



Hourly Reference Rates Methodology

Version 2.4

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1 Introduction

Coin Metrics produces the Coin Metrics Hourly Reference Rates (the “Reference Rates”), a collection of reference rates quoted in U.S. dollars, published once per hour, for a set of cryptocurrencies. The Reference Rates are designed to serve as a transparent and independent pricing source that promotes the functioning of efficient markets, reduces information asymmetries among market participants, facilitates trading in standardized contracts, and accelerates the adoption of cryptocurrencies as an asset class with the highest standards. The Reference Rates are calculated using a robust and resilient methodology that is resistant to manipulation and adheres to international best practices for financial benchmarks, including the International Organization of Securities Commissions’ (IOSCO) Principles for Financial Benchmarks. The Coin Metrics Oversight Committee (the “Oversight Committee”) and an independent governance structure protect the integrity of the Hourly Reference Rates and ensure the Hourly Reference Rates serve as a source of transparent and independent pricing.

2 Description

The Reference Rates are published hourly, every day of the year, and represent the reference rate of one unit of the cryptocurrency quoted in U.S. dollars. The Reference Rates are calculated at the end of every hour (the “Calculation Time”) and are published within 60 minutes (the “Publication Time”).

3 Coverage Universe

The set of cryptocurrencies included in the Hourly Reference Rates coverage universe are included in Appendix A.

4 Data and Calculation Methodology

4.1 Data Sources

The input data source for the Reference Rates are markets traded on cryptocurrency exchanges that are approved to serve as pricing sources by the Oversight Committee. The Oversight Committee evaluates markets using a Market Selection Framework that assesses markets along a wide set of criteria to determine if the data source reflects trading activity in a transparent and representative manner. The Oversight Committee evaluates new markets for inclusion as constituent markets and evaluates existing constituent markets using the Market

Selection Framework on a quarterly basis or as market conditions warrant. Markets that are approved by the Oversight Committee are added to a list of constituent markets (the “Constituent Markets”). A separate list of Constituent Markets is maintained for each of the Reference Rates in the coverage universe.

A candidate market can be nominated for inclusion and an existing constituent market can be nominated for exclusion by any member of the public or member of the Oversight Committee. Public nominations for inclusion or exclusion of a market can be submitted in writing to support@coinmetrics.io. The Oversight Committee may convene to apply the Market Selection Framework to evaluate the inclusion or exclusion of a market between regularly-scheduled quarterly meetings if market conditions or circumstances warrant. Coin Metrics publishes a current list of Constituent Markets for each cryptocurrency in the Reference Rates coverage universe, updates on inclusions or exclusions of constituent markets, and the rationale for making any change.

4.2 Market Selection Framework

The Market Selection Framework consists of a fully-systematized process for evaluating markets to serve as input pricing sources for the calculation of the Reference Rates. It produces a unique set of candidate selected markets for each asset in the coverage universe that are then subsequently reviewed by the Oversight Committee. The market selection framework evaluates markets based on the following criteria:

1. **Technology:** An assessment of whether the technology infrastructure of the market’s exchange provides sufficient availability and reliability for input data collection. Evaluates whether the exchange offers a REST API, Websocket feed, or FIX API suitable for data collection. Evaluates the performance of the API in terms of reliability and latency.
2. **Legal and Compliance:** An assessment of whether the market’s exchange complies with laws and regulations. Evaluates the exchange’s legal risk exposure, and whether it adheres to regulatory best practices. Evaluates whether the exchange has publicly-disclosed trading policies, uses market surveillance technology, and complies with national regulatory organizations, and enforces KYC and AML requirements. Evaluates whether the exchange has functioning fiat and cryptocurrency withdrawals processed within a normal timeframe. Evaluates whether a data sharing license can be executed with the exchange.
3. **Business Model:** An assessment of the market’s exchange with respect to its business model, including its fee structure and asset listing standards.
4. **Data Availability:** An assessment of the available data the market’s exchange offers for the given cryptocurrency, including the number of markets where the given cryptocurrency is the base currency, whether the

markets are quoted in fiat currencies or other cryptocurrencies, and the type of markets offered.

5. Price: An assessment of the quality of the market's price data, including testing for the occurrence of price outliers and impactful price deviations from other markets, and implementing tests that determine whether the markets function as active markets in the underlying cryptocurrency and are anchored by observable transactions entered into at arm's length between buyers and sellers.
6. Volume: An assessment of the quality of the market's volume data, including testing for manipulated volume figures, and implementing tests that determine whether the markets function as active markets in the underlying cryptocurrency and are anchored by observable transactions entered into at arm's length between buyers and sellers. The size of the exchange's markets are also considered.
7. Order Book: An assessment of the quality of the market's order book data, including tests for manipulated orders, and implementing tests that determine whether the market function as active markets in the underlying cryptocurrency and are anchored by observable transactions entered into at arm's length between buyers and sellers. The liquidity of the market is also considered.

4.3 Data Inputs

The data inputs for the calculation of the Reference Rates are observable transactions in an active market where the given cryptocurrency is traded. The pool of candidate markets that are evaluated by the Market Selection Framework are determined by a hierarchy of data inputs that varies depending on the given cryptocurrency.

4.3.1 Bitcoin (BTC) and Ethereum (ETH)

The pool of candidate markets that are evaluated for the calculation of the Reference Rates for Bitcoin (BTC) and Ethereum (ETH) are determined using the following data hierarchy:

1. The primary data input is observable transactions in an active market where the given cryptocurrency is the base currency and the quote currency is U.S. dollars.
2. Markets where the given cryptocurrency is the base currency and the quote currency is not U.S. dollars are not considered, including markets quoted in other fiat currencies or markets quoted in stablecoins.

4.3.2 Other Cryptocurrencies Excluding Stablecoins

The pool of candidate markets that are evaluated for the calculation of the Reference Rates for other cryptocurrencies, excluding Bitcoin (BTC), Ethereum (ETH), and stablecoins are determined using the following data hierarchy:

1. The primary data input is observable transactions in an active market where the given cryptocurrency is the base currency and the quote currency is U.S. dollars.
2. If the above data inputs do not exist or the Oversight Committee makes a determination that the above data inputs are insufficient to calculate the reference rate, the universe of data inputs will expand to include observable transactions in an active market where the given cryptocurrency is the base currency and quote currency is BTC.
3. If the above data inputs do not exist or the Oversight Committee makes a determination that the above data inputs are insufficient to calculate the reference rate, the universe of data inputs will expand to include observable transactions in an active market where the given cryptocurrency is the base currency and quote currency is ETH.

4.3.3 Stablecoins

The pool of candidate markets that are evaluated for the calculation of the Reference Rates for stablecoins are determined using the following data hierarchy:

1. The primary data input is observable transactions in an active market where the given stablecoin is the base currency and the quote currency is U.S. dollars.
2. If the above data inputs do not exist or the Oversight Committee makes a determination that the above data inputs are insufficient to calculate the reference rate, the universe of data inputs will expand to include observable transactions in an active market where Bitcoin (BTC) is the base currency and quote currency is the given stablecoin.
3. If the above data inputs do not exist or the Oversight Committee makes a determination that the above data inputs are insufficient to calculate the reference rate, the universe of data inputs will expand to include observable transactions in an active market where Ethereum (ETH) is the base currency and quote currency is the given stablecoin.

The data hierarchy for stablecoins differs from other cryptocurrencies because market convention sets stablecoins as the quote currency for the majority of active markets. The following cryptocurrencies in the coverage universe are considered to be stablecoins:

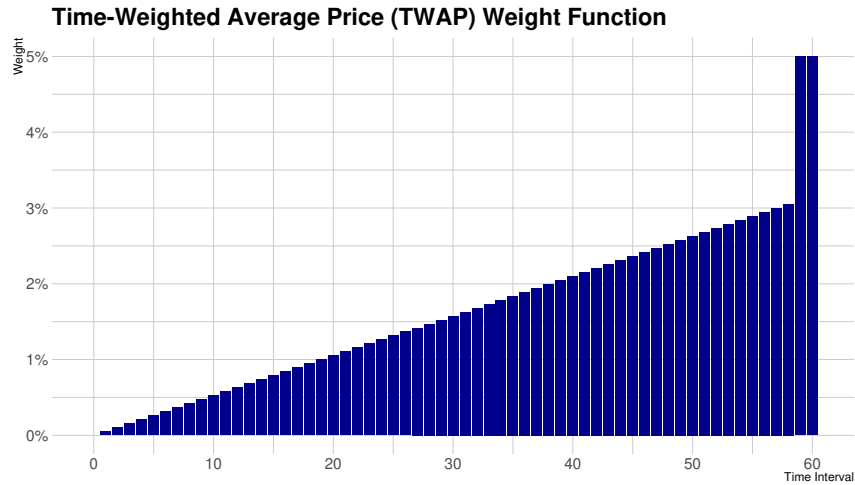
Name	Ticker
Sai	sai
Tether	usdt
TrueUSD	tusd
STASIS EURS	eurs
USD Coin	usdc
Paxos Standard	pax
Gemini Dollar	gusd
HUSD	husd
Binance USD	busd
Dai	dai
USDK	usdk

4.4 Calculation Algorithm

The calculation algorithm of the Reference Rates is described below.

1. All observable transactions from Constituent Markets are combined and partitioned into time intervals, with each time interval spanning a period of one minute. The first one-minute time interval begins 60 minutes before the Calculation Time and the last one-minute time interval begins at the Calculation and ends one minute after the Calculation Time. In total, the calculation period spans a period of 61 minutes (the “Observation Window”). A total of 61 one-minute time intervals are created.
2. The price of each observable transaction for one unit of the given cryptocurrency is converted to U.S. dollars if necessary using the Reference Rates calculated for Bitcoin (BTC) or Ethereum (ETH).
3. The volume-weighted median price (VWMP) of each time interval is calculated. The volume-weighted median rate is calculated by ordering the transactions from lowest to highest price, taking the cumulative sum of volumes of these transactions, and identifying the price associated with the trades at the 50th percentile of U.S. dollar volume.
4. The time-weighted average price (TWAP) of the 61 time intervals is calculated using a custom weight function. The weight function assigns a weight of 0 percent to the first time interval, subsequent time intervals are assigned a weight that increases linearly, and the last two time intervals are assigned a weight of 5 percent such that the sum of all weights equals 100 percent. The weight function assigns more weight to time slices that are closer to the Calculation Time. The resulting figure is the published reference rate.

A chart of the weights is included below and the exact weights for each time interval are listed in Appendix B:



4.5 Data Contingency Rules

The following contingency rules are followed to address situations where data is delayed, missing, or unavailable due to periods of illiquidity, extraordinary market circumstances, or outside factors beyond the control of Coin Metrics.

1. If observable transactions from a constituent market are unable to be collected due to technical problems specific to the constituent market's exchange during the calculation of a reference rate, the observable transactions from the constituent market are not included in the calculation of the specific instance of the given reference rate.
2. If no observable transactions from constituent markets occur during the first one-minute time interval, the next one-minute time interval's volume-weighted median price is used as the volume-weighted median price. This contingency rule is applied recursively if necessary.
3. If no observable transactions from constituent markets occur during any one-minute time intervals, excluding the first and last one-minute time intervals in the Calculation Window, the next one-minute time interval's volume-weighted median price is used as the volume-weighted median price. This contingency rule is applied recursively if necessary.
4. If no observable transactions from constituent markets occur during the last one-minute time interval, the previous time interval's volume-weighted

median price is used as the volume-weighted median price. This contingency rule is applied recursively if necessary.

5. If no observable transactions from constituent markets exist during the Calculation Period for a reference rate, the reference rate will be determined to equal the previous hourly reference rate in which there were trades during that hour's Observation Window.

4.6 Data Exclusion Rules

All observable transactions from constituent markets are evaluated using a systematic data quality control process. If potential errors or anomalies in the data are detected, the exercise of expert judgment will be applied to determine if the potentially erroneous data is included in the calculation of the reference rate. The exercise of expert judgment in this circumstance is used to determine if the potentially erroneous data reflects observable transactions that are entered into at arm's length between buyers and sellers and constitute an active market in the underlying cryptocurrency, whether the observable transactions in question are formed by the competitive forces of supply and demand, and whether the observable transactions in question are a credible indicator of executable prices in the underlying cryptocurrency. An investigation into the causes of the potential error, including whether any price deviations are specific to the exchange itself, is conducted. Any exercise of expert judgment is subject to dual approval by staff members, and is logged and reported to the Oversight Committee which periodically reviews the application of expert judgment to ensure consistency.

5 Recalculations

If errors are discovered in the calculation process subsequent to the publication of the reference rate, a recalculated reference rate may be published. Such errors can include the following events:

1. A constituent market begins trading at a spread against other constituent markets due to a temporary halting of withdrawals or deposits or an increase in solvency risk for a specific exchange
2. A constituent market is temporarily halted due to unplanned exchange maintenance that
3. Data from constituent markets is interrupted due to network delays or instability
4. Data from constituent markets is interrupted due to an unplanned change in an exchange's API

5. Suspected trade manipulation is observed on a constituent market
6. A ticker change or token swap for a constituent market is missed or misapplied
7. Calculation methodology is incorrectly applied

Recalculations to the reference rates are assessed on a case by case basis in consultation with the Oversight Committee. Decisions regarding recalculations take into consideration all the available data and the potential negative impact or disruption involved in a recalculation. All recalculations are announced simultaneously to all clients prior to beginning .

6 Administration

Coin Metrics serves as the administrator for the Reference Rates and has primary responsibility for all aspects of the Reference Rates determination process, including the development, definition, determination, dissemination, operation, and governance of the Reference Rates. All aspects of the production of the Reference Rates are carried out by Coin Metrics, and Coin Metrics does not rely on any third parties for the determination of the Reference Rates.

Coin Metrics ensures that transparency regarding significant decisions and associated rationale are published and made available to external stakeholders. Data contingency and data exclusion rules are in place to handle certain extraordinary circumstances and external factors beyond the control of Coin Metrics. The Oversight Committee reviews and provides challenge on the Reference Rates production process.

7 Internal Oversight

The Oversight Committee provides independent oversight over the production of the Reference Rates. The Oversight Committee’s responsibilities include regular reviews of the Reference Rate production process, the Reference Rate definition and calculation methodology, the selection of data sources and data inputs, any uses of expert judgment or non-standard procedures, conflicts of interest, material changes to or termination of the Reference Rates, reviewing the results of external and internal audits, and any complaints or questions regarding the Reference Rates from external stakeholders. Additional information regarding the responsibilities and membership of the Oversight Committee can be found in the Coin Metrics Operating Committee Charter document.

8 Conflicts of Interest

Coin Metrics enforces policies and procedures relating to conflicts of interest in connection with the production of the Reference Rates. The conflicts of interest policy addresses the identification, disclosure, management, and mitigation of conflicts of interest. These policies and procedures are periodically reviewed by the Oversight Committee. Coin Metrics is committed to disclosing any material conflicts of interest to external stakeholders and to regulatory authorities.

9 Material Changes or Termination

Coin Metrics may initiate material changes to or terminate a reference rate due to certain extraordinary market circumstances or external factors. These circumstances or external factors include, but are not limited to:

1. The reference rate no longer serves, and could not be modified to serve, as a transparent and independent pricing source for the underlying cryptocurrency
2. The market liquidity in the underlying cryptocurrency declines to an extent that the input data sources no longer function as active markets
3. The underlying cryptocurrency experiences a contentious hard fork in which both forks survive

In such circumstances, Coin Metrics will review the Reference Rates to ensure the Reference Rates are properly reflecting their underlying cryptocurrencies, and if necessary, make changes to the methodology or definition of the Reference Rates to properly account for changing market structure, circumstances, and industry conventions in the underlying cryptocurrency. Any such change or termination will be reviewed and approved by the Oversight Committee. Any approved change or termination will be publicly disclosed to external stakeholders with a detailed explanation of the rationale. In a manner appropriate to the circumstances, Coin Metrics will develop a plan to notify, solicit comments from, and consult with external stakeholders before implementing any material change or termination. Any change or termination will include a timeline explaining the timing of changes or termination and include steps to mitigate any negative effects on external stakeholders.

10 Internal Controls

Coin Metrics has implemented internal controls to protect the integrity of the Reference Rates. These controls cover the selection of input data sources, the

collection of data from input data sources, and maintaining the integrity of collected data. Staff involved with the production of the Reference Rates have been trained in the proper usage of the data and maintain proper segregation of responsibilities. Any exercise of expert judgment or non-standard procedures is subject to dual approval by staff members, and is logged and reported to the Oversight Committee which periodically reviews any incidents. In addition, Coin Metrics maintains a whistleblowing mechanism to facilitate the reporting of any potential misconduct.

11 Complaints

Complaints about the calculation methodology of the Reference Rates or the value of a published reference rate should be submitted in writing to support@coinmetrics.io. Coin Metrics will investigate any complaints and respond to the complainant in a fair and timely manner. Any investigation of the complaint will adhere to the following procedures:

1. The personnel receiving and investigating the complaint will be independent of any personnel who may have been involved in the subject of the complaint.
2. All records and documents submitted by the complainant and related to the investigation into the complaint will be retained for a period of at least five years and submitted to the Oversight Committee for review.
3. Any complaint that results in a change in the determination of the Reference Rates, its calculation methodology, or its policies will be publicly disclosed and will explain the action taken.

12 Internal Audit

The Oversight Committee appoints an independent internal auditor to review the Reference Rates' adherence to its stated methodology, compliance with policies, and adherence to the IOSCO's Principles of Financial Benchmarks. The frequency of the independent internal audit is once annually.

13 Record Retention

Coin Metrics retains records, for at least five years, on the following items:

1. All market data that is collected and used in the calculation of the Reference Rates

2. Any use of expert judgment in the calculation of the Reference Rates
3. Any use of non-standard procedures in the calculation of the Reference Rates
4. The identities of staff responsible for the calculation of the Reference Rates
5. Any responses, questions, or complaints received in connection with the calculation of the Reference Rates

14 Compliance

Coin Metrics maintains records and has processes in place to comply with requests for information from regulatory authorities. Coin Metrics commits to full cooperation with any regulatory authority in carrying out their regulatory or supervisory duties.

15 Change Log

1. **Version 2.4 on July 29, 2020:** The coverage universe is expanded to include the following assets: `wrx`, `band`, `ksm`, `usdk`, `snx`, `stx`, `fxc`, `kcs`, `hive`, `nrg`, `cel`, `ubt`, `chsb`, `crpt`, `bht`, `cvt`, `data`, `eurs`, `xns`, `gt`, `dgtx`, `kava`, `tt`, `sxp`, `mx`, `ocean`, `erd`, `lpt`. The publication of reference rates is terminated for the following assets: `storm`, `gto`. A revision policy was amended. The constituent markets for all assets in the coverage universe are updated.
2. **Version 2.3 on February 27, 2020:** The coverage universe is expanded to include the following assets: `xaut`, `paxg`, `husd`, `dgx`, `busd`, `ftt`, `hedg`, `okb`, `zb`, `hbar`, `ckb`, `mof`, `vsys`, `cennz`, `luna`, `chz`, `seele`, `dx`, `matic`, `abbc`, `rif`, `tomo`, `hpt`, and `ant`.
3. **Version 2.2 on February 6, 2020:** The constituent markets for all assets in the coverage universe are updated. The coverage universe is adjusted to remove the following assets: `box`, `cosm`, `fsn`, `medx`, `pst`, and `ttc_protocol`. The coverage universe was expanded to include Dai and the previous asset with this name was renamed to Sai to appropriately reflect MakerDAO's transition from Single-Collateral Dai (Sai) to Multi-Collateral Dai (Dai).
4. **Version 2.1 on December 9, 2019:** The coverage universe is expanded to include the following assets: `algo` and `beam`.
5. **Version 2.0 on July 8, 2019:** Increased publication times from once daily at midnight UTC to once hourly. Changed human oversight from once daily at midnight UTC to once daily at 16:00 New York time.

6. **Version 1.2 on June 13, 2019:** The coverage universe is expanded to include the following assets: `gno`, `hot_holo`, `maid`, `nuls`, `qkc`, `rdd`, `rvn`, `zen`, and `mona`.
7. **Version 1.1 on May 30, 2019:** Updated data contingency rules. If no observable transactions from constituent markets occur during a one-minute time interval, the next one-minute time interval's volume-weighted median price is used instead of the previous. This contingency rule is applied recursively.
8. **Version 1.0 on May 13, 2019:** Initial publication of Reference Rates Methodology.

16 Appendix A

The following table lists the current coverage universe:

Name	Ticker
Bitcoin	btc
Ethereum	eth
XRP	xrp
Tether	usdt
Bitcoin Cash	bch
Bitcoin SV	bsv
Cardano	ada
Litecoin	ltc
Crypto.com Chain	cro
Binance Coin	bnb
EOS	eos
ChainLink	link
Tezos	xtz
Stellar	xlm
Monero	xmr
TRON	trx
UNUS SED LEO	leo
USD Coin	usdc
Huobi Token	ht
VeChain	vet
Ethereum Classic	etc
NEO	neo
IOTA	miota
Dash	dash
Zcash	zec
Cosmos	atom

Name	Ticker
Maker	mkr
Ontology	ont
NEM	xem
Aave	lend
HedgeTrade	hedg
Dogecoin	doge
Basic Attention Token	bat
Dai	dai
Elrond	erd
OKB	okb
FTX Token	ftt
DigiByte	dgb
Synthetix Network Token	snx
Kyber Network	knc
0x	zrx
BitTorrent	btt
Algorand	algo
Paxos Standard	pax
Qtum	qtum
OMG Network	omg
Augur	rep
Theta Token	theta
Hedera Hashgraph	hbar
ICON	icx
TrueUSD	tusd
Zilliqa	zil
Decred	dcr
Bitcoin Gold	btg
Bitcoin Diamond	bcd
Binance USD	busd
Lisk	lsk
Waves	waves
Enjin Coin	enj
Ren	ren
Flexacoin	fxc
Ravencoin	rvn
DxChain Token	dx
MonaCoin	mona
Siacoin	sc
Terra	luna
HUSD	husd
Nexo	nexo
Holo	hot_holo
Nano	nano

Name	Ticker
Loopring	lrc
Bytom	btm
ZB Token	zb
Nervos Network	ckb
Bancor	bnt
Swipe	sxp
Digitex Futures	dgtx
Verge	xvg
Quant	qnt
Celsius	cel
ABBC Coin	abbc
Status	snt
iExec RLC	rlc
IOST	iost
Kava	kava
Blockstack	stx
SwissBorg	chsb
Band Protocol	band
Steem	steem
Horizen	zen
Komodo	kmd
Matic Network	matic
BitShares	bts
Hive	hive
Decentraland	mana
Aragon	ant
Energi	nrg
KuCoin Shares	kcs
MCO Token	mco
WAX	waxp
Unibright	ubt
TomoChain	tomo
Golem	gnt
HyperCash	hc_hyperscash
Syscoin	sys
Zcoin	xzc
Ocean Protocol	ocean
Elastos	ela
RIF Token	rif
aelf	elf
Chiliz	chz
Ardor	ardr
Stratis	strat
v.systems	vsys

Name	Ticker
Numeraire	nmr
Electroneum	etn
Aeternity	ae
Ark	ark
MaidSafeCoin	maid
PAX Gold	paxg
Pundi X	npxs
Aion	aion
NULS	nuls
WaykiChain	wicc
SOLVE	solve
Seele	seele
Power Ledger	powr
CyberVein	cvt
Gatechain Token	gt
Voyager Token	ethos
Orbs	orbs
Storj	storj
ReddCoin	rdd
STASIS EURS	eurs
Molecular Future	mof
Kusama	ksm
Streamr	data
GXChain	gxs
IoTeX	iotx
Gnosis	gno
Utrust	utk
Wanchain	wan
FunFair	fun
Theta Fuel	tfuel
Thunder Token	tt
Ankr	ankr
Waltonchain	wtc
Cortex	ctxc
Huobipool Token	hpt
Request	req
WazirX	wrx
Dragonchain	drgn
Ripio Credit Network	rcn_ripiocreditnetwork
Fantom	ftm
Celer Network	celr
Beam	beam
BHEX Token	bht
PIVX	pivx

Name	Ticker
Project Pai	pai
AdEx	adx
MX Token	mx
Insolar	xns
Nebulas	nas
Metal	mtl_metal
Grin	grin
Enigma	eng
Centrality	cennz
Bytecoin	bcn
Livepeer	lpt
Crypterium	crpt
USDK	usdk
Loom Network	loom
Polymath	poly
Civic	cvc
BitKan	kan
Ignis	ignis
Mainframe	mft
Cindicator	cnd
Bluzelle	blz
Groestlcoin	grs
Populous	ppt
Gas	gas
Vertcoin	vtc
Dent	dent
SingularityNET	agi
QuarkChain	qkc
Metaverse ETP	etp
Tierion	tnt
QASH	qash
Quantstamp	qsp
Raiden Network Token	rdn
Lambda	lamb
Factom	fct
IoT Chain	itc
GoChain	go
Nxt	nxt
Cred	lba
Arcblock	abt
DigixDAO	dgd
Gemini Dollar	gusd
CyberMiles	cmt
Propy	pro

Name	Ticker
Metadium	meta
Game.com	gtc_gamecom
NavCoin	nav
Time New Bank	tnb
Dock	dock
Mithril	mith
TenX	pay
Moeda Loyalty Points	mda
Bibox Token	bix
OAX	oax
OST	ost
Everex	evx
AirSwap	ast
Digix Gold Token	dgx
BankToTheFuture	bft
SIRIN LABS Token	srn
SingularDTV	sngls
Blox	cdt
WePower	wpr
YOYOW	yoyow
district0x	dnt
POA	poa
AppCoins	appc
Viacoin	via
Selfkey	key
PumaPay	pma
Red Pulse Phoenix	phx
Viberate	vib
DATA	dta
DeepBrain Chain	dbc
Nucleus Vision	ncash
Matrix AI Network	man
Odyssey	ocn
BlockMason Credit Protocol	bcpt
Content Neutrality Network	cnn
Ambrosus	amb
Lymbo	lym
IHT Real Estate Protocol	iht
Penta	pnt
ChatCoin	chat
Aeron	arn
Etherparty	fuel
Lunyr	lun
Crowd Machine	cmct

Name	Ticker
Ontology Gas	ong_ontologygas
Tether Gold	xaut
Eidoo	edo
Sai	sai

17 Appendix B

The following table lists the weights applied to each one-minute time interval described in Section 5.4 Calculation Algorithm.

Time Interval	Weight
0	0.000000
1	0.000526
2	0.001052
3	0.001578
4	0.002104
5	0.002630
6	0.003156
7	0.003682
8	0.004208
9	0.004734
10	0.005260
11	0.005786
12	0.006312
13	0.006838
14	0.007364
15	0.007890
16	0.008416
17	0.008942
18	0.009468
19	0.009994
20	0.010520
21	0.011046
22	0.011572
23	0.012098
24	0.012624
25	0.013150
26	0.013676
27	0.014202
28	0.014728
29	0.015254
30	0.015780

Time Interval	Weight
31	0.016306
32	0.016832
33	0.017358
34	0.017884
35	0.018410
36	0.018936
37	0.019462
38	0.019988
39	0.020514
40	0.021040
41	0.021566
42	0.022092
43	0.022618
44	0.023144
45	0.023670
46	0.024196
47	0.024722
48	0.025248
49	0.025774
50	0.026300
51	0.026826
52	0.027352
53	0.027878
54	0.028404
55	0.028930
56	0.029456
57	0.029982
58	0.030508
59	0.050000
60	0.050000