



INDEX METHODOLOGY

NASDAQ-100[®] DAILY COVERED CALL INDEX

NDXDCC

INDEX OVERVIEW

The Nasdaq-100[®] Daily Covered Call Index (NDXDCC), the “Index”, tracks the performance of a systematic covered call strategy. The strategy aims to generate income through periodic selling of upside participation using Nasdaq-100[®] (NDX) Index call options, typically with 1 day to expiration.

On each Index Calculation Date, the strategy has exposure to the Nasdaq-100[®] Total Return Index, a short call option on the Nasdaq-100 Index[®], and a cash account. For each Index Calculation Date that the short call options in the Index expire, new call options are sold that expire on the following exchange listed PM-settled NDX options expiration date.

Calculation details for two related indexes are also described in this methodology:

Nasdaq-100[®] Daily Covered Call - Call Only Index (NDXDCCOV), the “Daily Call Only Index”, is an option index that measures the performance of only the short call portion of the Nasdaq-100[®] Daily Covered Call Index.

Nasdaq-100[®] Daily Covered Call - Income Only Index (NDXDCCI), the “Daily Income Only Index”, is an income index that measures the performance from the total cash received from selling call options and receiving dividends from the Nasdaq-100[®] Index component of the Nasdaq-100[®] Daily Covered Call Index.

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

INDEX CALCULATIONS

Daily Covered Call Index Value

On the Index Base Date, the values of the Index and Cash Account are initialized to the Index Base Value and the values of the long equity units and call option units are set to 0. On each Index Calculation Date t , after the Index Base Date, the Index values are calculated in accordance with the following formula:

$$I_t = CA_t - V_t \times C_{TWAP,t}^{4pm} + U_t \times XNDX_t$$

Please reference Appendix B: Glossary of Symbols for all variable definitions.

Daily Call Only Index Value

On the Index Base Date, the values of the Daily Call Only Index and Daily Call Only Index Cash Account are initialized to the Index Base Value and the call option units are set to 0. The Daily Call Only Index calculates the value of only selling call options without a long underlying Nasdaq-100® Total Return Index position. On any Index Calculation Date t , after the Index Base Date, the Daily Call Only Index values are calculated in accordance with the following formula:

$$I_t^{CI} = CA_t^{CI} - V_t^{CI} \times C_{TWAP,t}^{4pm}$$

Daily Income Only Index Value

On the Index Base Date, the value of the Daily Income Only Index is initialized to 0. On each Index Calculation Date t , after the Index Base Date, the Daily Income Only Index values are calculated in accordance with the following formula:

$$D_t = D_{t-1} + CA_t + \frac{U_{t-1} \times XNDX_{t-1}}{NDX_{t-1}} \times IDP_t^{NDX}$$

If the Index Calculation Date t is not a Roll Date, then,

$$D_t = D_{t-1} + \frac{U_{t-1} \times XNDX_{t-1}}{NDX_{t-1}} \times IDP_t^{NDX}$$

COVERED CALL INDEX UNITS CALCULATION

Long Equity Units

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

$$U_t = \frac{\widetilde{CA}_{t-1} + U_{t-1} \times XNDX_t - V_{t-1} \times \max(0, XQC_t - K_{t-1})}{XNDX_t}$$

If the Index Calculation Date t is not a Roll Date, then,

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

Short Call Option Units

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

$$V_t = \frac{\widetilde{CA}_{t-1} + U_{t-1} \times XNDX_{TWAV,t}^{2pm} - V_{t-1} \times C_{TWAP,t}^{2pm}}{NDX_{TWAV,t}^{2pm}}$$

If the Index Calculation Date t is not a Roll Date, then the units of the short call position do not change:

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

Cash Account

For each Roll Date the Cash Account receives the proceeds, net of transaction costs, from writing the new call options. The value of the Cash Account on the Roll Date t will be:

$$CA_t = V_t \times \widetilde{C}_{TWAP,t}^{4pm}$$

Where TC_t^{4pm} is the transaction cost and

$$\widetilde{C}_{TWAP,t}^{4pm} = C_{TWAP,t}^{4pm} - TC_t^{4pm}$$

The Cash Account with interest is defined as:

$$\widetilde{CA}_{t-1} = CA_{t-1} + CA_{t-1} \times R_{t-1} \times \frac{ACT(t-1, t)}{360}$$

On Index Base Date the Cash Account and the Cash Account with interest are initialized to the Index Base Value.

If the Index Calculation Date t is not a Roll Date, then,

$$CA_t = \widetilde{CA}_{t-1}$$

CALL ONLY INDEX UNITS CALCULATION

Cash Account (Daily Call Only Index)

On a Roll Date t , the option premium received after transaction costs by selling Call Options in the Daily Call Only Index is:

$$Prem_t = V_t^{CI} \times \widetilde{C}_{TWAP,t}^{4pm}$$

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

$$CA_t^{CI} = \widetilde{CA}_{t-1}^{CI} + Prem_t - V_{t-1}^{CI} \times \max(0, XQC_t - K_{t-1})$$

The Cash Account with interest on option premium is defined as:

$$\widetilde{CA}_{t-1}^{CI} = CA_{t-1}^{CI} + Prem_{t-1} \times R_{t-1} \times \frac{ACT(t-1, t)}{360}$$

Note that in the Daily Call Only Index, interest is only applied to the cash generated from the short call option.

If the Index Calculation Date t is not a Roll Date, then,

$$Prem_t = Prem_{t-1} \times \left(1 + R_{t-1} \times \frac{ACT(t-1, t)}{360} \right)$$

$$CA_t^{CI} = CA_{t-1}^{CI} + Prem_{t-1} \times R_{t-1} \times \frac{ACT(t-1, t)}{360}$$

Short Call Option Units (Daily Call Only Index)

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

$$V_t^{CI} = \frac{\widetilde{CA}_{t-1}^{CI} - V_{t-1}^{CI} \times C_{TWAP,t}^{2pm}}{NDX_{TWAV,t}^{2pm}}$$

If the Index Calculation Date t is not a Roll Date, then,

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

OPTION SELECTION

Expiration Selection

For each Roll Date, the expiration date selected will be the next nearest available PM-settled NDX options expiration date. This will generally be the next business day. However, as of March 2024, 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 will be the next PM-settled expiration (usually Monday). In the event the third Friday is a scheduled market holiday, the Thursday option of that week is an AM-settled option, therefore, on the Wednesday of that week, the PM-settled Monday expiry of the following week will be selected, and therefore the Thursday of that week will not be a Roll Date.

Strike Price Selection

For each Roll Date, the strike price K_t of the short call option is equal to the listed strike price, (available as of the end-of-day on date $t-1$) with expiration equal to the selected expiration date, that is nearest to the target strike price \widehat{K}_t , calculated below:

$$\widehat{K}_t = NDX_{TWAV,t}^{2pm} \times \min\left(1 + \frac{\sigma_{Vo24,t-1}}{100 \times 13}, 1.1 \right)$$

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

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

If the Index Calculation Date t is not a Roll Date, then no new option strike price is selected,

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

TWAP AND TWAV CALCULATIONS

TWAP Calculation Window

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

Variables	TWAP/ TWAV	Lookback Time	Start Time	End Time	Interval	Time Zone
$XNDX_{TWAV,t}^{2pm}$	TWAV	N/A	14:00:00	14:10:00	15 sec	US/Eastern
$NDX_{TWAV,t}^{2pm}$	TWAV	N/A	14:00:00	14:10:00	15 sec	US/Eastern
$C_{TWAP,t}^{2pm}$	TWAP	13:00:00	14:00:00	14:10:00	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
$XNDX_{TWAV,t}^{2pm}$	TWAV	N/A	11:00:00	11:10:00	15 sec	US/Eastern
$NDX_{TWAV,t}^{2pm}$	TWAV	N/A	11:00:00	11:10:00	15 sec	US/Eastern
$C_{TWAP,t}^{2pm}$	TWAP	10:00:00	11:00:00	11:10:00	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

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:

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

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

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

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

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

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

Options TWAP Calculations

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:

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

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

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:

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

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

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

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

Transaction Cost

For each Roll Date, the Transaction Cost is computed as:

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

$\tilde{C}_{TWAP,t}^{4pm}$ is used to denote the Transaction Cost adjusted TWAP price of the option and is calculated in accordance with the following formula:

$$\tilde{C}_{TWAP,t}^{4pm} = C_{TWAP,t}^{4pm} - TC_t^{4pm}$$

INDEX CALENDAR

Holiday schedule

The Index is calculated Monday through Friday, except on days when the Nasdaq Stock Market and Nasdaq Options Market are scheduled to be closed.

Index calculation and dissemination schedule

Index values are calculated each business day after the close of the Nasdaq stock market and listed options markets and 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, please refer to the **Nasdaq Index Methodology Guide**.

Unexpected market closures

For information on Unexpected Market Closures, 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**.

Data sources

For information on data sources, please refer to the **Nasdaq Index Methodology Guide**.

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 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, see the **Nasdaq Index Methodology Guide**.

Website

For further information, please 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).

INDEX ROLES

Index Administrator: Nasdaq, Inc.

Index Calculator: Volos Portfolio Solutions, Inc.

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**.

GLOSSARY OF TERMS AS USED IN THIS DOCUMENT

For the glossary of key terms, refer to the **Nasdaq Index Methodology Guide**.

APPENDIX A: DEFINITIONS

Index Calculation Date

Each weekday of the year that is not a scheduled Index holiday.

Index Base Date

The Index Base Date is Friday, August 12th, 2022.

Index Base Value

The Index Base Value is 100.

Half Trading Day

An Index Calculation Date on which markets are scheduled to early closure at 1pm ET instead of 4pm ET as published by Nasdaq on <https://www.nasdaq.com/holidayandtradinghours>, as may change from time to time.

Regular Trading Day

An Index Calculation Date that is not a “Half Trading Day”.

Roll Date

The first Roll Date of the Index is Monday, August 15th, 2022. Thereafter, a Roll Date is each Index Calculation Date where there are exchange listed PM-settled NDX options for that date.

Index TWAV and Option TWAP

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

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

APPENDIX B: GLOSSARY OF SYMBOLS

Symbol	Description
I_t	The Daily Covered Call Index value calculated on date t .
D_t	The Daily Income Only Index value calculated on date t .
I_t^{CI}	The Daily Call Only Index value calculated on date t .
CA_t	The Cash Account in the Daily Covered Call Index and the Daily Income Only Index on date t .
\widetilde{CA}_t	The Cash Account with interest in the Daily Covered Call Index on date t .
CA_t^{CI}	The Cash Account in the Daily Call Only Index on date t .
\widetilde{CA}_t^{CI}	The Cash Account with interest in the Daily Call Only Index on date t .
U_t	The number of units of Nasdaq-100 [®] Total Return Index in the Daily Covered Call Index on date t .
V_t	The number of units of the selected short call option in the Daily Covered Call Index on date t .
V_t^{CI}	The number of units of the selected short call option in the Daily Call Only Index on date t .
\widehat{K}_t	The target value for the strike price of the short call option selected on date t .
K_t	The strike price of the short call option selected on date t .
$XNDX_t$	The closing level of the Nasdaq-100 [®] Total Return Index on date t .
NDX_t	The closing level of the Nasdaq-100 [®] Index for date t .
XQC_t	The value of the Nasdaq-100 [®] PM Settlement Value Index on date t .
IDP_t^{NDX}	The Nasdaq-100 [®] Index Dividend Points on date t .
$XNDX_{TWAV,t}^{2pm}$	The Time Weighted Average Value of Nasdaq-100 [®] Total Return Index on date t .
$NDX_{TWAV,t}^{2pm}$	The Time Weighted Average Value of Nasdaq-100 [®] Index on date t .
$C_{TWAP,t}^{2pm}$	The Time Weighted Average Price of the short call option expiring on date t , calculated using the TWAP window on date t .
$C_{TWAP,t}^{4pm}$	The Time Weighted Average Price of the non-expiring short call option on date t , calculated using the TWAP window on date t .
$\tilde{C}_{TWAP,t}^{4pm}$	The Transaction Cost Adjusted TWAP of the non-expiring short call option on date t .
$C_{ATM,t}^{1m}$	The 4pm mid-price of the closest to ATM call option with second closest AM-settled monthly expiry as of date t that is used in the Vo24 Index Calculation on date t .
$K_{ATM,t}$	The strike price of the closest to ATM call option with second closest AM-settled monthly expiry as of date t , that is used in the Vo24 Index Calculation on date t .
$\sigma_{Vo24,t}$	The value of the At-The-Money Implied Volatility approximation on date t , as defined in the section “Strike Price Selection” for purposes of scaling strike selection and transaction costs in the Index.
DTE_t	Is equal to the positive integer quantity of calendar days between date t and the second closest monthly listed expiry date.
TC_t^{4pm}	The Transaction Cost applied to the short call option entered on date t .
R_t	The Effective Federal Funds Rate on date t , provided that if there is no such rate for date t , then the rate shall be the last available Effective Federal Funds Rate prior to date t .
$ACT(t - 1, t)$	The number of actual calendar days from, and including, date $t - 1$ to but excluding date t .

$Prem_t$	The option premium received after transaction costs by selling call options in the Call Only Index on date t .
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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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