

# Nasdaq Blockchain Economy Index<sup>SM</sup> Methodology

## Index Description

The Nasdaq Blockchain Economy Index is designed to measure the returns of companies that are committing material resources to developing, researching, supporting, innovating or utilizing blockchain technology for their proprietary use or for use by others.

## Index Calculation

The Nasdaq Blockchain Economy Index is a modified linear weighted index. The value of the Index equals the aggregate value of the Index share weights, also known as the Index Shares, of each of the Index Securities multiplied by each such security's Last Sale Price<sup>1</sup>, and divided by the divisor of the Index. The divisor serves the purpose of scaling such aggregate value to a lower order of magnitude which is more desirable for reporting purposes. The Index began on December 1, 2017, at a base value of 1,000.00.

The formula for index value is as follows:

$$\text{Aggregate Adjusted Market Value/Divisor}$$

The formula for the divisor is as follows:

$$(\text{Market Value after Adjustments/Market Value before Adjustments}) \times \text{Divisor before Adjustments}$$

Three versions of the Index are calculated in USD.

- The price return index (Nasdaq: RSBLCN) is ordinarily calculated without regard to cash dividends on Index Securities.
- The total return index (Nasdaq: RSBLCNT) reinvests cash dividends on the ex-date.
- The net total return index (Nasdaq: RSBLCNN) reinvests cash dividends on the ex-date and adjusts for an Index Security's country of incorporation withholding rate.

All Indexes reflect extraordinary cash distributions.

The Indexes are calculated during the trading day and are disseminated once per second. The Indexes are calculated five (5) days a week, Monday through Friday, starting by the earliest time zone Asia/Tokyo and close by the latest time zone America/New York in USD.

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<sup>1</sup> For purposes of this document, Last Sale Price refers to the last regular way trade reported on such security's Index Market. The Index Market is the listing market for which prices are received and used by Nasdaq in the Index calculation and generally will represent the most liquid trading market of the Index Security. If a security does not trade on its Index Market on a given day or the Index Market has not opened for trading, the most recent last sale price from the Index Market (adjusted for corporate actions, if any) is used. For securities where Nasdaq is Index Market, the Last Sale Price may be the Nasdaq Official Closing Price (NOCP) when Nasdaq is closed.

## **Eligibility**

Index eligibility is limited to specific security types only. The security types eligible for the Index include common stocks, ordinary shares, depositary receipts (both American and Global), depositary shares, shares of beneficial interest or limited partnership interests and tracking stocks.

## **Eligibility Criteria**

To be included in the Index, a security must meet the following criteria:

- be classified as a company in the Blockchain Economy as determined by the Reality Shares Index Committee based on multiple sources, including industry associations, journal posts, data searches, news articles, and filings (including for patent).
- have a minimum worldwide market capitalization of \$200 million;
- have a minimum six-month average daily dollar trading volume of \$1 million;
- be listed on an Index-Eligible Global Stock Exchange;
- one security per issuer is permitted<sup>2</sup>;
- may not have entered into a definitive agreement or other arrangement which would likely result in the security no longer being Index eligible; and
- may not be issued by an issuer currently in bankruptcy proceedings.

## **Index-Eligible Global Stock Exchanges**

Global stock exchanges are reviewed periodically for eligibility. In general, a global exchange will be deemed ineligible if securities cannot be readily obtained either due to foreign investment restrictions or otherwise.

## **Stock Selection**

Securities meeting the eligibility criteria are then evaluated as follows:

- All securities classified as participating in the Blockchain Economy by the Reality Shares Index Committee receive a Blockchain Score <sup>SM</sup>. The Committee utilizes multiple sources, including industry associations, journal posts, data searches, news articles, and filings (including for patent) to classify securities as participating in the Blockchain Economy. Blockchain Scores are calculated using seven factor component scores, assigned based on Index methodology rules that stipulate a maximum value for each factor, and weight each factor based on its relative importance to the other factors. The Blockchain Score for a potential constituent is the weighted sum of the individual factor scores.
  1. Role in Blockchain Ecosystem – Potential constituents are awarded scores commensurate with their level of active effort in the blockchain economy, categorized as one of the following: Investor; Adopter; Advisor; Supplier; and Developer.
  2. Blockchain Product Stage – Potential constituents are assigned scores based on their stage of blockchain product development or utilization, categorized as one of the following: Planning stage; Testing stage; and Growth stage.

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<sup>2</sup> If an issuer has multiple securities, the security with the highest dollar trading volume will be selected for possible inclusion into the Index.

3. Blockchain Economic Impact – Potential constituents are assigned scores based on the expected economic impact of their blockchain utilization/involvement, categorized as one of the following: Cost reduction; Revenue maximization; and Improved productivity.
  4. Blockchain Institute Membership – Potential constituents are assigned scores based on membership in blockchain institutes and consortiums (including Hyperledger, R3, and the Enterprise Ethereum Alliance).
  5. Research & Development Expenditure – Potential constituents are assigned scores based on the level of R&D expenditure as a percentage of total revenue.
  6. Filings – Potential constituents are assigned scores based on the number of public filings and announcements made in reference to blockchain technology.
  7. Innovations – Potential constituents are assigned scores based on their level of blockchain innovation, including the number of patent applications related to blockchain development.
- All securities with a Blockchain Score  $\geq 50$  are deemed eligible for inclusion as of the index evaluations.
  - The number of constituents in the Index is variable and dependent on the level of filtering resulting from the selection process. However, the Index will have no less than 50 and no more than 100 constituents. If more than 100 constituents meet the selection criteria, the top 100 (based on Blockchain Score) are selected for inclusion in the Index.

## **Index Evaluation**

The Index Securities are evaluated semi-annually in March and September. The above Eligibility Criteria are applied using market data after the close of trading on the third Friday in March and September (reference date).

For the March evaluation, if new securities are added, the index weights are rebalanced. Otherwise, no changes are made to the securities in the index. Security additions and deletions are made effective, when applicable, after the close of trading on the fifth trading day following the reference date in March.

For the September evaluation, whether or not new securities are added to the index, weights are rebalanced. Security additions and deletions are made effective after the close of trading on the fifth trading day following the reference date in September.

Additionally, if at any time during the year other than the Evaluation, an Index Security no longer meets the Eligibility Criteria, or is otherwise determined to have become ineligible for inclusion in the Index, the security is removed from the Index and is not replaced. In all cases, a security is removed from the Index at its Last Sale Price. If, however, at the time of its removal the Index Security is halted from trading on its primary listing market and an official closing price cannot readily be determined, the Index Security may, in Nasdaq's discretion, be removed at a zero price. The zero price will be applied to the Index Security after the close of the market but prior to the time the official closing value of the Index is disseminated, which is ordinarily 17:16:00 ET.

## **Index Maintenance**

Index Share changes are not made during the quarter however changes arising from stock dividends and stock splits are made to the Index on the evening prior to the effective date of such corporate action. In the case of certain spin-offs or rights issuances, the price of the Index Security is adjusted and a corresponding adjustment is made to the Index Shares such that the weight of the Index Security does not change as a result of the action. However, for a spin-off event, if there is a no when-issued trading available for the spin-co security, the spin-co security may be added to the index at a zero value. In this case, the spin-co security will be removed from the Index after two full days of trading.

A special cash dividend announced by the listing exchange, will result in an adjustment to the Last Sale Price for the special amount distributed and a corresponding adjustment to the Index Shares of an Index Security prior to market open on the ex-date such that the weight of the Index Security will not change as a result of the action. A special dividend may also be referred to as extra, extraordinary, non-recurring, one-time, unusual, etc.

Ordinarily, whenever there is a change in an Index Security as noted above, the divisor is adjusted to ensure that there is no discontinuity in the value of the Index which might otherwise be caused by any such change. All changes are announced in advance and are reflected in the Index prior to market open on the Index effective date.

## **Index Rebalancing**

Indicative starting weights are calculated using the Blockchain Score as follows:

$$W_i = (B_i / \sum_{i=1}^n B_i)$$

$W_i$  = Weighting of constituent  $i$

$n$  = Number of constituents

$B_i$  = Blockchain Score of constituent  $i$

No single constituent can represent more than 15% of the total weight of the Index. Any excess weighting will be redistributed amongst the remaining Index constituents. Weights for all securities greater than or equal to 5% cannot exceed 50% of the total weight of the Index.

Nasdaq may, from time to time, exercise reasonable discretion as it deems appropriate in order to ensure Index integrity.

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