INDEX METHODOLOGY

NASDAQ-100 HICAP™ INDEX

NXQHICAP

INDEX DESCRIPTION

The Nasdaq-100 HiCap Index (NXQHICAP), the "Index", is designed to provide variable exposure to the Nasdaq-100 e-mini futures, via the Nasdaq-100 Futures Excess Return™ Index (NDXNQER). The Index uses a volatility tracking mechanism to dynamically adjust exposure to the Component on a daily basis with the aim of tracking a variant of Component volatility linked to market performance.

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

INDEX CALCULATION

For each Index, 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:

$$I_t = I_{t-1} + U_{t-1} \times (P_t - P_{t-1}) - TC_t - FC_t + AF_t$$

where:

t = an Index Day t.

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

I_x = the value of the Index for Index Day x.

U_x = the number of units of the Component for Index Day x (see *Rebalancing process* section below for more details).

P_x = the daily closing price of the Component for Index Day x (rounded to two decimal places).

TC_t = the estimated trading costs for the Component for Index Day t as determined in accordance with the following formula:

$$TC_t = |U_t - U_{t-1}| \times P_t \times CTC$$

where:

CTC = the assigned Component trading cost of 0.00 (0.00%).

FC_t = the estimated funding costs for the Component for Index Day t as determined in accordance with the following formula:

$$FC_t = U_{t-1} \times P_{t-1} \times FR \times \frac{Days_{t-1,t}}{360}$$

where:

FR = the assigned financing rate of 0.00 (0.00%).

$Days_{t-1,t}$ = the number of calendar days from Index Day $t-1$ (inclusive) to Index Day t (exclusive).

AF_t = the decrement adjustment for Index Day t as determined in accordance with the following formula:

$$AF_t = -\left(I_{t-1} \times AR \times \frac{Days_{t-1,t}}{360}\right)$$

where:

AR = the decrement rate as detailed in the *Index parameters* section below.

Index values are rounded to four decimals places.

If the value for a 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 parameters specific to the construction and calculation of the Index.

Index (Symbol)	Component (Symbol)	Initial Volatility	Maximum Exposure[1]	Minimum Exposure	Maximum Exposure Change[2]	Decrement Rate
Nasdaq-100 HiCap Index (NXQHICAP)	Nasdaq-100 Futures Excess Return Index (NDXNQER)	20%	200%	0%	25%	0%

For information on the Component, please refer to the Nasdaq-100 Futures Excess Return Index Methodology document.

Index components and weighting

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

[1] The maximum allowable exposure to the Component.
[2] The maximum daily change in exposure to the Component.

For each Index Day, the Index's exposure to the Component is determined in accordance with the steps outlined in *Appendix B: Exposure Determination Process*.

The Index then rebalances each Index Day into units of the Component (see *Rebalancing process* section below).

Rebalancing process

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

$$U_t = \frac{I_{t-1} \times FE_{t-1}}{P_{t-1}}$$

where:

I_{t-1} = the Index value on Index Day $t - 1$.

FE_{t-1} = the final exposure for the Component for Index Day $t - 1$ (see *Appendix B: Exposure Determination Process*).

P_{t-1} = the daily closing price of the Component for Index Day $t - 1$ (rounded to two decimal places).

For the Index Base Date (t_0), the initial units of the Component are set to zero ($U_{t_0} = 0$).

Units are rounded to eight decimal places.

INDEX CALENDAR

Holiday schedule

The Index is calculated Monday through Friday, except on days when the Chicago Mercantile Exchange (CME) is scheduled to be closed, as published by CME and as may be updated from time to time (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 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: • **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.
Component	The Component for the Index as detailed in the *Index parameters* section.
Consequences of a Calculation Disruption Event or Market Disruption Event	If a Calculation Disruption Event or Market 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 Calculation Disruption Event or Market 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 a Component, an Index Day on which there is a Market Disruption Event.
Evaluation Date	Each Index Day.
Exchange	The Chicago Mercantile Exchange (CME).
Hedge Delay	In respect of a Component, if a Trading Disruption or Exchange Disruption, as defined in *Market Disruption Event* below, occurs on a scheduled Rebalance Day for such Component, then no change of units for that Component shall occur on that day.

Index Administrator	Nasdaq, Inc.
Index Base Date	July 1, 2003
Index Base Value	100.0000
Index Day	Starting with the Index Base Date, each weekday that is not a scheduled holiday according to the Index Holiday Schedule as defined in the *Index Calendar* section.
Market Disruption Event	In respect of 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 Evaluation Date, the Index Day immediately after that Evaluation Date that is not a Disrupted Day.

For additional key terms not defined above, please refer to the Nasdaq Index Methodology Guide.

APPENDIX B: EXPOSURE DETERMINATION PROCESS

For each Evaluation Date, the specified volatility measures are evaluated and used to determine the daily exposure to the Component with the aim of tracking an enhanced level of volatility relative to the Nasdaq-100 Index®. The daily exposure is determined as follows:

1. Determine the log return of the Component (CR_t^k) by taking the natural logarithm return of the Component calculated in accordance with the following formula:

$$CR_t^k = ln\left(\frac{P_t}{P_{t-k}}\right)$$

where:

$CR_t^k = 0 \; if \; t < k$

P_t = the daily closing price of the Component for Index Day t (rounded to two decimal places).

P_{t-k} = the daily closing price of the Component for the k-th Index Day prior to Index Day t (rounded to two decimal places).

2. Determine the volatility of the Component (CV_t) in accordance with the following formula:

$$CV_t = max\left(\sqrt{\frac{252}{min(21,t)} \times \sum_{j=0}^{min(21,t)-1} CR_{t-j}^1 \times CR_{t-j}^1}, \sqrt{\frac{252}{min(35,t)} \times \sum_{j=0}^{min(35,t)-1} CR_{t-j}^1 \times CR_{t-j}^1}\right)$$

where:

CV_{t_0} = the initial volatility for the Index (see the *Index parameters* section above).

3. The Index Administrator calculates a trailing return measure (TRM_t). For details, please contact the Index Administrator.

4. Determine the smoothed trailing return measure ($STRM_t$) in accordance with the following formula:

$$STRM_t = STRM_{t-1} \times \lambda_{Ret} + TRM_t \times (1 - \lambda_{Ret})$$

where:

$STRM_{t_0}$ = 0

λ_{Ret} = the return lambda = 0.50.

5. The Index Administrator calculates the skew-adjusted volatility of the Component ($SACV_t$). For details, please contact the Index Administrator.

6. Determine the target exposure (TE_t) in accordance with the following formula:

$$TE_t = \left(\frac{SACV_t}{CV_t}\right)$$

7. Determine the final exposure (FE_t) in accordance with the following formula:[3]

$$FE_t = min\left(Max\_Exp, min\left(FE_{t-1} + Max\_Change, max(FE_{t-1} - Max\_Change,\ TE_t)\right)\right)$$

where:

$FE_{t_0} = TE_{t_0}$

Max_Exp = the Maximum Exposure to the Component as detailed in the *Index parameters* section.

Max_Change = the Maximum Exposure Change to the Component as detailed in the *Index parameters* section.

TE_t = the target exposure for Index Day t, as determined in step 6 above.

[3] For Index dissemination purposes, the Index Administrator may publish the effective exposure (EE) of the Component daily as of after the market close. The effective exposure is determined as follows:

$$EE_t = \frac{U_t \times P_t}{I_t}$$

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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