integrity, independence, impartiality and diligence;
- The Administrator ensures that complaints are dealt with fairly;
- The Administrator guarantees that the complaint is kept confidential and does not disclose it to third parties;
- The Administrator guarantees to provide a reasoned, exhaustive and intelligible response;
- Finally, the Administrator guarantees to provide a response not contrary to the objectives of (EU) n°596/2014 Regulation on market abuses.

4-2-2 Guarantees provided by the Plaintiff

- The plaintiff guarantees that all the contentious elements are presented with integrity, independence, impartiality, precision and exhaustivity;
- The plaintiff guarantees that its complaint does not jeopardize the administration of the Reference Rates for personal, economic, financial or political reasons;
- The plaintiff guarantees that his complaint does not have the effect of willfully harming the Administrator;
- Finally, the plaintiff guarantees that its complaint is not contrary to the objectives of (EU) 596/2014 Regulation on market abuses.

5 General Statements

5-1 Policies and Procedures

Under the “BMR” Regulation, the Administrator has put in place the following policies and procedures:

BMR art.	Policy/procedure
4	Conflict of Interest policy
5	Oversight Function policy
6	Control framework
7	Accountability framework
8	Record-keeping policy
9	Complaints-handling policy
11	Input Data policy
14.3	Reporting of infringements
26	Compliance statement

5-2 Benchmark Statement Updates

The Administrator reviews and, if necessary, updates the Benchmark Statement for each Rate or Family of benchmarks in case of a change in the information to be provided under the art. 27 of the “BMR” Regulation, and at least every two years.

6 Definitions

“Administrator”: “a natural or legal person that has control over the provision of a benchmark” (see art. 3.1 pt 6) “BMR” Regulation).

“Crypto-asset”: “Crypto-asset” must be understood as a “digital asset” within the meaning of the legal qualification given by article 150 VH bis - VI of the French General Tax Code. These are, on the one hand, “tokens”, defined as any intangible asset representing, in digital form, one or more rights that can be issued, registered, retained or transferred by means of a shared electronic recording device to identify, directly or indirectly, the owner of that property. On the other hand, Crypto-assets are “crypto-currencies”, defined as any numerical representation of a value that is not issued or guaranteed by a central bank or a public authority, which is not necessarily attached to a legal currency and which does not have the legal status of a currency, but which is accepted by individuals or legal persons as a means of exchange and which can be transferred, stored or exchanged electronically.



“Exchanges Platform”: a legal entity operating several exchange markets of Crypto-assets for legally tender currencies and/or for other Crypto-assets. These Platforms make their market data available through their Technical Interface.

“Extraordinary Event”: an event whose effects are irresistible, and which may, in certain circumstances, be foreseen before and/or during the conclusion of the contract by the Administrator, when it is not outside the control of the latter.

These include:

- The announced suspension or delisting of a Market by one or more selected Exchanges Platforms;
- The suspension of deposits and withdrawals of one or more Crypto-assets composing a Market by one or more selected Exchanges Platforms;
- The compromise of the information system of one or more selected Exchanges Platforms;
- Network and/or software updates related to one or more Crypto-assets leading to potentially predictable events such as "Fork" (see eponymous documentation);
- The Force Majeure: any event whose effects are irresistible, which cannot reasonably be foreseen by the Administrator at the conclusion of the contract with the User, and is outside the control of the Administrator (thus preventing it from carrying out its obligation).

The procedure for dealing with this type of event is subject to specific documentation.

“Family of Benchmarks” (or also **“Family”**): “a group of benchmarks provided by the same administrator and determined from input data of the same nature which provides specific procedures of the same or similar market or economic reality” (see. art. 3.1 pt 4) of the “BMR” Regulation).

“Market”: a “Market” is the exchange of a Crypto-asset for a fiat currency or another Crypto-asset, and whose transaction data is observable on an Exchanges Platform. A Market is considered “material” when used as Input Data of the calculation for one or more Benchmarks.

“Observation Period”: is a fixed and predetermined period during one or more Markets are observed (in the sense of aggregation of data resulting from these Markets).

“Price”: the price of a Crypto-asset corresponds to its floating exchange rate. This is determined at each Trade by the balance between bids and asks on organized Markets and specific locations that ensure the listing and execution of exchanges of this type of assets (see the “Exchange Platforms”).

“Quotation Currency”: in a currency pair's exchange market, any reference currency is expressed in relation to a “Quotation Currency”. It reflects how much of the quote currency is needed to be sold/bought to buy/sell one unit of the base currency. Currencies are commonly identified by a code (set by ISO 4217) and by the Crypto-assets by the three- or four-letter



alphabetical code to which they are associated in the international market. Thus, the quotation of bitcoin in euro is expressed as “1 BTC = X EUR”.

“Refreshment Time”: corresponds to the smallest Time Interval of the buffer list, storing the relevant Trades of an observed Market for the execution of an iterative calculation process.

“Technical Interface”: Application Programming Interface (or API).

“Timestamp”: the mechanism by which an event is associated with a measurement of time in the Unixtime repository (POSIX) in accordance with ISO 8601. We speak of a temporal repository common to the Exchanges Platforms for the Input Data that they make accessible according to the Coordinated Universal Time (UTC), a time scale adopted as an international repository to express any measurement of time. The temporal repository Input Data is fixed and is strictly respected in the context of the calculation of one or more Reference Rates.

“Trade”: any transaction in a pair’s exchange market is expressed in accordance with a Quotation Currency (having legal tender or Crypto-asset), whose Timestamping occurs during a given Observation Period, and which is made available by an Exchanges Platform through its Technical Interface.

“User”: is a “User” the natural or legal person who uses one or more Benchmarks provided by the Administrator for:

- The issuance of a financial instrument which references an index or a combination of indices;
- The determination of the amount payable under a financial instrument or a financial contract by referencing an index or combination of indices;
- Being a party to a financial contract which references an index or a combination of indices;
- Providing of a borrowing rate as defined in point j) of Article 3 of Directive 2008/48/EC calculated as a spread or mark-up over an index or a combination of indices and that is solely used as a reference in a financial contract to which the creditor is a party;
- Measuring the performance of an investment fund through and index or a combination of indices for the purpose of tracking the return of such index or combination of indices, of defining the asset allocation of a portfolio, or of computing the performance fees.

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If you have any questions, please contact us:

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