



INDEX METHODOLOGY

NASDAQ-100 HIGH BETA™ INDEX

NDXHB™

INDEX DESCRIPTION

The Nasdaq-100 High Beta Index is designed to track the performance of the top quartile of Nasdaq-100 companies with the highest intrinsic beta relative to the Nasdaq-100 Index® (NDX®).

SECURITY ELIGIBILITY CRITERIA

Security universe index

A security must be included in the Nasdaq-100 Index® (NDX®) as of the Index Reconstitution effective date. Please refer to the NDX® methodology for further information.

Multiple classes of securities

One security per company is permitted. If a company has multiple otherwise-eligible securities, one of which is an Index Security as of the Reconstitution reference date, only that security may be eligible; otherwise, only the security with the highest three-month average daily traded value may be eligible.

Seasoning eligibility

To be eligible for initial inclusion, a security must have been listed and available for trading on an eligible exchange for at least 60 full calendar months, not including the month of initial listing. For seasoning purposes, eligible exchanges include Nasdaq (Nasdaq Global Select Market, Nasdaq Global Market, or Nasdaq Capital Market), NYSE, NYSE American and CBOE BZX.

For example, to be considered for inclusion at the December Reconstitution, a security must have been listed and available for trading on an eligible exchange no later than the last trading day of November from five years prior, with seasoning occurring over the following 60 months.

The trading history of a SPAC prior to its combination with an operating company will not count towards satisfying the seasoning requirement, regardless of whether the SPAC is determined to be the acquirer or the target in the transaction.

Other eligibility criteria

If, at reconstitution, Nasdaq becomes aware that an issuer or security will soon undergo a fundamental change that makes it ineligible, Nasdaq will generally remove the security from consideration. This includes entering into a definitive merger or acquisition agreement or other pending arrangement that would make it ineligible for Index inclusion, or a filing of bankruptcy or similar protection from creditors, or other events as described in Section 3 of **Corporate Actions and Events Manual – Equities**.

CONSTITUENT SELECTION

Constituent selection process

The companies evaluated in the selection process are based on the index composition of the base universe, the Nasdaq-100 Index® (NDX®), as of the Rebalance effective date. Please refer to the NDX® methodology for further information.

As of the Reconstitution reference date, the companies in the top quartile of the Nasdaq-100 Index® (NDX®) based on Intrinsic Beta, are selected for inclusion.

Intrinsic Beta is defined as the median of rolling 90-day betas over a five-year period. The rolling 90-day beta can be mathematically expressed as:

$$\beta_{i_t} = \frac{Cov(r_i, r_m)}{Var(r_m)}$$

Where:

- β_{i_t} = 90-day daily Beta of security i at time t
- Cov = Covariance
- Var = Variance
- r_i = Daily security returns over trailing 90-days
- r_m = Daily NDX returns over trailing 90-days

And

$$Intrinsic\ Beta_i = median(\{\beta_{i_{t=0}}, \beta_{i_{t-1}}, \beta_{i_{t-2}} \dots, \beta_{i_{t-1170}}\})$$

Where:

- $Intrinsic\ Beta_i$ = Intrinsic Beta of security i as of the Reconstitution reference date
- t = A trading day over the trailing five-year lookback period

CONSTITUENT WEIGHTING

Constituent weighting scheme

The Index is a modified market capitalization-weighted index.

Constituent weighting process

Each Index Security's initial weight is determined by dividing the Index Security's market capitalization by the aggregate market capitalization of all Index Securities.

Weight Adjustment

Initial Index weights are adjusted to reduce excessive concentration. The weight adjustment is described below:

- Step 1: Raise each Index Security's initial index weight to the power, P , where P is a value between 0 and 1 (Adjusted Initial Weight). Please see **Weight Constraints** below.
- Step 2: Divide the Adjusted Initial Weight from Step 1 by the aggregate Adjusted Initial Weight of all Index Securities.

Final weights are those determined from Step 2 above.

Weight Constraints

The exact power, P , is determined through an iterative process where weights are re-evaluated by reducing P in increments of 0.0001. The power, P , is incrementally reduced until the following weighting constraints have been met:

- No single security may exceed 10%
- Aggregate weights of securities greater than 4.75% does not exceed 50%

For additional information about index weighting, see **Nasdaq Index Weight Calculations**.

INDEX CALENDAR

Reconstitution & Rebalancing schedule

Reconstitution Frequency	Quarterly
Rebalance Frequency	Quarterly
Reconstitution Reference Dates	Last trading day of February, May, August, and November, respectively
Reconstitution Announcement Dates	After the close on the second Friday in March, June, September, and December
Reconstitution Effective Dates	At market open on the first trading day following the third Friday in March, June, September, and December
Rebalance Reference Dates	Last trading day of February, May, August, and November, respectively
Rebalance Announcement Dates	After the close on the second Friday in March, June, September, and December
Rebalance Effective Dates	At market open on the first trading day following the third Friday in March, June, September, and December

Holiday schedules

The Indexes are calculated Monday through Friday, except on days when the US markets are closed.

Index calculation and dissemination schedule

The Indexes are calculated during the trading day based on the Last Sale Price and are disseminated once per second from 09:30:01 to 17:16:00 ET. The closing value of the indexes may change up until 17:15:00 ET due to corrections to the Last Sale Price of the Index Securities.

INDEX MAINTENANCE

Deletion policy

If, at any time other than an Index Reconstitution, Nasdaq determines that an Index Security has or will undergo a fundamental alteration that would make it ineligible for Index inclusion, the Index Security is removed as soon as practicable. Such alternations may include a merger, acquisition or other major corporate event that would otherwise adversely affect the integrity of the Index.

Replacement policy

Index securities deleted at any time during the year other than the Index Reconstitution(s) are not replaced.

Corporate actions

In the interim periods between scheduled index reconstitution and rebalancing events, individual Index securities may be the subject to a variety of corporate actions and events that require maintenance and adjustments to the Index. The specific treatment of each type of corporate action or event is described in **Nasdaq Corporate Actions and Events Manual – Equities**, which is incorporated herein by reference.

In certain cases, corporate actions and events are handled according to the weighting scheme or other index construction techniques employed. Wherever alternate methods are described, the Index will follow the “Market Cap Corporate Action Method.”

Index share adjustments

Other than as a direct result of corporate actions, the Index does not normally experience share adjustments between scheduled Index rebalance and reconstitution events.

ADDITIONAL INFORMATION

Announcements

Nasdaq announces Index-related information via the Nasdaq Global Index Watch (GIW) website at <http://indexes.nasdaqomx.com>.

For more information on the general Index Announcement procedures, please refer to the **Nasdaq Index Methodology Guide**.

Unexpected market closures

For information on Unexpected Market Closures, please refer to the **Nasdaq Index Methodology Guide**.

Calculation types

For information on the Index calculation types as well as the mathematical approach used to calculate the Index(es), please refer to the **Nasdaq Index Policies & Procedures: Calculation Manual – Equities & Commodities**.

Recalculation and restatement policy

For information on the Recalculation and Restatement Policy, please refer to the **Nasdaq Index Recalculation Policy**.

Data sources

For information on data sources and the classification of dividends and associated tax rates, please refer to the **Nasdaq Index Methodology Guide**.

Contact information

For any questions regarding an Index, please contact the Nasdaq Index Client Services team at indexservices@nasdaq.com.

Index dissemination

Index values and weightings information are available through Nasdaq Global Index Watch (GIW) website at <https://indexes.nasdaqomx.com/> as well as the Nasdaq Global Index FlexFile Delivery Service (GIFFD) and Global Index Dissemination Services (GIDS). Similar to the GIDS offerings, Genium Consolidated Feed (GCF) provides real-time Index values and weightings for the Nordic Indexes.

For more detailed information regarding Index Dissemination, see the **Nasdaq Index Methodology Guide**.

Website

For further information, please refer to Nasdaq GIW website at <https://indexes.nasdaqomx.com/>.

FTP and dissemination service

Index values and weightings are available via FTP on the Nasdaq Global Indexes FlexFile Delivery Service (GIFFD). Index values are available via Nasdaq's Global Index Dissemination Services (GIDS).

GOVERNANCE

All Nasdaq Indexes are managed by the governance committee structure and have transparent governance, oversight, and accountability procedures for the index determination process. For further details on the Index Methodology and Governance overlay, refer to the **Nasdaq Index Methodology Guide**.

GLOSSARY OF TERMS AS USED IN THIS DOCUMENT

For the glossary of key terms, refer to the **Nasdaq Index Methodology Guide**.

DISCLAIMER

Nasdaq may, from time to time, exercise reasonable discretion as it deems appropriate in order to ensure Index integrity, including but not limited to, quantitative inclusion criteria. Nasdaq may also, due to special circumstances, if deemed essential, apply discretionary adjustments to ensure and maintain the high quality of the index construction and calculation. Nasdaq does not guarantee that any Index accurately reflects future market performance.

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