INDEX METHODOLOGY

NASDAQ-100 DYNAMIC BUFFER™ INDEX

NDXDBI™

INDEX DESCRIPTION

The Nasdaq-100 Dynamic Buffer Index (NDXDBI), the "Index", tracks the performance of a systematic total return of a buffer strategy. The strategy aims to capture upside participation of the Nasdaq-100 Total Return Index®, while providing a level of downside protection – or "buffer" against losses of the Nasdaq-100® Index, based on a measure of expected market volatility.

On each Index Day, the strategy has exposure to the Nasdaq-100 Total Return Index® and three options that make up a buffer structure linked to the Nasdaq-100® Index. The buffer structure consists of options that typically have one day to expiration, a long close to at-the-money put option, a short out-of-the-money put option and a short out-of-the money call option. Each Index Day that options in the Index expire, new options are notionally bought or sold that expire on the following expiration date of the Exchange listed PM-settled NDX options.

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

INDEX CALCULATION

On the Index Base Date, the Index value is initialized to the Index Base Value. Thereafter, on each Index Day t, the value of the Index is calculated in accordance with the following formula:

$$I_t = V_t \times \left(P1^{4pm}_{TWAP,t} - P2^{4pm}_{TWAP,t} - C^{4pm}_{TWAP,t}\right) + U_t \times XNDX_t$$

where:

I_t = the Index value for Index Day t.

V_t = the number of units of each selected option in the Index on Index Day t.

$P1^{4pm}_{TWAP,t}$ = the Time Weighted Average Price of the non-expiring long put option on Index Day t, calculated using the TWAP window on Index Day t.

$P2^{4pm}_{TWAP,t}$ = the Time Weighted Average Price of the non-expiring short put option on Index Day t, calculated using the TWAP window on Index Day t.

$C_{TWAP,t}^{4pm}$ = the Time Weighted Average Price of the non-expiring short call option on Index Day t, calculated using the TWAP window on Index Day t.

U_t = the number of units of Nasdaq-100 Total Return Index® in the Index on Index Day t.

$XNDX_t$ = the closing level of the Nasdaq-100 Total Return Index® on Index Day t.

Please refer to Appendix C: TWAP and TWAV Calculations for further details regarding TWAP and TWAV calculations, including respective windows.

Please refer to Appendix E: Disruption Handling for details regarding fallback rules and disruption handling treatments when one or more variables are unavailable.

INDEX CONSTRUCTION

Index parameters

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

Index (Symbol)	Components	Exposure	Strike/Expiry Selection	Transaction Costs
Nasdaq-100 Dynamic Buffer Index (NDXDBI)	Nasdaq-100 Total Return Index® (XNDX)	100%	--	--
	NDX® Long Put	100%	See *Appendix B: Option Selection*	See *Appendix D: Transaction Costs*
	NDX® Short Put	(100%)		
	NDX® Short Call	(100%)		
Nasdaq-100 Dynamic Buffer Option Only Index (NDXDBO)[1]	NDX® Long Put	100%	See *Appendix B: Option Selection*	See *Appendix D: Transaction Costs*
	NDX® Short Put	(100%)		
	NDX® Short Call	(100%)		

For information on the Nasdaq-100 Total Return Index®, please refer to the Nasdaq-100 Index Methodology document.

Option units

For each Roll Date t, the units of the new options selected to be purchased and sold on that date are calculated in accordance with the following formula:

$$V_t = \frac{U_{t-1} \times XNDX_{TWAV,t}^{230pm} + V_{t-1} \times \left(P1_{TWAP,t}^{230pm} - P2_{TWAP,t}^{230pm} - C_{TWAP,t}^{230pm}\right)}{NDX_{TWAV,t}^{230pm}}$$

where:

$XNDX_{TWAV,t}^{230pm}$ = the Time Weighted Average Value of the Nasdaq-100 Total Return Index® on Index Day t.

[1] Please refer to *Appendix F: Option Only Index* for calculation details for the Nasdaq-100 Dynamic Buffer Option Only Index.

$P1_{TWAP,t}^{230pm}$ = the Time Weighted Average Price of the long put option expiring on Index Day t, calculated using the TWAP window on Index Day t.

$P2_{TWAP,t}^{230pm}$ = the Time Weighted Average Price of the short put option expiring on Index Day t, calculated using the TWAP window on Index Day t.

$C_{TWAP,t}^{230pm}$ = the Time Weighted Average Price of the short call option expiring on Index Day t, calculated using the TWAP window on Index Day t.

$NDX_{TWAV,t}^{230pm}$ = the Time Weighted Average Value of Nasdaq-100® Index on Index Day t.

If Index Day t is the first Roll Date, then:

$$V_t = \frac{Index\_Base\_Value}{NDX_{TWAV,t}^{230pm}}$$

If Index Day t is not a Roll Date, then the option units do not change:

$$V_t = V_{t-1}$$

Equity units

For each Roll Date t, the units of the Nasdaq-100 Total Return Index® in the Index are calculated in accordance with the following formulae:

$$U_t = \frac{U_{t-1} \times XNDX_t + V_{t-1} \times \left(max(K_{t-1}^{P1} - XQC_t, 0) - max(K_{t-1}^{P2} - XQC_t, 0) - max(XQC_t - K_{t-1}^{C}, 0)\right) + Prem_t}{XNDX_t}$$

$$Prem_t = V_t \times \left(P2_{TWAP,t}^{4pm} - P2TC_t^{4pm} - P1_{TWAP,t}^{4pm} - P1TC_t^{4pm} + C_{TWAP,t}^{4pm} - CTC_t^{4pm}\right)$$

where:

$Prem_t$ = the estimated net option cost of entering into the relevant put and call options to create the buffer option structure on Index Day t.

K_{t-1}^{P1} = the strike price of the long put option selected on Index Day $t-1$.

K_{t-1}^{P2} = the strike price of the short put option selected on Index Day $t-1$.

K_{t-1}^{C} = the strike price of the short call option selected on Index Day $t-1$.

XQC_t = the value of the Nasdaq-100® PM Settlement Value Index on Index Day t.

$P2TC_t^{4pm}$ = the Transaction Cost applied to the short put option entered on Index Day t.

$P1TC_t^{4pm}$ = the Transaction Cost applied to the long put option entered on Index Day t.

CTC_t^{4pm} = the Transaction Cost applied to the short call option entered on Index Day t.

If Index Day t is the first Roll Date, then:

$$U_t = \frac{Index\_Base\_Value + Prem_t}{XNDX_t}$$

$$Prem_t = V_t \times \left(P2^{4pm}_{TWAP,t} - P2TC^{4pm}_t - P1^{4pm}_{TWAP,t} - P1TC^{4pm}_t + C^{4pm}_{TWAP,t} - CTC^{4pm}_t\right)$$

If Index Day t is not a Roll Date, then the equity units do not change:

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

Please refer to Appendix B: Option Selection for further details regarding expiration selection and strike price selection.

INDEX CALENDAR

Holiday schedule

The Index is calculated Monday through Friday, except on days when the Nasdaq Stock 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 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: • **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 for that Index as detailed in the *Index parameters* section.
Consequences of a Calculation Disruption Event or Market Disruption Event	In respect of an Index, 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 an Index and a Component, an Index Day on which there is a Market Disruption Event.
Exchange	The Nasdaq Stock Exchange.
Half Trading Day	An Index Day on which markets are scheduled to close early at 1:00 PM ET instead of 4:00 PM ET, as published by Nasdaq and subject to change from time to time.

Hedge Delay	In respect of an Index and a Component, if a Trading Disruption or Exchange Disruption, as defined in *Market Disruption Event* below, occurs on a scheduled Roll Date for such Component, then no change of units of that Component shall occur on that day.
Index Administrator	Nasdaq, Inc.
Index Base Date	August 12, 2022
Index Base Value	1000.00
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 Index Holiday Schedule as defined in the *Index Calendar* 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.
Regular Trading Day	An Index Day that is not a Half Trading Day.
Roll Date	The first Roll Date of the Index is August 15, 2022. Thereafter, a Roll Date is each Index Day where there are PM-settled NDX options for that day.
Roll Date Disruption	If a Market Disruption Event occurs on a scheduled Roll Date for a Component, then no change of units of that Component shall occur on that day.

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

APPENDIX B: OPTION SELECTION

Expiration selection

For each Roll Date, the options expiration date selected will be the expiration date of the next nearest available PM-settled NDX options on or after the Index Day following that Roll Date. This will generally be the next business day.

However, prior to May 2025, there are no Exchange listed PM-settled NDX options on dates when there are Exchange listed AM-settled NDX options, usually the third Friday of each month. Therefore, on the Roll Date (usually Thursday) before the third Friday of each month, the option expiration date will be the next PM-settled expiration (usually Monday). In the event the third Friday is a scheduled market holiday, the above days will be adjusted accordingly.

Strike price selection

For each Roll Date, each of the selected options shall be the Exchange listed PM-settled NDX option, with an expiration date equal to the selected expiration date with a strike price K_t^x, that is closest to the target strike price $\widehat{K}_t^x$, as determined by the Index Administrator, in according with the following formulae:

$$\widehat{K}_t^{P1} = NDX_{TWAV,t}^{230pm} \times min\left(1 + \frac{\sigma_{Vo24,t}^{Intraday}}{100 \times 45}, 1.01\right)$$

$$\widehat{K}_t^{P2} = NDX_{TWAV,t}^{230pm} \times \left(1 - \max\left(\min\left(\frac{\sigma_{Vo24,t}^{Intraday}}{100 \times 13}, 0.05\right), 0.01\right)\right)$$

$$\widehat{K}_t^{C} = NDX_{TWAV,t}^{230pm} \times min\left(1 + \frac{\sigma_{Vo24,t}^{Intraday}}{100 \times 16}, 1.1\right)$$

$$\sigma_{Vo24,t}^{Intraday} = \frac{C_{TWAP,1M,t}^{230pm} \times \sqrt{2\pi} \times 100}{K_{1M,t}^{230pm} \times \sqrt{\frac{DTE_t}{365}}}$$

where:

$\widehat{K}_t^{P1}$ = the target strike price of the long put option selected on Index Day t.

$\widehat{K}_t^{P2}$ = the target strike price of the short put option selected on Index Day t.

$\widehat{K}_t^{C}$ = the target strike price of the short call option selected on Index Day t.

$\sigma_{Vo24,t}^{Intraday}$ = the Intraday value of the At-The-Money Implied Volatility approximation on Index Day t, as defined in the formula above for purposes of scaling strike selection.

$C_{TWAP,1M,t}^{230pm}$ = the Time Weighted Average Price of the ATM call option with second closest AM-settled monthly expiry as of Index Day t, calculated using the TWAP window on Index Day t, that is used in the intraday Vo24 Index Calculation on Index Day t.

$K_{1M,t}^{230pm}$ = the strike price of the closest to $NDX_{TWAV,t}^{230pm}$ call option with second closest AM-settled monthly expiry as of Index Day t, that is used in the intraday Vo24 Index Calculation on Index Day t.

DTE_t = is equal to the positive integer quantity of calendar days between Index Day t and the second closest monthly listed expiry date.

If $\widehat{K}_t$ is equidistant to two listed strike prices, then K_t is equal to larger of the two listed strike prices.

If Index Day t is not a Roll Date, then no new options are selected, therefore the option strike prices do not change:

$K_t^x = K_{t-1}^x$

APPENDIX C: TWAP AND TWAV CALCULATIONS

TWAP and TWAV calculation windows

On a Regular Trading Day, the TWAP and TWAV calculation windows for each of the variables are:

Variables	TWAP/TWAV	Lookback Time T_{LB}	Start Time T_S	End Time T_E	Interval ΔT	Time Zone
$XNDX_{TWAV,t}^{230pm}$	TWAV	N/A	14:30:00	14:40:00	15 sec	US/Eastern
$NDX_{TWAV,t}^{230pm}$	TWAV	N/A	14:30:00	14:40:00	15 sec	US/Eastern
$P1_{TWAP,t}^{230pm}$	TWAP	13:30:00	14:30:00	14:40:00	15 sec	US/Eastern
$P1_{TWAP,t}^{4pm}$	TWAP	15:00:00	15:59:30	16:00:00	1 sec	US/Eastern
$P2_{TWAP,t}^{230pm}$	TWAP	13:30:00	14:30:00	14:40:00	15 sec	US/Eastern
$P2_{TWAP,t}^{4pm}$	TWAP	15:00:00	15:59:30	16:00:00	1 sec	US/Eastern
$C_{TWAP,t}^{230pm}$	TWAP	13:30:00	14:30:00	14:40:00	15 sec	US/Eastern
$C_{TWAP,t}^{4pm}$	TWAP	15:00:00	15:59:30	16:00:00	1 sec	US/Eastern

For Half Trading Days, the TWAP and TWAV calculation windows are (Note that the same variable names are used for TWAV and TWAP for clarity):

Variables	TWAP/TWAV	Lookback Time T_{LB}	Start Time T_S	End Time T_E	Interval ΔT	Time Zone
$XNDX_{TWAV,t}^{230pm}$	TWAV	N/A	11:30:00	11:40:00	15 sec	US/Eastern
$NDX_{TWAV,t}^{230pm}$	TWAV	N/A	11:30:00	11:40:00	15 sec	US/Eastern
$P1_{TWAP,t}^{230pm}$	TWAP	10:30:00	11:30:00	11:40:00	15 sec	US/Eastern
$P1_{TWAP,t}^{4pm}$	TWAP	12:00:00	12:59:30	13:00:00	1 sec	US/Eastern
$P2_{TWAP,t}^{230pm}$	TWAP	10:30:00	11:30:00	11:40:00	15 sec	US/Eastern
$P2_{TWAP,t}^{4pm}$	TWAP	12:00:00	12:59:30	13:00:00	1 sec	US/Eastern
$C_{TWAP,t}^{230pm}$	TWAP	10:30:00	11:30:00	11:40:00	15 sec	US/Eastern
$C_{TWAP,t}^{4pm}$	TWAP	12:00:00	12:59:30	13:00:00	1 sec	US/Eastern

Index TWAV calculations

Index TWAV is the Time Weighted Average Value of an index within a specified time window.

In respect of an Index TWAV calculation, for the intraday time window $W = [\, T_S, T_E]$ given by 'Start Time' (T_S) and 'End Time' (T_E), the time window W is divided into N intervals each of width equal to ΔT where:

$$N = \frac{T_E - T_S}{\Delta T}$$

For $0 \leq i < N$, the i^{th}-interval is given by the points $[\, T_S + i \times \Delta T, T_S + (\, i + 1) \times \Delta T\ )$. Note that the interval includes the start-point and excludes the endpoint.

In respect of an Index TWAV calculation, for each i^{th}-interval the $IndexLevel_i$ is defined as:

$$IndexLevel_i = First\ Index\ Level\ in\ the\ i^{th} - interval$$

If there is no available Index value in the i^{th}-interval, then $IndexLevel_i$ is not defined. Further δ_i is defined as:

$$\delta_i = \begin{cases} 1\ if\ \ IndexLevel_i\ is\ defined \\ 0\ \ if\ IndexLevel_i\ not\ defined \end{cases}$$

The TWAV for the given Index and window W is calculated in accordance with the following formula:

$$TWAV(W) = \frac{\Sigma_{i=0}^{N-1}\ \delta_i \times IndexLevel_i}{\Sigma_{i=0}^{N-1}\ \delta_i}$$

If $IndexLevel_i$ is not defined for all the N intervals, then $TWAV(W)$ for that window is deemed not available.

Options TWAP calculations

Option TWAP is the Time Weighted Average Price of an option contract within a specified time window.

In respect of an Option TWAP calculation, for the intraday time window $W = [\, T_S, T_E]$ given by 'Start Time' (T_S) and 'End Time' (T_E), the time window W is divided into N intervals each of width equal to ΔT where:

$$N = \frac{T_E - T_S}{\Delta T}$$

For $0 \leq i < N$, the i^{th}-interval is given by the points $[\, T_{LB},\ T_S + (\, i + 1) \times \Delta T\ )$. Note that the interval always starts at the Lookback Time T_{LB} and ends at $T_S + (\, i + 1) \times \Delta T$ (excludes the endpoint).

In respect of an Option TWAP calculation, for each i^{th}-interval the Ask_i and the Bid_i is defined as:

$$Ask_i = Last\ available\ NBBO\ Ask\ price(non - zero)\ in\ the\ i^{th} - interval$$

$$Bid_i = Last\ available\ NBBO\ Bid\ price(zero\ included)\ in\ the\ i^{th} - interval$$

If for the i^{th}-interval, both Ask_i and Bid_i are available, then the Mid_i price is defined as:

$$Mid_i = \frac{Ask_i + Bid_i}{2}$$

If Ask_i or Bid_i is not defined then in the i^{th}-interval, then Mid_i is not defined. Further δ_i is defined as:

$$\delta_i = \begin{cases} 1 \; if \;\; Mid_i \; is \; defined \\ 0 \; if \; Mid_i \; not \; defined \end{cases}$$

The TWAP for the given Option and window W is calculated in accordance with the following formula:

$$TWAP(W) = \frac{\Sigma_{i=0}^{N-1} \delta_i \times Mid_i}{\Sigma_{i=0}^{N-1} \delta_i}$$

If Mid_i is not defined for all the N intervals, then $TWAP(W)$ for that window is deemed not available.

APPENDIX D: TRANSACTION COSTS

For each Roll Date t, the Transaction Costs are computed as:

$$P1TC_t^{4pm} = \min\left(0.0001 \times \max\left(0.25, \min\left(2, 0.035 \times \sigma_{Vo24,t}\right)\right) \times NDX_t, 0.5 \times P1_{TWAP,t}^{4pm}\right)$$

$$P2TC_t^{4pm} = 0$$

$$CTC_t^{4pm} = \min\left(0.0001 \times \max\left(0.25, \min\left(2, 0.035 \times \sigma_{Vo24,t}\right)\right) \times NDX_t, 0.5 \times C_{TWAP,t}^{4pm}\right)$$

$$\sigma_{Vo24,t} = \frac{C_{1M,t} \times \sqrt{2\pi} \times 100}{K_{1M,t} \times \sqrt{\frac{DTE_t}{365}}}$$

where:

$\sigma_{Vo24,t}$ = the end of day value of the At-The-Money Implied Volatility approximation on Index Day t.

NDX_t = the closing level of the Nasdaq-100® Index for Index Day t.

$C_{1M,t}$ = the 4pm mid-price of the closest to ATM call option with second closest AM-settled monthly expiry as of Index Day t that is used in the Vo24 Index Calculation on Index Day t.

$K_{1M,t}$ = the strike price of the closest to NDX_t (ATM) call option with second closest AM-settled monthly expiry as of Index Day t, that is used in the Vo24 Index Calculation on Index Day t.

APPENDIX E: DISRUPTION HANDLING

In the event that one or more required variables are unavailable on a given Index Day t, the following fallback rules or disruption handling treatments shall be applied to ensure index continuity.

Variable	Treatment
$XNDX_{TWAV,t}^{230pm}$	The last available index value shall be used.
$NDX_{TWAV,t}^{230pm}$	The last available index value shall be used.
$P1_{TWAP,t}^{230pm}$	The last available option quote shall be used.
$P2_{TWAP,t}^{230pm}$	The last available option quote shall be used.
$C_{TWAP,t}^{230pm}$	The last available option quote shall be used.
$P1_{TWAP,t}^{4pm}$	The units for the disrupted option Component will be set to 0.
$P2_{TWAP,t}^{4pm}$	The units for the disrupted option Component will be set to 0.
$C_{TWAP,t}^{4pm}$	The units for the disrupted option Component will be set to 0.
$P2TC_t^{4pm}$	If $P1_{TWAP,t}^{4pm}$ is not available but $P2_{TWAP,t}^{4pm}$ is available, then $P2TC_t^{4pm}$ shall be $\min\left(0.0001 \times \max\left(0.25, \min\left(2, 0.035 \times \sigma_{Vo24,t}\right)\right) \times NDX_t, 0.5 \times P2_{TWAP,t}^{4pm}\right)$.
$\sigma_{Vo24,t}^{Intraday}$	$\sigma_{Vo24,t-1}$, as defined in *Appendix D: Transaction Costs*, shall be used. If that value is unavailable, then the last available $\sigma_{Vo24,t-1}^{Intraday}$ shall be used.
$\sigma_{Vo24,t}$	$\sigma_{Vo24,t}^{Intraday}$, as defined in *Appendix B: Option Selection*, shall be used. If that value is unavailable, then the last available $\sigma_{Vo24,t-1}$ shall be used.

Unless otherwise stated above, if the value for a variable is unavailable on a given Index Day t, then such value shall be the last available value for that variable, as determined by the Index Administrator.

APPENDIX F: OPTION ONLY INDEX

The Nasdaq-100 Dynamic Buffer Option Only Index (NDXDBO), the "Option Only Index", calculates the value of only purchasing and selling put options and selling call options without a long underlying Nasdaq-100 Total Return Index® position.

On the Index Base Date, the Option Only Index value is initialized to the Index Base Value. Thereafter, on each Index Day t, the value of the Option Only Index is calculated in accordance with the following formula:

$$I_t^O = V_t^O \times \left(P1_{TWAP,t}^{4pm} - P2_{TWAP,t}^{4pm} - C_{TWAP,t}^{4pm}\right) + CB_t^O$$

where:

I_t^O = the Option Only Index value for Index Day t.

V_t^O = the number of units of the selected options in the Option Only Index on Index Day t.

CB_t^O = the Cash Balance in the Option Only Index on Index Day t.

Please refer to Appendix E: Disruption Handling for details regarding fallback rules and disruption handling treatments when one or more variables are unavailable.

Option units

For each Roll Date t, the units of the new options selected to be purchased and sold on that date are calculated in accordance with the following formula:[2]

$$V_t^O = \frac{CB_{t-1}^O - (I_{t-1}^O - CB_{t-1}^O) \times RF_{t-1} \times \frac{Days_{t-1,t}}{360} + V_{t-1}^O \times (P1_{TWAP,t}^{230pm} - P2_{TWAP,t}^{230pm} - C_{TWAP,t}^{230pm})}{NDX_{TWAV,t}^{230pm}}$$

where:

RF_{t-1} = the Effective Federal Funds Rate published by the Federal Reserve Bank of New York for Index Day $t-1$. If such rate is unavailable, then the rate shall be the most recent rate available on an Index Day preceding Index Day $t-1$.

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

If Index Day t is not a Roll Date, then the option units do not change:

$$V_t^O = V_{t-1}^O$$

[2] On the Index Base Date, CB_t^O is set to the Index Base Value and V_t^O is set to 0.

Cash balance

The value of the Cash Balance on the Roll Date t will be:

$$CB_t^O = CB_{t-1}^O + Prem_t^O + V_{t-1}^O \times \max(K_{t-1}^{P1} - XQC_t, 0) - V_{t-1}^O \times \max(K_{t-1}^{P2} - XQC_t, 0) - V_{t-1}^O \times \max(XQC_t - K_{t-1}^C, 0) - (I_{t-1}^O - CB_{t-1}^O) \times RF_{t-1} \times \frac{Days_{t-1,t}}{360}$$

$$Prem_t^O = V_t^O \times (P2_{TWAP,t}^{4pm} - P2TC_t^{4pm} - P1_{TWAP,t}^{4pm} - P1TC_t^{4pm} + C_{TWAP,t}^{4pm} - CTC_t^{4pm})$$

where:

$Prem_t^O$ = the estimated net option cost of entering into the relevant put and call options to create the buffer option structure, after transaction costs, for Index Day t.

If Index Day t is not a Roll Date, then:

$$CB_t^O = CB_{t-1}^O - (I_{t-1}^O - CB_{t-1}^O) \times RF_{t-1} \times \frac{Days_{t-1,t}}{360}$$

DISCLAIMER

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