Cboe

Cboe Global Indices

Cboe Fixed Income ETF BuyWrite Indices

METHODOLOGY

Contents

1 Introduction

This document provides a transparent and easily accessible view of the methodology used to calculate the Cboe TLT 2% OTM BuyWrite Index (BXTB), Cboe HYG BuyWrite Index (BXHB), and Cboe LQD BuyWrite Index (BXLB), collectively 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 TLT 2% OTM BuyWrite Index (BXTB)** is designed to track the performance of a covered call strategy with a short iShares 20+ Year Treasury Bond ETF (TLT) Call option expiring monthly. The option written is a model-based option and the strike of the new TLT Call option is the listed option strike closest to 102% of the closing value of the TLT on the Business Day prior to the roll date.
- The **Cboe HYG BuyWrite Index (BXHB)** is designed to track the performance of a covered call strategy with a short iShares iBoxx $ High Yield Corporate Bond ETF (HYG) Call option expiring monthly. The option written is a model-based option and the strike of the new HYG Call option is the listed option strike closest to 100% of the closing value of the HYG on the Business Day prior to the roll date.
- The **Cboe LQD BuyWrite Index (BXLB)** is designed to track the performance of a covered call strategy with a short iShares iBoxx $ Investment Grade Corporate Bond ETF (LQD) Call option expiring monthly. The option written is a model-based option and the strike of the new LQD Call option is the listed option strike closest to100% of the closing value of the LQD on the Business Day prior to the roll date.

1.2 Supporting Documentation

This methodology should be read in conjunction with the following documents:

Cboe_Index_Policies_Practices

Cboe_American_Style_Options_Implied_Volatility_Calculations_Methodology.pdf

Corporate_Action_Treatment_Methodology_-_Derivatives-Based_Indices.pdf

2 Index Construction

The Indices are total return indices, and the calculation is unit-based. Dividends paid on the underlying ETF and the option premium deemed received from the sold call options are functionally re-invested into the Indices.

2.1 Index Constituents

Index	Type	Position	Ticker	Underlying Name	Option Expiration	Option Type
Cboe TLT 2% OTM BuyWrite Index (BXTB)	ETF	Long	TLT	iShares 20+ Year Treasury Bond ETF	n/a	n/a
	Option	Short	TLT	iShares 20+ Year Treasury Bond ETF	Monthly	Call
Cboe HYG BuyWrite Index (BXHB)	ETF	Long	HYG	iShares iBoxx $ High Yield Corporate Bond ETF	n/a	n/a
	Option	Short	HYG	iShares iBoxx $ High Yield Corporate Bond ETF	Monthly	Call
Cboe LQD BuyWrite Index (BXLB)	ETF	Long	LQD	iShares iBoxx $ Investment Grade Corporate Bond ETF	n/a	n/a
	Option	Short	LQD	iShares iBoxx $ High Yield Corporate Bond ETF	Monthly	Call

2.2 Index Rebalance

Rebalances are performed with monthly frequency, in accordance with the following table.

Index Name	Index Ticker	Roll Date	Strike Determination	Strike Selection	Unit Determination
Cboe TLT 2% OTM BuyWrite Index	BXTB	Business Day preceding the standard monthly listed option expiry date	Business Day Preceding Roll Date	Listed option strike closest to 102% of the closing value of the TLT ETF on the Business Day prior to the roll date.	Roll Date
Cboe HYG BuyWrite Index	BXHB	Business Day preceding the standard monthly listed option expiry date	Business Day Preceding Roll Date	Listed option strike closest to 100% of the closing value of the HYG ETF on the Business Day prior to the roll date.	Roll Date
Cboe LQD BuyWrite Index	BXLB	Business Day preceding the standard monthly listed option expiry date	Business Day Preceding Roll Date	Listed option strike closest to 100% of the closing value of the LQD ETF on the Business Day prior to the roll date.	Roll Date

The expiring call option is European-Style and PM-settled on the roll date and the expiring call option is bought back at the theoretical mid price of the call option at 4:00 p.m. ET on the roll date. The strike of the new call option is selected in line with the rules described in the table above. The option premium collected is the theoretical bid price of the call option at 4:00 p.m. ET on the roll date. The theoretical bid price is determined by observing the NBBO bid-ask spread as a percentage of the NBBO mid price of the listed option with the strike and expiration date closest to the new call option and applying that spread percentage to the theoretical mid price of the new call option.

If there are multiple strikes that match the percentage as mentioned in column "Strike Selection" of the table above, relative to the closing value of the underlying ETF, the strike of the new call option with the higher strike is chosen.

For the Cboe TLT 2% OTM BuyWrite Index ("BXTB"), on the Business Day prior to the roll date at 4:00 p.m. ET, if the premium percentage of the new call option, which is the bid price divided by the closing value of the underlying ETF, falls below 5 basis points (bps), the strike of the new call option is the listed option strike closest to 100% of the closing value of the underlying ETF.

2.3 Options Pricing

The option prices used in the calculation of the Indices are theoretical European-Style values generated using a volatility surface constructed in accordance with the Cboe American-Style Options Implied Volatility Calculation Methodology.

The model is constructed using an implied volatility surface from listed ETF option prices by applying the spline method for interpolation and the SABR model for extrapolation. The spline interpolation is a form of interpolation where the interpolant is a piecewise-defined function by polynomials. The SABR model is a stochastic volatility model, which attempts to capture the volatility smile in derivatives markets. The name stands for "stochastic alpha, beta, rho", referring to the parameters of the model, introduced by Hagan et al., as an attempt to model the volatility surface and capture the empirically observed dynamic behavior of the smile. Valuations are then calculated for the options on the roll dates and at 4:00 p.m. ET each trading date. This pricing methodology is subject to change to using Cboe Hanweck Options Analytics theoretical prices as a primary source as described in the Cboe Theoretical Pricing Service Policies and Practices, after announcement by Cboe Global Indices. And finally, Black-Scholes model is used to price the options as European-Style.

3 Index Calculations

The Indices are calculated according to the following formula:

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

where:

- $Index_t$ is the level of the Index on day t;
- $Index_{t-1}$ is the level of the Index on the previous day; and

- R_t is the return of the Index;

3.1 Non-Roll Date Calculations

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

$$(1 + R_t) = (S_t - C_t) * \left(\frac{Unit_t}{Index_{t-1}}\right)$$

$$Unit_t = \left(\left(\frac{Div_t}{S_t - C_t}\right) * Unit_{t-1}\right) + Unit_{t-1}$$

where:

- S_t is the primary listing exchange's closing value of the underlying ETF at date t. For intraday calculations, the primary listing exchange's current reported value of the ETF is used;
- C_t is the theoretical mid value of the written call option on day t at 4:00 p.m. ET. For intraday calculations, the current theoretical mid prices of the call option is used;
- $Unit_{t-1}$ is the unit amount on date t-1; and
- Div_t represents the ordinary cash dividends of the underlying ETF if date t is on the ex-date.

3.2 Roll Date Calculations

For the intraday calculations of the Indices on roll dates, the non-roll date calculations are used.

The closing return of the Indices on the roll date is calculated as:

$$1 + R_t = (S_t - C_{newBid}) * \left(\frac{Unit_t}{Index_{t-1}}\right)$$

where:

$$Unit_t = \frac{C_{newBid}}{(S_t - C_{newBid})} * Unit_{t-1} + \left(\frac{Div_t}{(S_t - C_{newBid})} * Unit_{t-1}\right) - \frac{C_{oldMid}}{(S_t - C_{newBid})} * Unit_{t-1} + Unit_{t-1}$$

where:

- C_{newBid} is the theoretical bid price of the new call option on roll date at 4:00 p.m. ET; and
- C_{oldMid} is the theoretical mid price of the old call option on roll date at 4:00 p.m. ET.

3.3 Intraday Calculations

Intraday calculations proceed identically to non-roll date calculations in the methodology above using the last traded price of the underlying ETF and the options held by the portfolio on non-roll dates.

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 TLT 2% OTM BuyWrite Index	BXTB	10 Minutes	Between 8:30 a.m. and 8:30 p.m. ET
Cboe HYG BuyWrite Index	BXHB	10 Minutes	Between 8:30 a.m. and 8:30 p.m. ET
Cboe LQD BuyWrite Index	BXLB	10 Minutes	Between 8:30 a.m. and 8:30 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 TLT 2% OTM BuyWrite Index	BXTB	January 20, 2005	May 31, 2022	1000	USD
Cboe HYG BuyWrite Index	BXHB	April 19, 2007	May 31, 2022	1000	USD
Cboe LQD BuyWrite Index	BXLB	January 20, 2005	May 31, 2022	1000	USD

6 Appendix 1 - Changes

Major changes described in this document since July 21, 2025, are as follows:

Change Summary	Effective Date	Previous	Updated
Modification to referencing of corporate action treatment	July 21, 2025	Previously, corporate action treatment in the BXHB, BXTB and BXLB methodologies was described in a table in section “Index Calculations”.	The table with corporate action treatment in section “Index Calculations” was removed, and a reference to the corporate action treatment methodology was added to section 1.2 “Supporting Documentation” of the consolidated methodology document.
Consolidation of BXLB, BXTB and BXHB methodologies	July 21, 2025	-	-

7 Appendix 2 – Document Information

Version Number[1]	1.0
Last Revised Date	July 21, 2025

[1] *Prior to July 21, 2025, the BXTB, BXHB and BXLB methodologies were separately maintained in a legacy format.*

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