Cboe Global Indices

Cboe NASDAQ BuyWrite Indices

METHODOLOGY

Contents

1 Introduction

This document provides a transparent and easily accessible view of the methodology used to calculate select Cboe NASDAQ BuyWrite Indices, referred to in this document as "the Indices".

1.1 Index Objective

The index objectives of the Indices covered by this document are as follows:

- The **Cboe NASDAQ-100 BuyWrite Index (BXN)** measures the total rate of return of a NASDAQ-100 covered call strategy. This strategy ("BXN covered call strategy") consists of holding a portfolio indexed to the NASDAQ-100 and selling a succession of one-month at-the-money NASDAQ-100 (NDX) call options.

- The **Cboe NASDAQ-100 Half BuyWrite V2 Index (BXNH)** measures the total rate of return of a NASDAQ-100 covered call strategy. This strategy ("BXNH covered call strategy") consists of holding a portfolio indexed to the NASDAQ-100 and selling a succession of one-month at-the-money NASDAQ-100 (NDX) call options. The BXNH Index is similar in design to the Cboe NASDAQ-100 BuyWrite V2 Index (BXNT). However, the difference in methodology is as follows: on the Roll Day, the strategy only writes half a unit of an ATM monthly NDX Call option while the long NDX Index position remains unchanged.

- The **Cboe NASDAQ-100 BuyWrite V2 Index (BXNT)** measures the total rate of return of a NASDAQ-100 covered call strategy. This strategy ("BXNT covered call strategy") consists of holding a portfolio indexed to the NASDAQ-100 and selling a succession of one-month at-the-money NASDAQ-100 (NDX) call options.

- The **Cboe NASDAQ-100 BuyWrite V2 NTR Index (BXNTN)** measures the net total rate of return of the BXNT index, which is designed to track the performance of a covered call strategy consists of holding a portfolio indexed to the NASDAQ-100 and selling a succession of one-month at-the-money NASDAQ-100 (NDX) call options.

- The **Cboe NASDAQ-100 BuyWrite V2 NTR Index CAD (BXNTNCAD)** measures the performance of BXNTN Index in Canadian dollar. The BXNTN Index measures the net total rate of return of BXNT index, which is designed to track the performance of a covered call strategy consists of holding a portfolio indexed to the NASDAQ-100 and selling a succession of one-month at-the-money NASDAQ-100 (NDX) call options.

- The **Cboe NASDAQ-100 BuyWrite V2 UCITS Index (BXNTU)** measures the net total rate of return of a covered call strategy with a "long" exposure to the NASDAQ-100 Index (NDX) and a short NASDAQ-100 Call option expiring monthly. Dividends paid on the component stocks underlying the NASDAQ-100 Index are only reinvested at 85% for tax withholdings consideration.

1.2 Supporting Documentation

This Methodology should be read in conjunction with the following document:

Cboe_Index_Policies_Practices

2 Index Construction

BXN, BXNH and BXNT are total return indices. Dividends paid on the component stocks of the underlying index and the dollar value of option premium deemed received from the sold call options are functionally reinvested in the covered portfolio. BXNTN, BXNTNCAD and BXNTU are net total return indices with dividends only reinvested at 85% due to withholding of tax.

2.1 Index Constituents

The Indices consist of the components listed below. For all Indices covered by this document, except for BXNH, the underlying index component and the short call option component are held in equal notional amounts, i.e., the long underlying index component is fully "covered" by the short call option component. For BXNH, the underlying index component is half covered by the short call option component.

Type	Position	Underlying Ticker	Underlying Name	Option Expiration	Option Type
Index	Long	NDX	NASDAQ-100	n/a	n/a
Option	Short	NDX	NASDAQ-100	1 month	Call

2.2 Index Rebalance

Rebalances are performed monthly, with timelines according to the following table. If the roll dates as mentioned in the table fall on an exchange holiday, the roll date will be moved to the preceding Business Day.

Index Name	Index Ticker	Roll Date	Strike Determination	Strike Price Selection	Closing Old Option	New Option Premium
Cboe NASDAQ-100 BuyWrite Index	BXN	Business day when the standard monthly listed option expiry date occurs.	Standard expiry date	Option with the closest listed strike price at or above the last value of the NASDAQ-100 Index reported before 11:00 a.m. ET.	Settlement against SOQ*.	Option is sold at a VWAP** price determined between 11:30 a.m. and 1:30 p.m. ET.

Index Name	Index Ticker	Roll Date	Strike Determination	Strike Price Selection	Closing Old Option	New Option Premium
Cboe NASDAQ-100 Half BuyWrite V2 Index	BXNH	**Old position**: Will be closed on the business day preceding the standard expiry date (typically on a Thursday). **New position**: Will be opened on the standard expiry date (typically a Friday).	Standard expiry date	Option with the closest listed strike price at or above the last value of the NASDAQ-100 Index reported before 11:00 a.m. ET.	Option is liquidated at a VWAP** price determined between 2:00 p.m. and 4:00 p.m. ET[1].	Option is sold at a VWAP** price determined between 11:30 a.m. and 1:30 p.m. ET.
Cboe NASDAQ-100 BuyWrite V2 Index	BXNT	**Old position**: Will be closed on the business day preceding the standard expiry date (typically on a Thursday). **New position**: Will be opened on the standard expiry date (typically a Friday).	Standard expiry date	Option with the closest listed strike price at or above the last value of the NASDAQ-100 Index reported before 11:00 a.m. ET.	Option is liquidated at a VWAP** price determined between 2:00 p.m. and 4:00 p.m. ET[1].	Option is sold at a VWAP** price determined between 11:30 a.m. and 1:30 p.m. ET.
Cboe NASDAQ-100 BuyWrite V2 NTR Index	BXNTN	Follows the roll schedule of the BXNT index	Follows the strike determination of the BXNT index	Follows the strike price selection of the BXNT index	Follows the old option liquidation of the BXNT index	Follows the new option writing of the BXNT index
Cboe NASDAQ-100 BuyWrite V2 NTR Index CAD	BXNTNCAD	Follows the roll schedule	Follows the strike		Follows the old option liquidation	Follows the new option

[1] *Prior to May 19, 2022, a half-hour VWAP starting at 3:30 p.m. ET was used.*

Index Name	Index Ticker	Roll Date	Strike Determination	Strike Price Selection	Closing Old Option	New Option Premium
		of the BXNT index	determination of the BXNT index	Follows the strike price selection of the BXNT index	of the BXNT index	writing of the BXNT index
Cboe NASDAQ-100 BuyWrite V2 UCITS Index	BXNTU	Business day when the standard monthly listed option expiry date occurs.	Standard expiry date	Option with the closest listed strike price at or above the last value of the NASDAQ-100 Index reported before 11:00 a.m. ET.	Settlement against SOQ*.	Option is sold at a TWAP*** price determined between 11:30 a.m. and 1:30 p.m. ET.

The Indices' covered call strategy requires that each call option in the hypothetical portfolio be held to maturity or a day before maturity (see column "Roll Date" in the table above). In the first part of the roll, the old option position is either settled or closed, following the logic described in column "Closing Old Option" in the table above. Subsequent to the settlement or closure of the expiring call option position, a new call option expiring in the next month is then deemed written, or sold, a transaction commonly referred to as a "roll". The option is selected in line with the rules described in in column "Strike Price Selection" in the table above. Once the strike price of the new call option has been identified, the new call option is deemed sold at a price determined in line with the logic described in column "New Option Premium" in the table above. The value of option premium deemed received from the new call option is functionally reinvested in the portfolio.

*** SOQ**

The Special Opening Quotation ("SOQ") of the underlying index is used as the final settlement price of the index call options. The SOQ is a special calculation of the underlying index that is compiled from the opening prices of component stocks underlying the index. The SOQ calculation is performed when all the constituents underlying the equity index have opened for trading and is usually determined before 11:00 a.m. ET. The final settlement price of the call option at maturity is the greater of 0 and the SOQ minus the strike price of the expiring call option.

**** VWAP**

Cboe Global Indices uses the transaction prices and trade codes from the Options Price Reporting Authority (OPRA) feed to calculate the volume-weighted average of the traded prices ("VWAP"). The VWAP is calculated in two steps:

1. Orders categorized by OPRA as uppercase A – H and lowercase f – t in the Call option that occur during the VWAP period are excluded to remove late, cancel, and spread orders.
2. The weighted average for all remaining transaction prices of the Call option during the VWAP period is calculated, with weights equal to the fraction of total remaining volume transacted at each price during this period. For the option closing transaction, if no transactions occur in the call option during the VWAP period, then the call option is deemed bought back at the last NBBO ask price reported before the end of the VWAP period. For the opening transaction of the new option, if no transactions occur in the call option during the VWAP period, then the call option is deemed sold at the last NBBO bid price reported before the end of the VWAP period. Similarly, if no trades occur, the Index VWAP would be the last NASDAQ-100 quote prior to the end of the VWAP period.

***** TWAP**

CGI determines the TWAP by calculating the midpoint of the last reported new NDX Call option quote every fifteen (15) minutes during the TWAP period and then calculating a weighted average, with weights equal to the fraction of total minutes during this period. The source of the option prices used in the calculation of the TWAP is OPRA. CGI also calculates a time weighted average value of the NASDAQ-100 Index during the TWAP period following the same steps where the NASDAQ-100 Index values used in the TWAP calculations are the last reported NASDAQ-100 Index values of every fifteen (15) minutes.

2.3 Options Pricing

CGI uses listed option prices of the NASDAQ-100 options based on the National Best Bid and Offer (NBBO) as inputs for the Index.

2.4 FX Rates

The Index in the table below is converted from the local index currency to the index denominated currency using the foreign exchange pair in the table below. The foreign exchange rate used is the WMR Closing Spot Rate[2]. All other indices are calculated and denominated in their local currency.

Index Name	Index Ticker	FX Pair
Cboe NASDAQ-100 BuyWrite V2 NTR Index CAD	BXNTNCAD	USD/CAD

2.5 Transaction Costs

For the BXNTU Index, CGI applies transaction costs to the option prices used in the TWAP calculation based on the Vega of the option. The value of the Vega charges per option will be calculated as the Black's Vega of each option multiplied by the below Volatility Spread. The Vega charges are subtracted from the option price for each observation during the TWAP period based on the implied volatility and Vega of the option at that time. No Vega adjustments to the option TWAP calculation are made on non-roll dates.

Implied Vol	Vol Spread
IV ≤ 20%	0.60%
20% < IV ≤ 30%	0.80%
30% < IV ≤ 50%	0.95%
50% < IV	1.65%

[2] The WMR Closing Spot Rates are provided by Refinitiv. Refinitiv shall not be liable for any errors in or delays in providing or making available the data contained within this service or for any actions taken in reliance on the same.

3 Index Calculations

The Indices are calculated according to the following formula:

$$Index_t = Index_{t-1} \times (1 + R_t)$$

where:

- $Index_t$ is today's level of the Index ;
- $Index_{t-1}$ is the level of the Index on the previous day; and
- R_t is the return of the Index.

3.1 Index Calculations BXN

3.1.1 Non-Roll Date Calculations BXN

The non-roll date return of the index is calculated as:

$$1 + R_t = \frac{(S_t + Div_t - C_t)}{(S_{t-1} - C_{t-1})}$$

where:

- S_t is the closing value of the underlying index on day t. For intraday calculations, the current reported value of the underlying index is used;
- S_{t-1} is the closing value of the underlying index at day t-1;
- C_t is the arithmetic average of the last NBBO quote of the call option reported before 4:00 p.m. ET on day t for the closing value. For intraday calculations, the average of the current reported NBBO quote of the call option is used;
- C_{t-1} is the arithmetic average of the last NBBO quote of the call option reported before 4:00 p.m. ET at day t-1; and
- Div_t represents the ordinary cash dividends payable on the component stocks underlying the equity index that trade "ex-dividend" at day t expressed in index points of the relevant underlying index.

3.1.2 Roll Date Calculations BXN

On roll dates, the gross rate of return is compounded from three gross rates of return: the gross rate of return from the previous close to the SOQ is determined and the expiring call is settled, the gross rate of return from the SOQ to the initiation of the new call position, and the gross rate of return from the time the new call option is deemed sold to the close of trading on the roll date. It can be expressed as the following:

$$1 + R_t = (1 + R_a) \times (1 + R_b) \times (1 + R_c)$$

where:

$$R_a = \left(\frac{(S_{SOQt} + Div_t - C_{Settle})}{(S_{t-1} - C_{t-1})} \right) - 1$$

$$R_b = \left(\frac{S_{VWAV}}{S_{SOQt}}\right) - 1$$

$$R_c = \left(\frac{(S_t - C_t)}{(S_{VWAV} - C_{VWAP})}\right) - 1$$

where:

- R_a is the rate of return of the covered portfolio from the previous close of trading through the settlement of the expiring call option;
- S_{SOQt} is the Special Opening Quotation used in determining the settlement price of the expiring call option;
- $C_{Settle} = Max(0, S_{SOQt} - K_{old})$ is the final settlement price of the expiring call option, where $K_{old}$is the strike of the expiring option;
- $R_b$is the rate of return of the uncovered portfolio from the settlement of the expiring option to the time the new call option is deemed sold;
- S_{VWAV} is the volume-weighted average value of the underlying index based on the same time and weights used to calculate the VWAP of the new call option.
- R_c is the rate of return of the covered portfolio from the time the new call option is deemed sold to the close of trading on the roll date;
- C_{VWAP} is the volume-weighted average trading price of the new call option during the VWAP period; and
- C_t refers to the average of the last NBBO quote of the new call option reported before 4:00 p.m. ET on the roll date.

3.1.3 Intraday Calculations BXN

On non-roll dates the intraday calculations follow the non-roll date calculations.
On the roll dates, the intraday calculations follow the roll date calculations, and the Index will not tick intraday until after the VWAP period has ended and the SOQ value has been made available.

3.2 Index Calculations BXNH

3.2.1 Non-Roll Date Calculations BXNH

The non-roll date return of the index is calculated as:

$$1 + R_t = \frac{(S_t + Div_t - 0.5C_t)}{(S_{t-1} - 0.5C_{t-1})}$$

where:

- S_t is the closing value of the NASDAQ-100 Index at day t. For intraday calculations, the current reported value of the NASDAQ-100 Index is used;
- S_{t-1} is the closing value of the NASDAQ-100 Index at day t-1;
- C_t is the arithmetic average of the last NBBO quote of the call option reported before 4:00 p.m. ET at day t for the closing value. For intraday calculations, the average of the current reported NBBO quote of the call option is used;

- C_{t-1} is the arithmetic average of the last NBBO quote of the call option reported before 4:00 p.m. ET at day t-1; and
- Div_t represents the ordinary cash dividends payable on the component stocks underlying the NASDAQ-100 Index that trade "ex-dividend" at day t expressed in NASDAQ-100 Index points.

3.2.2 Roll Date Calculations BXNH

One day prior to the expiration date (generally the Thursday preceding the Third Friday of the month):

$$1 + R_t = (1 + R_a) \times (1 + R_b)$$

where:

$$R_a = \left(\frac{S_{new\_vwav} + Div_t - 0.5C_{old\_option\_vwap}}{S_{t-1} - 0.5C_{t-1}}\right) - 1$$

$$R_b = \left(\frac{S_t}{S_{new\_vwav}}\right) - 1$$

where:

- $C_{old\_option\_vwap}$ is the volume-weighted average price of the current call option between 2:00 p.m. and 4:00 p.m. ET; and
- S_{new_vwav} is the volume-weighted average value of the NASDAQ-100 Index based on the same time and weights used to calculate the VWAP of the old call option between 2:00 p.m. and 4:00 p.m. ET.

On the expiration date:

$$1 + R_t = (1 + R_c) \times (1 + R_d)$$

$$R_c = \left(\frac{S_{VWAV} + Div_t}{S_{t-1}}\right) - 1$$

$$R_d = \left(\frac{S_t - 0.5C_t}{S_{VWAV} - 0.5C_{VWAP}}\right) - 1$$

Where:

- S_{VWAV} is the volume-weighted average value of the NASDAQ-100 Index based on the same time and weights used to calculate the VWAP in the new call option;
- C_{VWAP} is the volume-weighted average trading price of the new call option between 11:30 a.m. and 1:30 p.m. ET; and
- C_t refers to the average NBBO quote of the new call option reported before 4:00 p.m. ET on the roll date.

3.2.3 Intraday Calculations BXNH

On non-roll dates the intraday calculations follow the non-roll date calculations.
On the roll dates, the intraday calculations follow the roll date calculations, and the Index will not tick intraday until after the VWAP period has ended and the SOQ value has been made available.

3.3 Index Calculations BXNT

3.3.1 Non-Roll Date Calculations BXNT

The non-roll date return of the index is calculated as:

$$1 + R_t = \frac{(S_t + Div_t - C_t)}{(S_{t-1} - C_{t-1})}$$

where:

- S_t is the closing value of the NASDAQ-100 Index at day t. For intraday calculations, the current reported value of the NASDAQ-100 Index is used;
- S_{t-1} is the closing value of the NASDAQ-100 Index at day t-1;
- C_t is the arithmetic average of the last NBBO quote of the call option reported before 4:00 p.m. ET at day t for the closing value. For intraday calculations, the average of the current reported NBBO quote of the call option is used;
- C_{t-1} is the arithmetic average of the last NBBO quote of the call option reported before 4:00 p.m. ET at day t-1; and
- Div_t represents the ordinary cash dividends payable on the component stocks underlying the NASDAQ-100 Index that trade "ex-dividend" at day t expressed in NASDAQ-100 Index points.

3.3.2 Roll Date Calculations BXNT

One day prior to the expiration date (generally the Thursday preceding the Third Friday of the month):

$$1 + R_t = (1 + R_a) \times (1 + R_b)$$

where:

$$R_a = \left(\frac{S_{new\_vwav} + Div_t - C_{old\_option\_vwap}}{S_{t-1} - C_{t-1}}\right) - 1$$

$$R_b = \left(\frac{S_t}{S_{new\_vwav}}\right) - 1$$

where:

- $C_{old\_option\_vwap}$ is the volume-weighted average price of the current call option between 2:00 p.m. and 4:00 p.m. ET.
- S_{new_vwav} is the volume-weighted average value of the NASDAQ-100 Index based on the same time and weights used to calculate the VWAP of the old call option between 2:00 p.m. and 4:00 p.m. ET.

On the expiration date:

$$1 + R_t = (1 + R_c) \times (1 + R_d)$$

$$R_c = \left(\frac{S_{VWAV} + Div_t}{S_{t-1}}\right) - 1$$

$$R_d = \left(\frac{S_t - C_t}{S_{VWAV} - C_{VWAP}}\right) - 1$$

Where:

- S_{VWAV} is the volume-weighted average value of the NASDAQ-100 Index based on the same time and weights used to calculate the VWAP in the new call option;
- C_{VWAP} is the volume-weighted average trading price of the new call option between 11:30 a.m. and 1:30 p.m. ET; and
- C_t refers to the average NBBO quote of the new call option reported before 4:00 p.m. ET on the roll date.

3.3.3 Intraday Calculations BXNT

On non-roll dates the intraday calculations follow the non-roll date calculations.
On the roll dates, the intraday calculations follow the roll date calculations, and the Index will not tick intraday until after the VWAP period has ended and the SOQ value has been made available.

3.4 Index Calculations BXNTN

3.4.1 Non-Roll Date Calculations BXNTN

The non-roll date return of the index is calculated as:

$$1 + R_t = \frac{(S_t + (1 - WHT\_rate) * Div_t - C_t)}{(S_{t-1} - C_{t-1})}$$

where:

- S_t is the closing value of the NASDAQ-100 Index at day t. For intraday calculations, the current reported value of the NASDAQ-100 Index is used;
- S_{t-1} is the closing value of the NASDAQ-100 Index at day t-1;
- C_t is the arithmetic average of the last NBBO quote of the call option reported before 4:00 p.m. ET at day t for the closing value. For intraday calculations, the average of the current reported NBBO quote of the call option is used;
- C_{t-1} is the arithmetic average of the last NBBO quote of the call option reported before 4:00 p.m. ET at day t-1; and
- Div_t represents the ordinary cash dividends payable on the component stocks underlying the NASDAQ-100 Index that trade "ex-dividend" at day t expressed in NASDAQ-100 Index points.
- WHT_rate is the 15% tax withholding rate;

3.4.2 Roll Date Calculations BXNTN

One day prior to the expiration date (generally the Thursday preceding the Third Friday of the month):

$$1 + R_t = (1 + R_a) \times (1 + R_b)$$

where:

$$R_a = \left(\frac{S_{new\_vwav} + (1 - WHT\_rate) * Div_t - C_{old\_option\_vwap}}{S_{t-1} - C_{t-1}}\right) - 1$$

$$R_b = \left(\frac{S_t}{S_{new\_vwav}}\right) - 1$$

where:

- $C_{old\_option\_vwap}$ is the volume-weighted average price of the current call option between 2:00 p.m. and 4:00 p.m. ET.
- S_{new_vwav} is the volume-weighted average value of the NASDAQ-100 Index based on the same time and weights used to calculate the VWAP of the old call option between 2:00 p.m. and 4:00 p.m. ET.

On the expiration date:

$$1 + R_t = (1 + R_c) \times (1 + R_d)$$

$$R_c = \left(\frac{S_{VWAV} + (1 - WHT\_rate) * Div_t}{S_{t-1}}\right) - 1$$

$$R_d = \left(\frac{S_t - C_t}{S_{VWAV} - C_{VWAP}}\right) - 1$$

Where:

- S_{VWAV} is the volume-weighted average value of the NASDAQ-100 Index based on the same time and weights used to calculate the VWAP in the new call option;
- C_{VWAP} is the volume-weighted average trading price of the new call option between 11:30 a.m. and 1:30 p.m. ET; and
- C_t refers to the average NBBO quote of the new call option reported before 4:00 p.m. ET on the roll date.

3.4.3 Intraday Calculations BXNTN

On non-roll dates the intraday calculations follow the non-roll date calculations.
On the roll dates, the intraday calculations follow the roll date calculations, and the Index will not tick intraday until after the VWAP period has ended and the SOQ value has been made available.

3.5 Index Calculations BXNTNCAD

Subsequent to the calculation of the BXNTN Index, the return of the BXNTNCAD Index is calculated according to the following formula:

$$1 + R_t = \left(\frac{FX_t}{FX_{t-1}}\right) \times \left(\frac{LocalIndex_t}{LocalIndex_{t-1}}\right)$$

where:

- FX_t is the USD/CAD exchange rate on day *t*; and
- $LocalIndex_t$ is the index level in its local currency, i.e. BXNTN index level in USD, at the close of day *t*.

3.6 Index Calculations BXNTU

3.4.1 Non-Roll Date Calculations BXNTU

The non-roll date return of the index is calculated as:

$$1 + R_t = \frac{S_t + 0.85 * Div_t - C_t}{S_{t-1} - C_{t-1}}$$

where:

- S_t is the closing value of the NASDAQ-100 Index on day t. For intraday calculations, the current reported value of the NASDAQ-100 Index is used;
- S_{t-1} is the closing value of the NASDAQ-100 Index on day t-1;
- C_t is the arithmetic average of the last bid and ask prices of the call option reported before 4:00 p.m. ET on day t for the closing value. For intraday calculations, the average of the current reported bid and ask prices of the call option is used;
- C_{t-1} is the arithmetic average of the last bid and ask prices of the call option reported before 4:00 p.m. ET on day t-1; and
- Div_t represents the ordinary cash dividends payable on the component stocks underlying the NASDAQ-100 Index that trade "ex-dividend" at day t.

3.4.2 Roll Date Calculations BXNTU

The roll rate of return of the index is calculated as:

$$1 + R_t = (1 + R_a) * (1 + R_b) * (1 + R_c)$$

where:

$$R_a = \left(\frac{S_{SOQt} + 0.85 * Div_t - C_{Settle}}{S_{t-1} - C_{t-1}}\right) - 1$$

$R_b = \left(\frac{S_{TWAV}}{S_{SOQt}}\right) - 1$; and

$$R_c = \left(\frac{S_t - C_t}{S_{TWAV-} C_{TWAP}}\right) - 1$$

where:

- R_a is the rate of return of the covered NASDAQ-100 Index portfolio from the previous close of trading through the settlement of the expiring call option;
- S_{SOQt} is the Special Opening Quotation used in determining the settlement price of the expiring call option;
- $C_{Settle} = Max(0, SOQ_t - K_{old})$ is the final settlement price of the expiring call option on the roll date, where K_{old} is the strike of the expiring option;
- R_b is the rate of return of the un-covered NASDAQ-100 Index portfolio from the settlement of the expiring option to the time the new call option is deemed sold;
- S_{TWAV} is the time-weighted average value of the NASDAQ-100 Index based on the same time and weights used to calculate the TWAP in the new call option;
- R_c is the rate of return of the covered NASDAQ-100 Index portfolio from the time the new call option is deemed sold to the close of trading on the roll date;
- C_{TWAP} is the time-weighted average price of the new call option between 11:30 a.m. and 1:30 p.m. ET; and
- C_t refers to the average bid/ask quote of the new call option reported before 4:00 p.m. ET on the roll date.

3.4.3 Intraday Calculations BXNTU

On non-roll dates the intraday calculations follow the non-roll date calculations.
On the roll dates, the intraday calculations follow the roll date calculations, and the Index will not tick intraday until after the VWAP period has ended and the SOQ value has been made available.

4 Calculation and Dissemination

The Indices are calculated and disseminated as follows on each Business Day. A Business Day is defined as a day when the Cboe Options Exchange is open for the Cboe Regular Trading Hours (RTH) session.

Index Name	Index Ticker	Dissemination Frequency	Dissemination Hours
Cboe NASDAQ-100 BuyWrite Index	BXN	15 seconds	Between 9:31 a.m. and 4:15 p.m. ET
Cboe NASDAQ-100 Half BuyWrite V2 Index	BXNH	15 seconds	Between 9:31 a.m. and 4:15 p.m. ET
Cboe NASDAQ-100 BuyWrite V2 Index	BXNT	15 seconds	Between 9:31 a.m. and 4:15 p.m. ET
Cboe NASDAQ-100 BuyWrite V2 NTR Index	BXNTN	15 seconds	Between 9:31 a.m. and 4:15 p.m. ET
Cboe NASDAQ-100 BuyWrite V2 NTR Index CAD	BXNTNCAD	End of Day	RTH
Cboe NASDAQ-100 BuyWrite V2 UCITS Index	BXNTU	15 seconds	Between 9:31 a.m. and 4:15 p.m. ET

The Indices follow the Cboe Options Exchange holiday schedule.

5 Index Information

Index Name	Index Ticker	Base Date	Launch Date	Base Value	Currency
Cboe NASDAQ-100 BuyWrite Index	BXN	December 30, 1994	September 9, 2005	100	USD
Cboe NASDAQ-100 Half BuyWrite V2 Index	BXNH	September 19, 2005	June 22, 2015	100	USD
Cboe NASDAQ-100 BuyWrite V2 Index	BXNT	December 30, 1994	June 22, 2015	100	USD
Cboe NASDAQ-100 BuyWrite V2 NTR Index	BXNTN	December 30, 1994	December 22, 2025	100	USD
Cboe NASDAQ-100 BuyWrite V2 NTR Index CAD	BXNTNCAD	December 30, 1994	December 22, 2025	100	USD
Cboe NASDAQ-100 BuyWrite V2 UCITS Index	BXNTU	September 19, 2005	January 11, 2021	100	USD

Appendix 1 - Changes

Major changes described in this document since May 19, 2022 are as follows:

Change Summary	Effective Date	Previous Language	Updated Language
Addition of new BXNTN and BXNTNCAD indices	December 22, 2025	n/a	BXNTN and BXNTNCAD added to Cboe NASDAQ BuyWrite Indices Methodology
BXNTU - Modification to the Roll Date	December 15, 2022	The expiring Call option is held until the day before its date of maturity, generally the Thursday prior to the third Friday of the month.	The expiring Call option is European-Style and AM-settled on the standard monthly listed option expiry date (generally the third Friday) and held to expiration.
BXNTU - Modification to the Option Premium Calculation	December 15, 2022	The option premium collected is based on the volume-weighted average price ("VWAP") of the new call option at the close.	The option premium collected should be the time-weighted average price ("TWAP") of the new call option during the 2-hour period beginning at 11:30 a.m. ET on the Roll Date.
BXNTU - Introduction of Transaction Costs	December 15, 2022	*n/a*	Transaction costs are applied to the option prices used in the TWAP calculation based on the Vega of the option.
BXNH & BXNT – Change in VWAP Length	May 19, 2022	Thursday VWAP Period 3:30 p.m. – 4:00 p.m. ET	Thursday VWAP Period 2:00 p.m. – 4:00 p.m. ET

Appendix 2 - Document Information

Version Number[3]	3.0
Last Revised Date	December 22, 2025

[3] *Prior to August 8, 2024, the methodologies of the Indices covered in this document were separately maintained in a legacy format.*

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