Hashdex Digital Assets Index Construction and Methodology

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1. Introduction

1.1 The Digital Asset Market

Digital assets are a new and emerging asset class where value is derived from the underlying utility of a scarce digital asset, which allows the secure transaction of value on a blockchain or distributed ledger cryptographic protocol. While digital assets are currently a small and fragmented asset class, they represent a unique investment opportunity should adoption and use grow. As blockchain technology advances create new business models and methods of exchanging value, there is expected to be growing demand for financial products that consolidate and more broadly represent the digital asset class as a whole.

1.2 Challenges Associated with Digital Asset Investing

Since the asset class is new and the nature of digital assets are complex, investing in digital assets individually can be risky and technologically difficult as they are typically acquired and stored in a manner that differs significantly from traditional assets. Specifically, acquiring and trading digital assets requires access to unique exchanges and a baseline technical capability. Once digital assets have been acquired, they require more advanced security and storage processes that are unique to digital assets.

1.3 Hashdex Digital Assets Index Overview and Objective

The Hashdex Digital Assets Index (the Index) is designed to broadly track digital assets that represent the overall digital asset market. The Index allows investors to track developments occurring on multiple digital asset exchanges and provides exposure to a variety of digital assets, without requiring the technical capacities associated with holding digital assets directly. Instead of being pegged to a fixed number of constituent digital assets like many traditional static benchmark indices, the Index is comprised of automated rules that allow the Index to periodically adjust its constituents as the market matures. This feature is designed to allow the Index to represent the overall market as it changes over time without being limited to a static number of digital assets.

2. Index Construction

2.1 Defining Eligible Digital Assets

While investing in digital assets represents a unique opportunity for capturing returns linked to a new asset class, it also presents the challenge of ensuring that digital assets considered for the Index meet a minimum standard of security, credibility, exchangeability, and fungibility. In order to ensure that the Index remains neutral and passive and that it only considers digital assets that meet these standards, the Index has predetermined criteria by which digital assets are periodically assessed for eligibility.

The universe of eligible digital assets will be determined based upon the criteria listed below:

1. Digital Asset is Listed on a "Hashdex Core Exchange"

Digital assets are traded on exchanges that have different listing criteria and levels of quality control employed in the digital asset vetting process. Since the intention of the Index is to passively reflect the market, while also ensuring the availability and fungibility of its constituent digital assets, the Index Subcommittee (defined in Section 4) has set forth criteria that qualitatively scrutinizes the vetting processes of various exchanges in order to determine which exchanges the Index Subcommittee will publicly designate as "Hashdex Core Exchanges." In order to be considered for inclusion in the Index on a Reconstitution and Rebalance Announcement Day (as defined in Section 2.4), a digital asset must have been listed on at least one Hashdex Core Exchange for the entire period since the last Reconstitution and Rebalance Day.[1] Current criteria for screening Hashdex Core Exchanges can be found in Appendix A.

2. Digital Asset is Supported by at Least One Qualified Custodian

Digital assets exist within the codebase of an underlying software protocol. Accordingly, digital assets require special services to hold them in storage. To ensure that the Index represents a market of truly investable assets, the Index excludes digital assets from the universe of eligible digital assets that are not supported by qualified custodians which meet minimum institutional custody standards. The criteria for assessing qualified custodians is set forth by the Index Subcommittee and can be found in Appendix B.

3. Digital Asset Meets Minimum Volume Standards

Once digital assets have been filtered through the qualitative exchange and custodian criteria, they must meet minimum volume standards. In order to be considered for inclusion in the Index on Reconstitution and Rebalance Announcement Day, a digital asset must have an average daily trading volume that exceeds $4 million USD equivalent across the Hashdex Core Exchanges where the digital asset is listed for the entire period since the last Reconstitution and Rebalance Day. This threshold exists to ensure a minimum level of price discovery and liquidity for the digital asset to be considered tradable and priced in a way that should accurately reflect its market value.

4. Digital Asset is Free-Floating

Digital asset prices must be free-floating and not pegged to other assets. This criteria exists because digital assets that have prices that are pegged to the value of other assets are not independently valued. Without independent valuation there is no sure way to know that price levels are representative of the market value of the digital asset and so it is not admissible into the Index. This guideline extends to digital assets that are derived from other standalone digital assets.

2.2 Selecting Constituent Digital Assets from the Universe of Eligible Digital Assets

The principal aim of the Index is to capture comprehensive market representation by including digital assets with an appreciable impact on the market, while ignoring those digital assets that do not have sufficient market capitalization (as defined in Section 2.3) to materially impact the overall market. The Index includes all digital assets that exceed a minimum threshold of market significance as discussed below while applying

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[1] For more information, see Section 2.4.

a minimum market representation floor of 75% for the entire Index. The process for selecting constituent digital assets on each Reconstitution and Rebalance Day is as follows:

1. **Eligible digital assets must meet a minimum representative threshold of 0.25% market capitalization as a total of all eligible digital assets.** During the index constitution and rebalancing process, the Index algorithm calculates the digital assets contained in the universe of eligible digital assets that each have an average daily market capitalization for the seven calendar days preceding and including the immediately preceding Reconstitution and Rebalance Announcement Day (as defined in Section 2.4) that exceed 0.25% of the total market capitalization of all eligible digital assets and constitutes them into the Index.[2]

1. **A market representation floor is then applied to the Index to ensure it meets a minimum total market representation of 75% market capitalization of all eligible digital assets.** If the index fails to represent 75% of the market after all eligible digital assets that meet the above minimum representative threshold of 0.25% are added, then additional eligible digital assets will be added in descending order of market capitalization until the Index reaches at least 75% market representation.
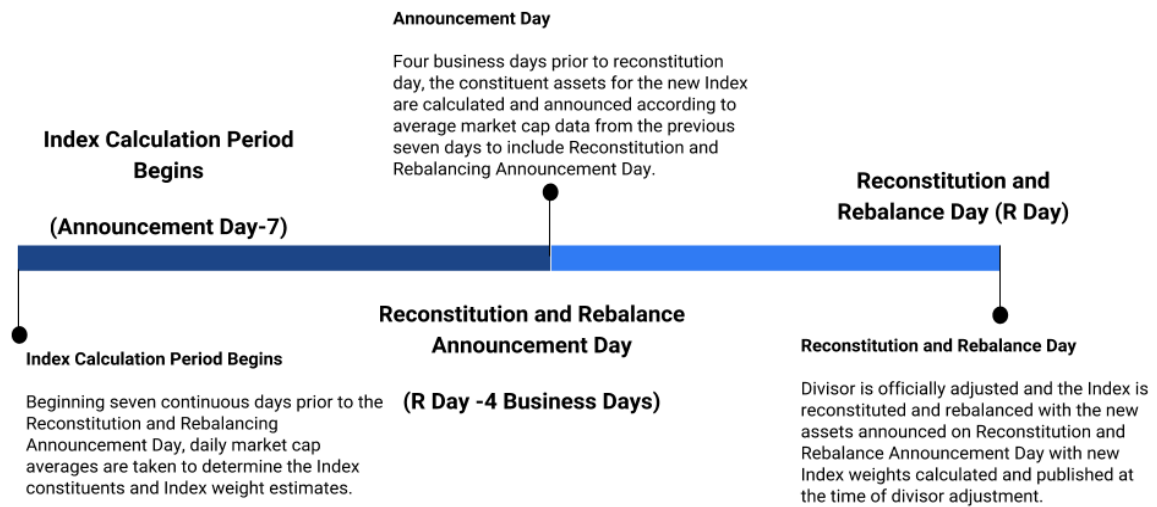
2.3 Weighting

The constituent digital assets selected for entry into the Index will be weighted according to their relative market capitalizations. The market capitalization of an eligible digital asset on any given day is defined as the product of an eligible digital asset's daily price fixing and its circulating supply on that same day.[3] Weights are calculated by dividing the market capitalization of a digital asset by the total market capitalization of all constituent digital assets included in the Index at the time of reconstitution and rebalancing.

2.4 Index Reconstitution and Rebalancing

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[2] Refer to Section 2.4 for reconstitution and rebalancing process details. Refer to Sections 2.5 and 2.6 for details on digital asset price and circulating supply.
[3] Refer to Sections 2.5 and 2.6 for details on digital asset prices and circulating supply.

Announcement Day

Four business days prior to reconstitution day, the constituent assets for the new Index are calculated and announced according to average market cap data from the previous seven days to include Reconstitution and Rebalancing Announcement Day.

Index Calculation Period Begins

(Announcement Day-7)

Reconstitution and Rebalance Day (R Day)

Reconstitution and Rebalance Announcement Day

(R Day -4 Business Days)

Index Calculation Period Begins

Beginning seven continuous days prior to the Reconstitution and Rebalancing Announcement Day, daily market cap averages are taken to determine the Index constituents and Index weight estimates.

Reconstitution and Rebalance Day

Divisor is officially adjusted and the Index is reconstituted and rebalanced with the new assets announced on Reconstitution and Rebalance Announcement Day with new Index weights calculated and published at the time of divisor adjustment.

The Index will be reconstituted and rebalanced on a quarterly basis, on the first business day of March, June, September, and December ("Reconstitution and Rebalance Day"). The term "business day" is defined as a day when U.S. Equity Markets are open for trading according to the Financial Industry Regulatory Authority calendar.

Four business days prior to the Reconstitution and Rebalance Day, Index constituents are selected and their circulating supplies determined ("Reconstitution and Rebalance Announcement Day"). Index constituents are selected on each Reconstitution and Rebalance Announcement Day for the following quarter according to the eligible digital assets' average daily market capitalization from the seven calendar days preceding and including the Reconstitution and Rebalance Announcement Day. For the purposes of selecting Index constituents, market capitalization of an asset on any given day is defined as the multiplication between its end-of-day price fixing[4] and its circulating supply as collected at 11:00:00 ET on that same day. The average of these market capitalizations across the seven days for each asset are the amounts used to select constituent assets[5.]

Circulating supply for each digital asset for the next quarter is determined at 11:00:00 AM ET on the Reconstitution and Rebalance Announcement Day.[6] Index constituents and their circulating supplies are announced at 2:00:00 PM ET on the Reconstitution and Rebalance Announcement Day. Index constituents and their circulating supplies are determined and announced in advance of the Reconstitution and Rebalance Day in order to allow for market participants tracking the Index to prepare for Index constituents entering or leaving the Index on the Reconstitution and Rebalance Day.

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4 Refer to Section 2.5 on Digital Asset Pricing
[5] Refer to Section 2.2 for Asset Selection Process.
[6] Refer to Section 2.6 on Digital Asset Supply.

The Index does not reconstitute or rebalance intra-quarterly except for in the case of exceptional events and with the approval of both the Index Subcommittee and the Oversight Board.[7]

2.5 Digital Asset Pricing

Digital assets are priced in accordance with the Hashdex Digital Asset Reference Price (HDARP) methodology. The HDARP methodology provides market participants with daily price fixings for each digital asset in the *universe of eligible digital assets*.[8] The daily pricing fixings are used to calculate the closing level of the Index and to select Index constituents on the Reconstitution and Rebalance Day.

The HDARP methodology seeks to ensure pricing data reflects certain trading activity on the Hashdex Core Exchanges. Since most digital assets are traded on multiple exchanges, digital asset prices can vary among exchanges over different trading periods. To ensure consistent and accurate pricing, the HDARP uses certain trade data from the Hashdex Core Exchanges and applies algorithms to calculate a daily price fixing for each Index constituent. More detail on the HDARP methodology can be found in Appendix C.

2.6 Digital Asset Supply

The Index will utilize the circulating supply of a digital asset for all calculations. Circulating supply is defined as the total supply of all units of a digital asset issued outside of the codebase since the initial block on a digital asset's blockchain or since the point of inception of the digital asset on a cryptographic distributed ledger. Circulating supply data is collected from CoinCap.io (the "Reference Data Provider"), which has represented to Hashdex that it collects supply data directly from the software code underlying the digital asset.[9]

Circulating supply data will be determined at 11:00:00 AM ET on each Reconstitution and Rebalance Announcement Day.

2.7 Circulating Supply Growth

Most digital assets have an expansionary supply schedule, which means that as network use of a digital asset increases through transactions, the total market supply of that digital asset also grows according to a mathematical formula native to the digital asset's underlying blockchain or cryptographic consensus mechanism. During reconstitution and rebalancing, updated circulating supply of digital assets will be set as set forth in Section 2.4 and will remain fixed until the next reconstitution and rebalancing. The Index fixes circulating supply of Index constituents between reconstitution and rebalancing periods in order to preserve the investability property of the index.

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[7] Refer to Section 4 and 5 for details on governance structure and characterization of exceptional events.

[8] Refer to Section 2.1 on Defining Eligible Digital Assets.

[9] CoinCap.io is a data provider that captures circulating supply figures for digital assets directly from the underlying digital asset codebase. These figures are captured by CoinCap.io, reported on their website, and received by Hashdex through an Application Programming Interface (API).

3. Methodology

3.1 Index Calculation

$$HDCI_t = \frac{\sum_{i \in C} AS_{cr}^i P_{t,i|USD}}{D}, \text{where}$$

$HDCI_t$= Hashdex Digital Assets Index at time t

C = Set of included Index constituents from the previous Reconstitution and Rebalance Day

AS_{cr}^i = Circulating supply of Index constituent i fixed at 11:00:00 AM ET on the previous Reconstitution and Rebalance Announcement Day

$P_{t,i|USD}$ = Daily Price Fixing of Index constituent i

D = Divisor as calculated at 2:00:00 PM ET on the previous Reconstitution and Rebalance Day

3.2 Initial Divisor

On the Start Date, the closing level of the Index is set at 1,000. The formula for calculating the initial divisor is as follows:

$$D_{initial} = \frac{\sum_{i \in C_{t_0}} AS_{t_0}^i P_{t_0,i|USD}}{1000}, \text{where}$$

$D_{initial}$= Divisor value at time of initial index constitution

C_{t_0} = Set of included constituent assets at initial index constitution

$AS_{t_0}^i$ = Circulating supply of asset i fixed at initial index constitution

$P_{t_0,i|USD}$ = Price of asset i at initial index constitution

3.3 Reconstitution and Rebalancing Divisor Adjustment

As the Index is reconstituted and rebalanced on a quarterly basis, digital assets may need to be added and removed. In addition, during each quarterly rebalancing, updates to the available supply levels of constituent digital assets are also accounted for in calculating the new divisor. On each Reconstitution and Rebalance Day a new divisor is calculated according to the eligible digital asset's price fixings on such Reconstitution

and Rebalance Day[10] and will be announced at 2:00:00 PM ET. The formula for re-calculating the new divisor is as follows:

$$D_{new} = D_{old} \left(\frac{\sum_{i \in C_c} AS^i_{cr} P_{t_c,i|USD}}{\sum_{i \in C_p} AS^i_{pr} P_{t_c,i|USD}} \right), \text{ where}$$

D_{new}= New divisor at 2:00:00 PM ET on the current Reconstitution and Rebalance Day

D_{old}= Previous divisor

C_c = Set of included Index constituents from the current Reconstitution and Rebalance Day

C_p = Set of included Index constituents from the previous Reconstitution and Rebalance Day

AS^i_{cr} = Circulating supply of Index constituent i at 11:00:00 AM ET on the immediately preceding Reconstitution and Rebalance Announcement Day

AS^i_{pr} = Circulating supply of Index constituent i at 11:00:00 AM ET on the second most recently preceding Reconstitution and Rebalance Announcement Day

$P_{t_c,i|USD}$ = Daily Price Fixing of Index constituent i on the current Reconstitution and Rebalance Day

3.4 Index Publication and Distribution

The Index constituents, weightings and Index level will be published daily on the Hashdex website. In addition, the historical Index constituents, weightings and circulating supply of each asset during each Index reconstitution and rebalancing, as well as the Index divisor adjustment history will be publicly available on the Hashdex website.

The closing level of the Index will be posted once daily at 2:00:00 PM ET as the official reference value of the Index for each day.

4. Governance

4.1 Governance Design

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[10] Refer to Section 2.5 on Digital Asset Pricing.

The Index has a layered governance structure consisting of the Index Subcommittee (IS) which implements and supervises the Index, the Oversight Board (OB), which is responsible for oversight of the Index, and the Pricing Subcommittee (PS), which is responsible for calculating daily price fixings.

- The Index Subcommittee (IS) is responsible for implementing all procedures set forth in this methodology. In addition, the IS is responsible for monitoring the Index and reviewing any material deviations from established methodology. The IS provides direct governance and maintains responsibility and controls over the development, design, production and distribution of the Index, including the selection of criteria for determining Hashdex Core Exchanges.

- The Oversight Board (OB) is independent of the IS and exercises broad oversight of the Index by reviewing and challenging supervisory decisions made by the IS. The OB is responsible for reviewing reports from the IS, internal legal and compliance team members, and audits.

- The Pricing Subcommittee (PS) is responsible for the calculation of daily price fixings according to the HDARP methodology.

4.2 Reporting Requirements

The IS is required to report to the OB on governance matters of importance including, but not limited to, client complaints, changes to the Index methodology, and any operational disturbances. Moreover, any issues which are deemed significant or remain persistently unresolved are required to be formally escalated to the OB in a timely manner.

4.3 Index Review

The OB will conduct an annual review of the Index with the participation of the IS in order to determine if (a) the design continues to meet its intended objective of providing a meaningful market representation of the digital asset class, (b) the input data used in the calculation and administration of the index remains sufficient, credible, and relevant, (c) the selection criteria and methodology function without the need for significant intervention on the part of the IS, and (d) the HDARP methodology accurately measures eligible digital assets' and Index constituents' prices. In the event of extreme events or market conditions, an Index review may be conducted at any time.

Depending on the circumstances above, a change to the Index might be necessary. Relevant changes to the Index shall be notified to the OB, which must approve any such change. For purposes of determining whether a change should be notified to the OB, the following factors shall be taken into account:

1. If the change has the potential to cause a material economic and/or financial impact on the market tracking the Index;

2. If the change has the potential to cause the Index to diverge significantly from the Index's methodology at that given time; and

3. If the change is consistent with the overall objective of the Index at that given time and the representation of the digital asset market as defined in the Index guidelines.

In the event of a proposed change to the underlying Index procedures or methodologies, stakeholders will be notified of the scope and potential impact of the proposed change.

4.4 Restatement Policy

Hashdex has several layers of oversight in place to ensure the Index is calculated correctly; however, in the event that a material error in the calculation of Index values is determined post-publication and distribution, all licensed funds and past funds who track or have tracked the Index in the past and who might have been impacted will be notified of the error and informed, if applicable, of the expected date of revision. Since not all errors in Index values will lead to or require a restatement, the following criteria will be used by IS to assess the necessity of further action and make a recommendation to the OB, which will ultimately have the final approval power for any restatement decision:

1. The magnitude of the error;

2. The dates on which the error took place and when it was eventually discovered;

3. The extent of its impact over the data record and the materiality of the affected data field;

4. The correlation between the Index and the tradable products;

5. The cost/benefit of issuing a restatement, taking into account the factors above and other factors, their relative impact and the costs related to a restatement; and

6. The impact of the restatement on tools used for the analysis of data related to the Index.

5. Exceptional Events and Circumstances

5.1 Supply Interruptions

In instances where circulating supply data is not available through the Reference Data Provider, the Index will calculate circulating supply directly by querying the relevant cryptographic distributed ledger of an Index constituent. Where it is impractical to calculate circulating supply of an Index constituent by querying the relevant cryptographic distributed ledger of such Index constituent, as determined by the IS, the circulating supply of an Index constituent may be gathered by taking a simple average of supply estimates listed on the Hashdex Core Exchanges. The circulating supply for all Index constituents is updated and taken into account in divisor adjustments during all reconstitutions and rebalances.

5.2 Hard Forks and Airdrops

Hard forks occur when the code for a digital asset is split to create a new protocol with different features or functionality. In doing so, a new scarce digital asset that is native to the new code base is created and holders of the original digital asset are typically awarded ownership of some proportion of the new digital asset. Airdrops occur when small amounts of digital assets are distributed to existing digital asset holders. Hard forks and airdrops will be treated as new digital assets, whereby the new digital asset will not be added

or considered within the Index until it independently meets the eligibility requirements of the Index as set forth in the above methodology.

5.3 Additional Events

In the event an unforeseen event or digital asset change that causes or can reasonably be expected to cause significant disruption to the Index, the IS will meet to discuss courses of action that may need to be taken and make recommendations to the OB. These actions can include but are not limited to digital asset additions, digital asset removals, adjustments of the constituents or their accompanying weights intra-quarterly, modifications of Index rules to include but not limited to data sourcing, Hashdex Core Exchanges, qualified custodians, Index formulas, reconstitution, and rebalancing criteria or timing.

Once recommendations have been made, the OB ultimately has the authority to approve the implementation of such change or other modifications. Any and all material changes to the Index rules will be publicly announced.

Appendix A

Criteria for Hashdex Core Exchanges

The Index Subcommittee is responsible for assessing and selecting which exchanges are eligible for designation as a Hashdex Core Exchange. At a minimum, to be considered eligible for designation as a Hashdex Core Exchange, an exchange must:

1. have documented procedures in place for compliance with Anti-Money Laundering (AML) and Know Your Customer (KYC) regulations; and

2. have existed for a minimum of 12 months.

If an exchange meets these standards, the Index Subcommittee will conduct further diligence to assess an exchange's eligibility for designation as a Hashdex Core Exchange. In the process of conducting diligence of the exchanges, the Index Subcommittee will consider additional criteria, including, but not limited to, an exchange's rules for admitting digital assets, its organizational and ownership structure, security history, and operational licenses.

Hashdex will publicly announce a list of current Hashdex Core Exchanges at least 15 days prior to each Reconstitution and Rebalance Announcement Day.

Appendix B

Qualified Custodian Eligibility Criteria

Custodians hold digital assets for safekeeping against theft and loss and ensure that digital asset transactions and trades are secure. Index constituents must be supported by custodians that are approved by Hashdex (each, a "Qualified Custodian"). Hashdex, in its sole discretion, selects the Qualified Custodians. In designating a custodian as a Qualified Custodian, Hashdex considers a variety of factors including, but not limited to, whether a custodian:

1. employs advanced security practices, which may include, but are not limited to, custody processes that utilize offline digital vaults (i.e., cold storage systems), physical and geographical distribution of stored assets, multifactor authentication, and private key segmentation;

2. provides segregated custody accounts by using unique digital asset addresses that can be independently verified and audited on their respective blockchains or distributed ledger nodes;

3. offers withdrawal processes for redemption and rebalancing that allow for the timely and secure transfer of digital assets;

4. has a documented disaster recovery program that ensures the continuity of operations in the event of a system failure;

5. provides at least one external audit report on their operational processes (e.g., a Service Organization Control 2 report) to Hashdex each year;

6. utilizes secure channels of communication with clients to ensure that client identities and sensitive information remains confidential; and

7. is licensed by a reputable and independent governing body (e.g., the U.S. Securities and Exchange Commission, the New York State Department of Financial Services, or other state, national, or international regulators), as can be ascertained by certain public data sources.

Hashdex does not guarantee the adequacy of any Qualified Custodian and will not be held liable for its selection of any Qualified Custodian.

At least 30 days prior to a Reconstitution and Rebalance Announcement Day, the Index Subcommittee will publish a list of Qualified Custodians. At least 15 days prior to a Reconstitution and Rebalance Announcement Day, the Index Subcommittee will publish a list of digital assets that are supported by the Qualified Custodians.[11]

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[11] For the initial Index constitution, qualified custodians are released at the time of Index constitution.

Any changes that affect the Qualified Custodians or the digital assets that they support (e.g., a loss of custody support for an Index Constituent) will not be reflected in the list of Qualified Custodians until the subsequent Reconstitution and Rebalance Announcement Day, except for in the case of exceptional events and with the approval of both the Index Subcommittee and the Oversight Board, as described in Section 5.3.

<h1 style="text-align:center">Appendix C</h1>

<p style="text-align:center">Hashdex Digital Assets Reference Prices Methodology</p>

Introduction

Index constituent daily price fixings are based on certain trading activity on the Hashdex Core Exchanges. Instead of calculating an Index constituent's price based only on transactions in U.S. dollars ("USD"), the HDARP methodology also calculates an Index constituent's price based on transactions in the two digital assets with the greatest trading volume on the Hashdex Core Exchanges (the "Reference Assets"). As of August 2018, the set of Reference Assets were Bitcoin and Ethereum. The set of Reference Assets are reassessed during the annual review of the Index by the Oversight Board and Index Subcommittee.

The HDARP methodology calculates the daily price fixing for Index constituents in USD. Index constituents' daily price fixings are calculated and published on Hashdex's website at 2:00:00 PM ET on each business day. For purposes of reconstituting and rebalancing the Index, each eligible digital asset's daily price fixing is calculated according to the same process as for calculating an Index constituent's daily price fixing.

The HDARP methodology considers any transactions (the "Relevant Transactions") between an Index constituent, the USD, and the Reference Assets (each pair, a "Market Pair") that occur from 10:00 to 11:00 AM ET on each business day (the "Pricing Window") on the Hashdex Core Exchanges. The Relevant Transactions must be reported by a Hashdex Core Exchange to the Pricing Subcommittee through such Hashdex Core Exchange's own application programming interfaces or through the application programming interfaces of a third party, to which Hashdex has paid a monthly subscription to collect data from the Hashdex Core Exchanges on Hashdex's behalf.

Daily Price Fixing Calculation

On each business day, the daily price fixing for an Index constituent is calculated based on the Relevant Transactions through a two-step process as set forth below.

<u>Step One: Calculation of Index Constituent's Price Against the Reference Assets and the USD</u>

An Index constituent's price is calculated against each of the Reference Asset's prices and against the USD, based on the Relevant Transactions in the corresponding Market Pair. All Index constituents will receive at least one and up to three prices against the USD and each of the Reference Assets, depending on whether there are Relevant Transactions in USD and each of the Reference Assets. Each Reference Asset's price is also calculated against the USD and the other Reference Asset. For any Index constituent, the price against the USD and against each of the Reference Assets is a volume weighted average of transaction prices, as determined by the formula below:

$$\overline{P}^*_{i|c} = \frac{\sum_{r \in R_{i|c}} V^r_{i|c} P^r_{i|c}}{V_{i|c}}, \text{ for all } c \in A \cup \{USD\}, \text{ where}$$

$R_{i|c}$ = Relevant Transactions for the pair (i, c) during the Pricing Window

$V^r_{i|c}$ = Volume of market pair (i, c) for the Relevant Transaction r

$V_{i|c} = \sum_{r \in R_{i|c}} V^r_{i|c}$

$P^r_{i|c}$ = Price of market pair (i, c) for the Relevant Transaction r

A = Set of Reference Assets

Thus, at the end of step one, up to three Index constituent prices will be produced, based on transactions in (i) USD, (ii) Bitcoin, and (iii) Ethereum. If Bitcoin or Ethereum are Index constituents, only two prices for such Index constituents would be produced (e.g., in the case of Bitcoin, a price in (i) USD and (ii) Ethereum).

Step Two: Conversion to USD

The Index constituent's prices against the Reference Assets determined above are converted to USD using the Reference Asset's price against the USD calculated above to yield a daily price fixing for an Index constituent in USD. For any Index constituent i, the daily price fixing is a volume weighted average of its (i) price against USD as calculated in Step One and its (ii) price against the Reference Assets (also calculated in Step One) converted to USD. The formula for volume weighting all price inputs to calculate the final price fixing for a given digital asset is below:

$$\overline{P}_{i|USD} = W_{i|USD}\overline{P}^*_{i|USD} + \sum_{a \in A} W_{i|a}\overline{P}^*_{i|a}\overline{P}^*_{a|USD}, \text{ where}$$

$W_{i|c} = \frac{V_{i|c}}{\sum_{k \in A \cup \{USD\}} V_{i|k}}$

a = Each Reference Asset

k = Each Reference Asset and the USD

Contingency Calculation Rules

Delayed Data and Missing Data

During the Pricing Window, if data regarding a Relevant Transaction is delayed or missing, such Relevant Transaction is disregarded from the calculation of the daily price fixing. If all Relevant Transaction data for an Index constituent during a Pricing Window is delayed or missing, no Relevant Transaction occurs on a

business day or no Relevant Transaction can be retrieved by the Pricing Subcommittee, an HDARP calculation failure occurs for that Business Day, as described below under "HDARP Calculation Failure."

<u>Erroneous or Potentially Erroneous Data</u>

The Pricing Subcommittee subjects all Relevant Transactions for a given Business Day to screening for erroneous and potentially erroneous data. Relevant Transactions flagged as erroneous or potentially erroneous for a given business day are disregarded in the calculation of the daily price fixing for that business day. If all Relevant Transactions are flagged as erroneous or potentially erroneous for a given business day, an HDARP calculation failure occurs for that business day.

<u>HDARP Calculation Failure</u>

If Hashdex is not able to provide a daily price fixing for one or more Index constituents by following the HDARP methodology, the Pricing Subcommittee will devise an alternative calculation method and announce such method to all relevant parties. The occurrence of any HDARP calculation failure will be reported to the Oversight Board.

If the Pricing Subcommittee cannot calculate an Index constituent's daily price fixing with an alternative calculation method, the daily price fixing for that business day will be the daily price fixing published on the previous business day.

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