

# NASDAQ Chaikin Power Indexes<sup>SM</sup> Methodology

## Index Description

NASDAQ Chaikin Power Indexes are rules-based, quantitatively enabled indexes designed to augment existing Index benchmarks based on the Chaikin Investment Strategy implemented through the Chaikin Power Gauge. Each NASDAQ Chaikin Power Index involves the Chaikin Power Gauge overlay on a NASDAQ Index including the US Large Cap, US Small Cap, and US Dividend Achievers.

## Index Calculation

The NASDAQ Chaikin Power Indexes are equal-weighted indexes. 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. If trading in an Index Security is halted on its primary listing market, the most recent Last Sale Price for that security is used for all index computations until trading on such market resumes. Likewise, the most recent Last Sale Price is used if trading in a security is halted on its primary listing market before the market is open. The Indexes began on April 1, 2014 with a base value of 1000.00.

The formula for index value is as follows:

Aggregate Adjusted Market Value/Divisor

The formula for the divisor is as follows:

(Market Value after Adjustments/Market Value before Adjustments) X Divisor before Adjustments

Two versions of each Index are calculated – a price return index and a total return index (See Appendix A for a List of Index Symbols and Names).

- The price return index is ordinarily calculated without regard to cash dividends on Index Securities.
- The total return index reinvests cash dividends on the ex-date.

The Indexes are calculated and disseminated once per second from 9:30:01 to 17:16:00 Eastern Time (ET) in USD. 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.

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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 US Large and Small Cap Indexes include common stocks and REITs. The security types eligible for the US Dividend Achievers Index include common stocks, limited partnership interests, shares or units of beneficial interest and shares of limited liability companies.

## **Eligibility Criteria**

### **NASDAQ Chaikin Power US Large Cap Index**

To be eligible for inclusion in the NASDAQ Chaikin US Large Cap Index a security must meet the following criteria:

- be a member of the [NASDAQ US 300 Index \(NQUSL300\)](#);
- have a minimum three month average daily dollar trading volume of \$1 million;
- have a minimum market capitalization of \$150 million;
- one security per issuer is permitted (if an issue has multiple securities, the security with the highest three-month average daily dollar trading volume will be selected for possible inclusion in the indexes);
- 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.

### **NASDAQ Chaikin Power US Small Cap Index**

To be eligible for inclusion in the NASDAQ Chaikin US Small Cap Index a security must meet the following criteria:

- be a member of the [NASDAQ US 1500 Index \(NQUSS1500\)](#); and
- have a minimum three month average daily dollar trading volume of \$1 million;
- have a minimum market capitalization of \$150 million;
- one security per issuer is permitted (if an issue has multiple securities, the security with the highest three-month average daily dollar trading volume will be selected for possible inclusion in the indexes);
- 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.

### **NASDAQ Chaikin Power US Dividend Achievers Index**

To be eligible for inclusion in the NASDAQ Chaikin US Dividend Achievers Index a security must meet the following criteria:

- be a member of the [NASDAQ US Broad Dividend Achievers Index \(DAA\)](#);
- one security per issuer is permitted (if an issue has multiple securities, the security with the highest three-month average daily dollar trading volume will be selected for possible inclusion in the Index);
- 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 Evaluation

Securities for each Index are evaluated annually based on the Chaikin Power Gauge model, a 20 factor model. The investment universe includes the 3000 largest U.S. listed equities ("Universe"). The Chaikin Power Gauge ratings and the Shareholder Yield scores (described in more detail below) are calculated annually in March for each member of the Universe based on market data through the end of February.

Each security receives a score for each of the 20 factors in the Chaikin Power Gauge Model. The factors are grouped into 4 groups where the scores are weighted by the group weight. The mapping of the factors to the groups and the weights on each group are as follows:

### Value (Financials) (35%)

- Long Term Debt to Equity Ratio: Total long - term debt divided by total common equity, latest quarter
- Price to Book Value Ratio: Current price divided by book value per share, latest quarter
- Return on Equity: Income available to common stockholders as a percentage of total common equity, trailing 12 months
- Price to Sales Ratio: Market Cap + long term debt divided by sales, trailing 12 months
- Free Cash Flow: Net free cash flow relative to Market Cap, latest quarter

### Technical (15%)

- Price Trend: Ratio of closing price to 200 - day exponential average
- Price Trend Rate of Change: 42 - day change in divergence from 200 - day exponential average
- Chaikin Money Flow: Chaikin Money Flow persistency of accumulation , 6 months
- Relative Strength vs. Market: 6-month price performance relative to S&P500
- Volume Trend: Ratio of 30 - day to 90 - day average daily volume

### Growth (Earnings) (20%)

- Earnings Growth: Weighted average of 3 - 5 year EPS growth
- Earnings Surprise: Weighted average of recent quarterly EPS surprises
- Earnings Trend: EPS %change, trailing 12 months
- Projected Price to Earnings Ratio: Current price / mean analyst EPS estimate, next fiscal year
- Earnings Consistency: EPS consistency, recent and projected fiscal years

### Sentiment (Experts) (30%)

- Earnings Estimate Trend: 13 - week change, mean analyst EPS estimate , next fiscal year
- Short Interest: Short Interest divided by shares outstanding, previous month
- Insider Activity: Net shares purchased by company insiders, previous 6 months
- Analyst Ratings: 4 - week change, average analyst rating
- Industry Relative Strength: 6 - month performance of stock's Industry relative to market

Additionally, the Shareholder Yield Model is used for the Dividend Achievers Index and is based on the following factors:

- Dividends Paid
- Net Long Term Debt Issuance (Long Term Debt Issued-Long Term Debt Reduced)
- Net share buybacks (Equity Shares Purchased-Equity Shares Issued)
- Market Capitalization

The Shareholder Yield Model score is calculated as follows:

$$\frac{\text{Dividends Paid} + \text{Net Long Term Debt Issuance} + \text{Net share buybacks}}{\text{Market Capitalization}}$$

### **NASDAQ Chaikin Power US Large Cap Index**

All eligible securities in the NASDAQ US 300 Index are evaluated first using a risk filter that eliminates the riskiest third of eligible securities (with risk defined in terms of a proprietary metric that combines Beta, the measure of a stock's volatility relative to the overall market, and Standard Deviation, a measure of a stock's inherent volatility). From this risk-restricted subset (typically approximating 200 stocks), the 100 stocks having the highest scores as per the Chaikin Power Gauge rating, a 20-factor model with Value, Growth, Technical and Sentiment factors, are identified for preliminary inclusion in the Index that meet all other eligibility criteria. All preliminarily eligible stocks are selected for final inclusion in the index unless the Index's Industry Constraint, which requires that each Industry's weight within the Index be no less than the targeted minimum (approximately 80 percent) and no more than the targeted maximum (approximately 120 percent) of the Nasdaq US 300 Index (NQUSL300) Industry weight. Where necessary, to correct any violation(s) of the Industry Constraints, an optimization algorithm is used to select the 100 eligible stocks.

### **NASDAQ Chaikin Power US Small Cap Index**

All eligible securities in the NASDAQ US 1500 Index are evaluated first using a risk filter that eliminates the riskiest third of eligible securities (with risk defined in terms of a proprietary metric that combines Beta, the measure of a stock's volatility relative to the overall market, and Standard Deviation, a measure of a stock's inherent volatility). From this risk-restricted subset (typically approximating 1000 stocks), the 500 stocks having the highest scores as per the Chaikin Power Gauge rating, a 20-factor model with Value, Growth, Technical and Sentiment factors, are identified for preliminary inclusion in the Index that meet all other eligibility criteria. All preliminarily eligible stocks are selected for final inclusion in the index unless the Index's Industry Constraint, which requires that each Industry's weight within the Index be no less than the targeted minimum (approximately 80 percent) and no more than the targeted maximum (approximately 120 percent) of the Nasdaq US 1500 Index (NQUSS1500) Industry weight. Where necessary, to correct any violation(s) of Industry Constraints, an optimization algorithm is used to select the 500 eligible stocks.

### **NASDAQ Chaikin Power US Dividend Achiever Index**

All securities in the NASDAQ US Broad Dividend Achievers Index are evaluated using the Chaikin Power Gauge rating and the Shareholder Yield Model. To be included in the Index, a security must have a Shareholder Yield Rank of greater than 50 (meaning its rating is better than 50% of the securities in the Universe) AND a Price to Sales Ratio less than 2 AND a Power Gauge ranking of greater than 28 (meaning its rating is better than 28% of the securities in the Universe). The resulting Index will typically consist of 50 to 65 Index securities. There are no sector constraints placed on the Index.

Security additions and deletions are made effective after the last trading day in March based on market data as of the end of February.

Additionally, if at any time during the year other than the Evaluation, an Index Security no longer meets the Index Eligibility Criteria, or is otherwise determined to have become ineligible for continued inclusion in the Index, the security is removed from the Index and will not be 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 outside of the evaluation and rebalancing; 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.

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 or a change to the price of an Index Security due to spin-offs, rights issuances or special cash dividends as mentioned 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**

The Index employs an equal-dollar weighting methodology such that each security's Index market value is rebalanced to an equal-dollar value corresponding to an equal percent weight of the Index's aggregate market value on an annual basis. Index Shares are calculated by dividing this equal-dollar value for each Index Security by the corresponding last sale price of the security at the close of trading on the last trading day in March.

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

## Appendix A – Index Names and Symbols

<b>Index Symbol</b>	<b>Index Name</b>
NQULCHK	NASDAQ Chaikin Power US Large Cap Index
NQULCHKT	NASDAQ Chaikin Power US Large Cap Total Return Index
NQUSCHK	NASDAQ Chaikin Power US Small Cap Index
NQUSCHKT	NASDAQ Chaikin Power US Small Cap Total Return Index
NQDACHK	NASDAQ Chaikin Power US Dividend Achievers Index
NQDACHKT	NASDAQ Chaikin Power US Dividend Achievers Total Return Index

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