



INDEX METHODOLOGY

NASDAQ-100 FUTURES EXCESS RETURN™ INDEX NDXNQER™

INDEX DESCRIPTION

The Nasdaq-100 Futures Excess Return Index (NDXNQER), the “Index”, is designed to measure the performance of the nearest expiring quarterly E-mini Nasdaq-100 futures contract (Symbol: NQ) trading on the Chicago Mercantile Exchange.

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

INDEX CONSTRUCTION

The Index is constructed from a single NQ futures contract (the current contract) with a provision for replacement as it approaches expiration.

On each Selection Date, the next Component Future is determined as the Component Future that expires in the next calendar quarter (approximately three months out).

Thus, there will be two NQ futures contracts (collectively, the Components) during a Roll Period: the current contract approaching expiration and the next contract expiring in the next calendar quarter that is replacing it. At the conclusion of each Roll Period, the next contract becomes the current contract.

For more information regarding Roll Periods, please refer to Appendix B: Roll Schedule.

INDEX CALCULATIONS

On the Index Base Date, the value of the Index shall be the Index Base Value. On each Index Calculation Day t , after the Index Base Date, the Index values are calculated in accordance with the following formulae:

Index value

$$I_t = I_{t-1} + \sum U_{i,t-1} \times (P_{i,t} - P_{i,t-1})$$

where:

i = a Component.

t = an Index Calculation Day.

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

$U_{i,t-1}$ = the number of units, at the end of the day, after any adjustment due on that day, for Component i and Index Calculation Day $t - 1$.

$P_{i,x}$ = the daily settlement price of Component i for Index Calculation Day x .¹

Units

For each Roll Day, subject to the occurrence of a Market Disruption Event (see Roll Day Disruption), new units for each Component Future of the Reference Component are determined.

On days other than the last Roll Day, the units of the current contract are determined as follows:

$$U_{1,t} = \frac{I_t}{\left(P_{1,t} + P_{2,t} \times \left(\frac{r_t}{R - r_t}\right)\right)}$$

On the last Roll Day the units of the current contract are:

$$U_{1,t} = 0$$

For the incoming futures contract of Reference Component i that is entering the Index, the units are determined as follows:

$$U_{2,t} = \frac{I_t}{\left(P_{1,t} \times \left(\frac{R - r_t}{r_t}\right) + P_{2,t}\right)}$$

On the last Roll Day this, this simplifies to:

$$U_{2,t} = \frac{I_t}{P_{2,t}}$$

After a Roll Period, the next contract becomes the current contract.

$P_{1,t}$ = the settlement price of the current contract for Index Calculation Day t .

$P_{2,t}$ = the settlement price of the next contract for Index Calculation Day t .

r_t = a sequential counter, starting at 1, for each scheduled Roll Day in a Roll Period.

R = the Roll Period Length.

¹ Note for a given Index Calculation Day, if the price of a Component is not available then the last available price for said Component shall be used.

INDEX CALENDAR

Holiday schedule

The Index is calculated Monday through Friday, except on days when the CME is scheduled to be closed, as published by CME and as may be updated from time to time.

Index calculation and dissemination schedule

The Index is calculated based on the contract settlement price provided by the Exchange at market close. Index values are made available on the Nasdaq Global Index Watch (GIW) website.

ADDITIONAL INFORMATION

Announcements

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

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

Recalculation and restatement policy

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

Contact information

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

Index dissemination

Where applicable, Index values and weightings information are available through Nasdaq Global Index Watch (GIW) website at <https://indexes.nasdaq.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, refer to the **Nasdaq Index Methodology Guide**.

Website

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

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

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**.

APPENDIX A: DEFINITIONS

Term	Description
Components	In respect of an Index Calculation Day and the Reference Component, the current Component Future, and during the Roll Period, the next Component Future.
Component Futures	The future contracts of the Reference Component that are scheduled to expire on the third Friday, subject to adjustments for Exchange holidays, of each March, June, September and December.
Consequences of a Market Disruption Event	<p>If a Market Disruption Event occurs or is occurring on an Index Calculation Day that the Index Administrator determines materially affects the Index, the Index Administrator may:</p> <ul style="list-style-type: none"> • 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 Calculation Day, that the Index Administrator determines that such 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 Calculation Day or time for such Index Calculation Day.
Disrupted Day	In respect of a Component, an Index Calculation Day on which there is a Market Disruption Event.
Exchange	The Chicago Mercantile Exchange (“CME”).
Index Base Date	September 30, 1999
Index Base Value	100.00
Index Calculation 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 <i>Index Calendar</i> section.
Market Disruption Event	<p>In respect of a Component, the occurrence of one or more of the following events that affects that Component and that the Index Administrator deems to be material to the Index:</p> <ul style="list-style-type: none"> • Trading Disruption: Any unscheduled closure of the Exchange; a material suspension, limitation or disruption of trading on the Exchange; a failure of the 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; or any other event that materially affects the ability of market participants to trade, effect transactions in, maintain or unwind positions in that Component. • Exchange Disruption: Any exchange related event 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. • 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.

	<ul style="list-style-type: none"> • Inaccurate Data: The price or value of a component that has been calculated by reference to data 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. • 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.
Reference Component	E-mini Nasdaq-100 Futures Contract (NQ), traded on the Chicago Mercantile Exchange.
Roll Day	In respect of a Reference Component, each Index Calculation Day in a Scheduled Roll Period that is not a Disrupted Day for a Component of that Reference Component, if the last day of a Scheduled Roll Period is a Disrupted Day, the next Index Calculation Day.
Roll Day Disruption	If a Market Disruption Event occurs on a scheduled Roll Day for a Component, then no change of units of that Component shall occur on that day, instead the change of units for such Disrupted Day(s) will take place, in addition to any scheduled change of units, on the next following Index Calculation Day that such Market Disruption Event is no longer occurring and there is no other Market Disruption Event is occurring.
Roll Period	The period over which the Index rolls exposure from the current Component Future to the next Component Future, which is normally the same as the Scheduled Roll Period but may differ due to Market Disruption Events.
Roll Period Length	Three days
Roll Period Start Date	The Index Calculation Day that is five Index Calculation Days prior to the third Friday of each March, June, September and December, provided that if such third Friday is a CME holiday, the CME trading day immediately preceding such third Friday.
Scheduled Roll Period	In respect of a Reference Component, the period of Index Calculation Days equal to the Roll Period Length Index starting on, and including, each Roll Period Start Date.
Selection Date	The Index Calculation Day prior to each Roll Period Start Date.

For additional key term not defined above, refer to the **Nasdaq Index Methodology Guide**.

APPENDIX B: ROLL SCHEDULE

Futures Roll Calendar

Exchange	Index	Symbol	Next Contract Expiration – Third Friday of each Quarter											
CME	Nasdaq-100	NQ	1	2	3	4	5	6	7	8	9	10	11	12
			-	-	M	-	-	U	-	-	Z	-	-	H

Exchange contract expiration code for each quarterly roll:

H = March, M = June, U = September, and Z = December.

1 – 12 denote calendar months.

The replacement of the Component Futures occurs over each quarterly Roll Period in March, June, September, and December. The roll is designed to take effect after the close of the 5th, 4th, and 3rd Index Calculation Day preceding the last trading date of the futures contract.

For a three-day Roll Period, the number of units change equally each day. The table below provides an illustration of a three-day roll.

Roll Period Day (r)	Proportion of Current Contract	Proportion of Next Contract
Day 1	2/3	1/3
Day 2	1/3	2/3
Day 3	0	1

The table below provides an illustration of a Roll Day Disruption on Day 1:

Roll Period Day (r)	Proportion of Current Contract	Proportion of Next Contract
Day 1*	1	0
Day 2*	1/3	2/3
Day 3	0	1

* No unit changes on Day 1 due to a disruption on the Roll Day. On Day 2, the unit changes catch-up to where they would have been had there been no disruption.

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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