



DORSEY WRIGHT MOMENTUM PLUS INDEX FAMILY METHODOLOGY

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1. INTRODUCTION

The Dorsey Wright Momentum Plus Index Family (“Indexes”) selects securities based on individual stock momentum plus a fundamental factor (value, dividend yield or volatility). Each security in the Index must pass minimum momentum requirements and greater weights are given to securities with better factor scores.

[Appendix A](#) includes a table of index names, symbols and further descriptions on each index.

2. SECURITY ELIGIBILITY

2.1 OVERVIEW OF SELECTION CRITERIA FOR THE INDEXES

To be eligible for inclusion in the DWA Momentum Plus Low Volatility (DWAMLV), DWA Momentum Plus Dividend Yield (DWAMY) and the DWA Momentum Plus Value (DWAMV), an Index Security must meet the following criteria:

- + be a member of the NASDAQ US Large Mid Cap Index (NQUSBLM);
- + stocks that have had announced buyout offers may be removed from the eligible universe even if they remain in the NASDAQ US Large Mid Cap Index;
- + have a minimum average daily dollar volume of \$1 million for 30 day period prior to evaluation;
- + one security per issuer is permitted. If an issuer has multiple securities, the security selected for possible inclusion into the Index will be based on DWA’s proprietary screening;
- + 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- + may not have annual financial statements with an audit opinion that is currently withdrawn.

All securities in the Index universe are ranked using a proprietary relative strength (momentum) measure. Each security’s score is based on intermediate and long term price movements relative to a representative market benchmark. The Index is rebalanced and reconstituted at the end of each calendar quarter. Approximately the top 50 securities are selected for the Index. The Index weights are determined by the scores of each security in the Index. Securities with higher scores receive larger weights in the index. There are no sector constraints placed on the Index.

- + **DWA Momentum Plus Low Volatility:** The eligible securities are assigned a volatility score based on the daily percentage price changes over the trailing year. The 50 securities with the lowest volatility scores are selected for the Index. The securities are weighted by the inverse of their trailing volatility.
- + **DWA Momentum Plus Dividend Yield:** The eligible securities are ranked based on their current dividend yield. The 50 securities with the highest current dividend yields are selected for the Index. The securities are weighted by their dividend yields.
- + **DWA Momentum Plus Value:** Securities are ranked on four value metrics: Price to Sales, Price to

Book, Price to Earnings and Price to Free Cash Flow. Each metric is scored individually and a percentile rank. A combined value rank is calculated by averaging the percentile scores for the individual metrics. A security must have values for a minimum of 3 of the 4 metrics. Any security with fewer than 3 scores is excluded. The combined score is taken by averaging the metrics having percentile scores (either 3 or 4 scores). No penalty is given to securities having only 3 of the 4 metrics. The 50 securities with the highest combined value scores are selected for the Index. The securities are weighted by their final combined value score.

3. INDEX CALCULATIONS

The Indexes are modified market capitalization weighted indexes. Three versions of each of the Indexes are calculated: Price Return Index, Gross Total return Index and a Net Total Return Index. The Price Return Index is ordinarily calculated without regard to cash dividends on Index Securities. The Gross Total Return Index reinvests cash dividends in the Index on the ex-date. The dividend is reinvested in all the Index Securities proportionally to their respective Index weights. The Net Total Return Index reinvests cash dividends after deduction of non-resident withholding tax rate who do not benefit from double taxation treaties. An Index Security's withholding tax rate is based on the general tax rate of the Index security's country of incorporation. All Index versions reflect extraordinary cash distributions. The Indexes began on July 2, 2018 at a base value of 1000.00.

3.1 LAST SALE PRICE

The Last Sale Price refers to the closing price reported on each Index Security's Index Market. The Index Market is the Index eligible stock market for which the Index Security's 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 an Index 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 the Index Market, the Last Sale Price may be the Nasdaq Official Closing Price (NOCP) when Nasdaq is closed.

If an Index Security is removed from an Index, it will ordinarily be removed at its Last Sale Price. If, however, at the time of its removal the Index Security is halted from trading on its Index Market and a Last Sale Price cannot readily be determined, the Index Security may, at Nasdaq's discretion, be removed at a price of \$0.00000001. This price will be applied to the Index Security after the close of all the trading markets in the Index but prior to the time the official closing value of the Index is disseminated.

3.2 FOREIGN EXCHANGE RATE

The Indexes uses the WM Company, Closing Spot Rates at 16:00:00 UK time in the calculation of the closing Index Values. SIX Financial Information Intraday Spot Rates are applied to the real time Index calculations during the trading day.

3.3 INDEX SHARES

The Index Shares value is the number of shares in the Index for an Index Security.

3.4 INDEX SECURITY MARKET VALUE AND INDEX MARKET VALUE

The Index Security Market Value is the Last Sale Price of the Index Security multiplied by its Index Shares, converted into the Index currency. The Index Market Value is the aggregate of each of the Index Security's Market Value.

3.5 PRICE RETURN DIVISOR

The Divisor serves the purpose of scaling an Index Market Value to a lower order of magnitude which is recommended for reporting purposes. The Divisor is adjusted to ensure that changes in Index Securities either by corporate actions or index participation occurring outside of trading hours do not affect the value of the Index. All Divisor changes occur after the close of Index Security markets contained in the Index.

The Price Return Index Divisor for day t is calculated as the ratio of the Start Of Day (SOD) market value and the previous day index value as follows:

$$\text{Price Return Index Divisor}_t = \frac{\text{Index SOD Market Value}_t}{\text{Index Value}_{t-1}}$$

3.6 PRICE RETURN INDEX VALUE CALCULATION

The Price Return Index value reflects changes in market value of Index Securities during the trading day and is calculated without regard to ordinary cash dividends but includes special dividends. The formula is as follows:

$$\text{Price Return Index}_t = \frac{\text{Index Market Value}_t}{\text{Index Divisor}_t}$$

3.7 GROSS TOTAL RETURN INDEX

The Gross Total Return Index value reflects ordinary cash and special dividends and the formula is as follows:

$$\text{Gross Total Return Index}_t = \text{Gross Total Return Index}_{t-1} \times \frac{\text{Price Return Index}_t + \text{IDP}}{\text{Price Return Index}_{t-1}}$$

Gross Total Return Index_t = the value of the Gross Total Return Index on current day

Gross Total Return Index_{t-1} = the previous day's closing Gross Total Return Index value

Price Return Index_t = the value of the Price Return Index on current day

Price Return Index_{t-1} = the previous day's closing Price Return Index value

$$\text{IDP (Index Dividend Points)} = \frac{\text{Index Dividend Market Value}_t}{\text{Price Return Index Divisor}_t}$$

Index Dividend Market Value_t = sum of the Index Security Dividend Market Values (SOD or EOD) for all Index Securities on current day

Index Security Dividend Market Value_t = dividend per share, for Index Security with ex-dividend date on the current day, multiplied by the Index Shares of that Index Security multiplied by *Fx rate_{t-1}*

Fx rate_{t-1} is the previous day's WM Company, Closing Spot Rates at 16:00:00 UK

3.8 NET TOTAL RETURN INDEX

The Net Total Return Index value reflects ordinary cash and special dividends adjusted for withholding tax rates (WTR as defined for each country is found in Appendix D and the formula is as follows):

$$\text{Net Total Return Index}_t = \text{Net Total Return Index}_{t-1} \times \frac{\text{Net Price Return Index}_t + \text{NetIDP}_t}{\text{Net Price Return Index}_{t-1}}$$

Net Total Return Index_t = the value of the Net Total Return Index on current day

Net Total Return Index_{t-1} = the previous day's closing Net Total Return Index value

Net Price Return Index_t = the value of the Net Price Return Index on current day

Net Price Return Index_{t-1} = the previous day's closing Net Price Return Index value

$$\text{Net Price Return Index}_t = \frac{\text{Net Price Return Index Market Value}_t}{\text{Net Price Return Index Divisor}_t}$$

Net Price Return Index value is not publically distributed. It is calculated only as the basis for the Net Total Return Index.

$$\text{Net IDP (Net Index Dividend Points)} = \frac{\text{Index Net Dividend Market Value}_t}{\text{Net Price Return Index Divisor}_t}$$

Net Index Dividend Market Value_t = sum of the Security Dividend Market Values (SOD or EOD) adjusted for withholding tax rate (WTR) for all Index Securities on current day

Net Index Security Dividend Market Value_t = dividend per share adjusted for withholding tax rate (WTR) for Index Security with ex-dividend date on the current day multiplied by the Index Shares of that Index Security multiplied by *Fx rate_{t-1}*

Fx rate_{t-1} is the previous day's WM Company, Closing Spot Rate at 16:00:00 UK

4. INDEX DISSEMINATION

The Index Values for the Indexes are calculated five (5) days a week, Monday through Friday, starting by the earliest time zone, Asia/Tokyo, and closed by the latest time zone, America/New York, in United States Dollars (USD).

5. INDEX MAINTENANCE

5.1 INDEX REBALANCING

The Indexes employ a modified market capitalization weighting methodology. Quarterly, the Indexes are rebalanced by weighting each Index Security by their factor score as outlined above.

The weights of the Index Securities are determined at the close of the sixth business day before the third Friday of each January, April, July and October. Each Index Security's weight is then multiplied by \$1 trillion. The market capitalization of each Index Security is then divided by the closing price of the sixth business day before the third Friday of January, April, July and October to determine Index Shares. The changes are effective after trading on the third Friday of January, April, July and October. The determination of weights for Index Securities and the effective date of Index changes are both subject to US exchange holidays. For example, if the sixth business day before the third Friday of an evaluation month is a US exchange holiday, then the prior trading day will be used to determine weights of Index Securities.

5.2 INDEX SECURITY CHANGES

If at any time during the year, other than a Quarterly Evaluation, an Index Security no longer meets the Eligibility Criteria or is otherwise determined to have become ineligible for inclusion in the Index(es), the Index Security is removed from its Index and is not replaced. Index Securities will be removed at their Last Sale Price in accordance with Section 3.1 Last Sale Price, adjusted by the WM Company, Closing Spot Rate.

In the case of mergers and acquisitions, the Index Security will be removed the day following the shareholder vote or the expected expiration of the tender offer provided the acquisition is not contested. In the event the acquisition is contested, the deletion will occur once results have been received that indicate the acquisition will likely be successful. If the approval is by written consent, then the removal will occur as soon as reasonably practical.

5.2.1 BANKRUPTCY

If a company files for bankruptcy, the Index Security will be removed from the Index as soon as practicable thereafter. The value of the Index Security will be considered \$0.00000001 if no other applicable price can be observed on the Index Market.

5.3 INDEX SHARE CHANGES

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 actions. 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.

6. CORPORATE ACTIONS

The following Corporate Actions will be made effective in the Index on the ex-date. If there is no ex-date announced by the Index Exchange, there will be no adjustment to the Index as a result of a Corporate Action.

6.1 STOCK SPLIT AND STOCK DIVIDEND

A stock split and stock dividend is the action of an Index Security increasing its Index Shares and decreasing the par value in proportion. There is no flow of capital into or out of the company. The number of Index Shares increases but the market capitalization of the company remains unchanged.

The price of the Index Security is adjusted downward to reflect the ratio of a stock split and stock dividend and a corresponding inverse adjustment to the Index Shares is made.

6.2 REVERSE STOCK SPLIT

A reverse stock split is the action of an Index Security decreasing its Index Shares and increasing the par value in proportion. There is no flow of capital into or out of the company. The number of Index Shares decreases but the market capitalization of the company remains unchanged.

The price of the Index Security is adjusted upward to reflect the ratio of the reverse stock split and a corresponding inverse adjustment to the Index Shares is made.

6.3 SPECIAL CASH DIVIDENDS

A dividend is considered special if the information provided by the listing Exchange in their announcement of the ex-date indicates that the dividend is special. Other nomenclature for a special dividend may be (but not limited to) extra, extraordinary, non-recurring, one-time, unusual, etc. The price of the Index Security is adjusted for the amount of the special cash dividend. A corresponding adjustment will be made to the Index Shares of the security such that the weight of the Index Security will not change as a result of the action.

6.4 CASH AND STOCK DIVIDENDS

If an Index Security is paying a cash and stock dividend on the same date, the cash dividend is applied before the stock dividend unless otherwise indicated in the information provided by the Exchange. Additionally, in the case of an optional dividend which allows the holder to choose between receiving cash or stock, the adjustment will be made in the manner the dividend has been announced by the Exchange.

6.5 STOCK DISTRIBUTION OF ANOTHER SECURITY

If an Index Security is distributing shares of a different security, the value of the Index Security will be adjusted downward to reflect the ratio of the distribution. There will also be an adjustment to Index Shares. If the security being distributed is another class of common shares of the same Issuer, the value of the existing Index Security will be adjusted downward to reflect the ratio of the distribution. There will be an adjustment to Index Shares. The new class of shares is not added to the Index. 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.

6.6 SPIN-OFFS

If an Index Security is spinning off a security, the value of the Index Security will be adjusted downward to reflect the ratio of the distribution 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. The value of the spin-off is determined by multiplying the spin-off ratio by the when-issued price. Additionally, 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.

6.7 RIGHTS OFFERINGS

The price of an Index Security is adjusted on the ex-date for rights offerings if the rights are transferable and has a subscription price on an equivalent per share basis that is less than the closing price of the Index Security the right entitles a holder to purchase (the "Underlying Security") on the day prior to the ex-date (in-the-money). The price of the Index Security is adjusted downward for the value of the right and a corresponding adjustment will be made to the Index Shares of the security such that the weight of the Index Security will not change as a result of the action. The value of the right is determined by the previous Last Sale Price (LSP) of the Underlying Security minus the sum of the Subscription Price of the right plus the cash dividend of the Underlying Security, if any, divided by the number of rights required to purchase one share, plus one.

7. GENERAL ANNOUNCEMENT POLICY

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

Generally, the list of additions and deletions as a result of each Quarterly Evaluation is publicly announced via an announcement on the Global Index Watch (GIW).

Corporate Actions are implemented in the Indexes in accordance with the Index maintenance rules. Announcements are made prior to the effective date of the Corporate Actions.

In the event that a change has been made to an Index intraday, an announcement will be made to inform clients of the change.

In the event that an Index calculation has been corrected historically, an announcement will be provided and clients will be informed to update their databases accordingly.

8. DISCRETIONARY ADJUSTMENTS

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.

9. APPENDICES

APPENDIX A – DORSEY MOMENTUM PLUS INDEX FAMILY DESCRIPTIONS

Symbol	Index Name	Description	Base Date	Base Value
DWAMLV	Dorsey Wright® Momentum Plus Low Volatility Index	The Dorsey Wright Momentum Plus Index Family (“Indexes”) selects securities based on individual stock momentum plus a fundamental factor (value, dividend yield or volatility). Each security in the Index must pass minimum momentum requirements and greater weights are given to securities with better factor scores.	7/2/2018	1000
DWAMLVT	Dorsey Wright® Momentum Plus Low Volatility Total Return Index			
DWAMLVN	Dorsey Wright® Momentum Plus Low Volatility Net Total Return Index			
DWAMY	Dorsey Wright® Momentum Plus Dividend Yield Index	The Dorsey Wright Momentum Plus Index Family (“Indexes”) selects securities based on individual stock momentum plus a fundamental factor (value, dividend yield or volatility). Each security in the Index must pass minimum momentum requirements and greater weights are given to securities with better factor scores	7/2/2018	1000
DWAMYT	Dorsey Wright® Momentum Plus Dividend Yield Total Return Index			
DWAMYN	Dorsey Wright® Momentum Plus Dividend Yield Net Total Return Index			
DWAMV	Dorsey Wright® Momentum Plus Value Index	The Dorsey Wright Momentum Plus Index Family (“Indexes”) selects securities based on individual stock momentum plus a fundamental factor (value, dividend yield or volatility). Each security in the Index must pass minimum momentum requirements and greater weights are given to securities with better factor scores	7/2/2018	1000
DWAMVT	Dorsey Wright® Momentum Plus Value Total Return Index			
DWAMVN	Dorsey Wright® Momentum Plus Value Net Total Return Index			

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