



INDEX METHODOLOGY

NASDAQ-100 MULTI-ASSET EDGE 8%™ INDEX

NDX8MA

INDEX DESCRIPTION

The Nasdaq-100 Multi-Asset Edge 8% Index (NDX8MA), the “Index”, is designed to provide a dynamic multi-asset strategy that adjusts its exposure to U.S. equities, U.S. Treasuries, and gold across different macroeconomic regimes, seeking diversified exposure through volatility-controlled Components.

Unless stated otherwise, all capitalized terms used in this document are defined in Appendix A: Definitions.

INDEX CALCULATION

The Index value is equal to the Index Base Value on the Index Base Date. Thereafter, for each Index Day, the value of the Index is calculated in accordance with the following formula:

$$I_t = I_{t-1} + U_{t-2}^{core} \times (I_t^{core} - I_{t-1}^{core}) - TC_t$$

where:

t = an Index Day t .

$t - 1$ = the Index Day immediately preceding Index Day t .

I_t = the value of the Index for Index Day t .

U_{t-2}^{core} = the number of units of the Core Index for Index Day $t - 2$ (see *Rebalancing process* below for details).

I_t^{core} = the value of the Core Index for Index Day t (rounded to four decimal places). See *Appendix B: Core Index Calculation* for details.

TC_t = the assumed transaction costs for Index Day t as determined in accordance with the following formula:

$$TC_t = |U_{t-2}^{core} - U_{t-3}^{core}| \times I_{t-1}^{core} \times CTC$$

where:

CTC = the assigned Component transaction cost as detailed in *Index parameters* below.

For purposes of publication, Index values are rounded to four decimal places.

If the value for an underlying Component is unavailable on a given Index Day t , then such value shall be the last available value for that Component, as determined by the Index Administrator.

INDEX CONSTRUCTION

Index parameters

The table below details the parameters specific, where applicable, to the construction and calculation of the Index.

Index (Symbol)	Target Volatility (TV)	Maximum Daily Exposure Change ($MaxExpChg$)	Leverage Cap ($MaxLev$)	Transaction Cost (CTC)
Nasdaq-100 Multi-Asset Edge 8% Index (NDX8MA)	8%	25%	200%	0.02%

Component parameters

The table below details the Components specific to the construction and calculation of the Index.

Component Type (Identifier)	Component (Symbol)	Exchange Calendar
Equity (EQ)	Nasdaq-100 Intraday 10% Edge Growth Index (NDXI1EGT)	Nasdaq Stock Exchange
Fixed Income (FI)	Dynamic Treasuries VT10 (CIIRLSTF)	Chicago Board of Trade (CBOT) and Federal Reserve Bank of New York
Commodity (GLD)	GLD VT10 (CIEQGL1V)	New York Stock Exchange (NYSE)

Index components and weighting

The Index may only include the Components as detailed in the *Component parameters* section above.

Please refer to *Appendix B: Core Index Calculation* and the *Rebalancing process* section below for details on Component weighting and units determination.

Rebalancing process

Subject to a Hedge Delay, the Index is rebalanced daily after the market close. The number of units of the Core Index is determined in accordance with the following formulae:

$$U_t^{core} = FE_t^{core} \times \frac{I_t}{I_t^{core}}$$

$$FE_t^{core} = FE_{t-1}^{core} + \max(-MaxExpChg, \min(MaxExpChg, TE_t^{core} - FE_{t-1}^{core}))$$

$$TE_t^{core} = \min\left(MaxLev, \frac{TV}{CoreVol_t}\right)$$

$$CoreVol_t = \sqrt{\max(EWMA_t^{\lambda_1}, EWMA_t^{\lambda_2})}$$

$$EWMA_t^\lambda = \lambda \times EWMA_{t-1}^\lambda + (1 - \lambda) \times 252 \times \ln\left(\frac{I_t^{core}}{I_{t-1}^{core}}\right)^2$$

where:

FE_t^{core} = the final exposure of the Core Index for Index Day t .

TE_t^{core} = the target exposure of the Core Index for Index Day t .

$MaxExpChg$ = the maximum daily exposure change as detailed in *Index parameters* above.

$MaxLev$ = the leverage cap as detailed in *Index parameters* above.

TV = the target volatility as detailed in *Index parameters* above.

$CoreVol_t$ = the volatility of the Core Index for Index Day t .

$EWMA_t^\lambda$ = the exponential weighted moving average of the Core Index for Index Day t .

λ = the decay factor, where $\lambda \in \{0.93, 0.97\}$.

For non-Rebalance Days, Core Index units do not change:

$$U_t^{core} = U_{t-1}^{core}$$

The Index Base Date (t_0) and Index Base Value are set to December 29, 2006 and 100, respectively. Units prior to the Index Base Date are set equal to those on the Index Base Date.

$$U_{t_0-n}^{core} = U_{t_0}^{core}$$

For the Index Base Date (t_0), the exponential weighted moving average of the Core Index is set to 0.01 and the final exposure is set equal to the target exposure. In formulaic terms:

$$EWMA_{t_0}^\lambda = 0.01$$

$$FE_{t_0}^{core} = TE_{t_0}^{core}$$

INDEX CALENDAR

Holiday schedule

The Indexes are calculated Monday through Friday, except on days when at least one Exchange is scheduled to be closed (the “Holiday Schedule”).

Index calculation and dissemination schedule

Index values are made available after the market close on each Index Day via the [Nasdaq Global Index Watch \(GIW\) website](#).

ADDITIONAL INFORMATION

Announcements

Nasdaq announces Index-related information via the [Nasdaq Global Index Watch \(GIW\) website](#).

For more information on the general Index Announcement procedures, please refer to the [Nasdaq Index Methodology Guide](#).

Recalculation and restatement policy

For information on the Recalculation and Restatement Policy, please refer to the [Nasdaq Index Recalculation Policy](#).

Contact information

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

Index dissemination

Where applicable, Index values and weightings information are available through the [Nasdaq Global Index Watch \(GIW\) website](#) 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, please see the [Nasdaq Index Methodology Guide](#).

Website

For further information, please refer to the [Nasdaq Global Index Watch \(GIW\) website](#).

FTP and dissemination service

Where applicable, 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

Index 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, please refer to the [Nasdaq Index Methodology Guide](#).

APPENDIX A: DEFINITIONS

Term	Description
Calculation Disruption Event	In respect of an Index, the occurrence of one or more of the following events that affects a Component of that Index, or any underlying instrument of such Component, and that the Index Administrator deems to be material to the Index: • Price Failure: Any event that impairs or prevents the ability of the Index Administrator to obtain a relevant price, level, rate, value or any other information from an exchange or other source necessary, on a timely basis and in a manner acceptable to the Index Administrator, in order to perform the calculation of the Index. • Inaccurate Data: The price or value of a component, or other input data, used directly or indirectly in the Index that, in the determination of the Index Administrator, is inaccurate, incomplete and/or does not adequately reflect the true market price or value of such component or input data. • Force Majeure: Any event or circumstance (including, without limitation, a systems failure, natural or man-made disaster, act of God, armed conflict, act of terrorism, riot or labor disruption or any similar intervening circumstance, or restrictions due to emergency powers enforced by federal, state or local government agencies), that is beyond the reasonable control of the Index Administrator and that the Index Administrator determines, in its sole discretion, affects the Index, a Component of the Index, any input data required to calculate the Index, or that prevents the ability of the Index Administrator to calculate the Index. • General Moratorium: the Index Administrator observes on any day that there has been a declaration of a general moratorium in respect of banking activities in any relevant jurisdiction.
Components	In respect of an Index, the Components as detailed in the <i>Index parameters</i> section.
Consequences of a Market Disruption Event or a Calculation Disruption Event	In respect of an Index, if a Market Disruption Event or a Calculation Disruption Event occurs or is occurring on an Index Day that the Index Administrator determines materially affects the Index, the Index Administrator may: • Delay the calculation of the Index and halt the dissemination of the value of the Index and /or other information relating to the Index until such time, which may be a subsequent Index Day, that the Index Administrator determines that such Market Disruption Event or Calculation Disruption Event is no longer occurring. • Determine a good faith estimate of any affected or missing input data required to calculate the Index or the value of the Index for such Index Day or time for such Index Day.
Disrupted Day	In respect of an Index and a Component, an Index Day on which there is a Market Disruption Event in respect of that Component.
Exchange	In respect of an Index and a Component, the exchange(s) listed for that Component in the <i>Component parameters</i> section.

Hedge Delay	In respect of an Index and a Component, if a Market Disruption Event occurs on a scheduled Rebalance Day for such Component, then no change of units of that Component shall occur on that day.
Index Administrator	Nasdaq Index Solutions, LLC
Index Day	In respect of an Index and starting with the Index Base Date, each weekday that is not a scheduled holiday according to the Holiday Schedule as defined in the <i>Index Calendar</i> section.
Market Disruption Event	In respect of an Index and a Component, the occurrence of one or more of the following events that affects that Component, or any underlying instrument of that Component, and that the Index Administrator deems to be material to the Index: • Exchange Disruption: Any exchange related event on a relevant exchange that disrupts or impairs the ability of market participants to effect transactions or obtain market values or price discovery of a component used directly or indirectly in the Index. • Trading Disruption: Any unscheduled closure of the relevant exchange; a material suspension, limitation or disruption of trading on such exchange; a failure of such exchange to publish the relevant price, level, value or other information; a halt in trading, such as a circuit breaker or other exchange imposed halt, including an exchange imposed daily “limit price”; or any other event that materially affects the ability of market participants to trade, effect transactions in, maintain or unwind positions in that Component or any underlying instrument of that Component.
Rebalance Day	In respect of an Index, and a Component, each Index Day that is not a Disrupted Day for that Component.
Regime Determination Day	The last calendar day of each month that is not a weekend day.

For additional key terms not defined above, please refer to the [Nasdaq Index Methodology Guide](#).

APPENDIX B: CORE INDEX CALCULATION

Core index level

The Core Index level for Index Day t is calculated as follows:

$$I_t^{core} = I_{t-1}^{core} + \sum_{i \in \{EQ, FI, GLD\}} U_{i,t-2} \times (P_{i,t} - P_{i,t-1}) - TC_{t-1}^{core}$$

where:

t = an Index Day t .

$t - 1$ = the Index Day immediately preceding Index Day t .

i = an identifier for the respective Component (see *Component parameters* section for a list of Components and their respective identifiers).

$U_{i,t-2}$ = the number of units of Component i for Index Day $t - 2$ (see *Component units* below).

$P_{i,t}$ = the value of Component i for Index Day t (rounded to four decimal places). See *Component parameters* section for further information on the Components).

TC_{t-1}^{core} = Transaction costs for Index Day $t - 1$ (see *Transaction costs* below).

If the value for an underlying Component is unavailable on a given Index Day t , then such value shall be the last available value for that Component, as determined by the Index Administrator.

Transaction costs

The transaction costs for Index Day t are calculated as follows:

$$TC_t^{core} = CTC \times \sum_{i \in \{EQ, FI, GLD\}} P_{i,t} \times |U_{i,t-1} - U_{i,t-2}|$$

where:

CTC = the assigned Component transaction cost as detailed in the *Index parameters* section.

Component units

The units of Component i for Index Day t are calculated as follows:

$$U_{i,t} = TE_{i,t} \times \frac{I_t^{core}}{P_{i,t}}$$

where:

$TE_{i,t}$ = the core target exposure of Component i for Index Day t (see *Fractional Regime-based Core Target Exposures Table* below).

Fractional Regime-based Core Target Exposures			
Regime Signal (RS)	Equity (EQ)	Fixed Income (FI)	Gold (GLD)
1	1/3	1/3	1/3
2	3/5	1/5	1/5
3	1/5	2/5	2/5
4	1/3	1/3	1/3
5	3/5	1/5	1/5

For information on Regime Signal determination, please refer to *Appendix C: Regime Signals*.

The Core Index Base Date (t_0) and Core Index Base Value are set to December 29, 2006 and 100, respectively. Units prior to the Index Base Date are set equal to those on the Index Base Date.

$$U_{i,t_0-n} = U_{i,t_0}$$

APPENDIX C: REGIME SIGNALS

Regime signal

For each Regime Determination Day, the regime signal (RS) is determined in accordance with the following formulae:

$$RS_d = \begin{cases} RQ_d + LEI_Late_d & \text{if } RQ_d = 4 \\ RQ_d & \text{otherwise} \end{cases}$$
$$RQ_d = \begin{cases} 1 & \text{if } GS_d = 1 \text{ and } IS_d = 1 \\ 2 & \text{if } GS_d = 1 \text{ and } IS_d = 0 \\ 3 & \text{if } GS_d = 0 \text{ and } IS_d = 1 \\ 4 & \text{if } GS_d = 0 \text{ and } IS_d = 0 \end{cases}$$

where:

d = a calendar day that is not a weekend day.

RQ_d = the regime quadrant for calendar day d .

GS_d = the growth signal for calendar day d (see below for details).

IS_d = the inflation signal for calendar day d (see below for details).

For non-Regime Determination Days, the regime signal does not change:

$$RS_d = RS_{d-1}$$

Inflation signal

For each Regime Determination Day, the inflation signal (IS) is determined as follows:

$$IS_d = \begin{cases} 1 & \text{if } Breakeven_Diff_{d-1} > 0 \text{ and } CPI_YoY_d \geq 2.5 \\ 0 & \text{Otherwise} \end{cases}$$

$$Breakeven_Diff_d = Breakeven_EWMA3M_d - Breakeven_EWMA36M_d$$

$$Breakeven_EWMA3M_d = \lambda_{3M} \times Breakeven_EWMA3M_{d-1} + (1 - \lambda_{3M}) \times Breakeven_d$$

$$Breakeven_EWMA36M_d = \lambda_{36M} \times Breakeven_EWMA36M_{d-1} + (1 - \lambda_{36M}) \times Breakeven_d$$

where:

CPI_YoY_d = the closing level of the US Consumer Price Index (CPI) Urban Consumers Year-over-Year (YoY) non-seasonally adjusted (NSA), as published by the US Bureau of Labor Statistics, for calendar day d . If there is no closing level available for calendar day d , then the last available closing level immediately preceding calendar day d shall be used.

$$\lambda_{3M} = 0.99$$

$$\lambda_{36M} = 0.999$$

$Breakeven_d$ = the 10-year breakeven Level for calendar day d , and is the difference between the US Treasury 10-Year Constant Maturity Rate and the US Treasury 10-Year Real Yield on such date.

$Breakeven_EWMA3M_d$ = the breakeven level of the three-month equally weighted moving average for calendar day d .

$Breakeven_EWMA36M_d$ = the breakeven level of the 36-month equally weighted moving average for calendar day d .

The first date (d_0) for $Breakeven_EWMA3M$ is January 2, 2003, with an initial value equal to the initial value of $Breakeven$ and equalling 1.64:

$$Breakeven_EWMA3M_{d_0} = Breakeven_{d_0} = 1.64$$

The first date (d_0) for $Breakeven_EWMA36M$ is January 2, 2003, with an initial value equal to the initial value of $Breakeven$ and equalling 1.64:

$$Breakeven_EWMA36M_{d_0} = Breakeven_{d_0} = 1.64$$

Growth signals

On each Regime Determination Day, the growth signal (GS) is determined in accordance with the following formulae:

$$GS_d = \begin{cases} 1 & \text{if } LEI_3MChange_d > 0 \\ 0 & \text{Otherwise} \end{cases}$$

$$LEI_3MChange_d = \lambda \times LEI_3MChange_{d-1} + (1 - \lambda) \times LEI_Change_d$$

where:

$$\lambda = 0.8$$

$LEI_3MChange_d$ = the three-month change in the closing level of the Conference Board Leading Economic Index® (LEI) for the US (month-to-month) for calendar day d .

LEI_Change_d = the month-to-month change in the closing level of the Conference Board Leading Economic Index® (LEI) for the US for calendar day d . If there is no closing level available for calendar day d , then the last available closing level immediately preceding calendar day d shall be used.

The first date (d_0) for $LEI_3MChange$ is January 31, 2002, with an initial value equal to the initial value of LEI_Change and equalling 0.40:

$$LEI_3MChange_{d_0} = LEI_Change_{d_0} = 0.40$$

LEI late signals

For each Regime Determination Day, the Leading Economic Index® (LEI) late signal (LEI_Late) is determined as follows:

$$LEI_Late_d = \begin{cases} 1 & \text{if } LEI_Rate_Change_d > 0 \\ 0 & \text{Otherwise} \end{cases}$$

$$\begin{aligned} LEI_Rate_Change_d \\ = \lambda \times LEI_Rate_Change_{d-1} + (1 - \lambda) \times (LEI_3MChange_d - LEI_3MChange_{d-1}) \end{aligned}$$

where:

$$\lambda = 0.8$$

$LEI_Rate_Change_d$ = the Leading Economic Index® (LEI) rate of change for calendar day d .

The first date (d_0) for LEI_Rate_Change is January 31, 2002, with an initial value of 0.00:

$$LEI_Rate_Change_{d_0} = 0.00$$

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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