

# Eris® BSBY Swap Futures

## Overview

- CME Group futures contracts providing exposure to a \$100,000 notional, fixed versus floating, interest rate swap.
- A long position holder has the exposure of receiving a preset, semi-annual fixed rate versus paying a quarterly floating rate indexed to the 3-month Bloomberg Short-Term Bank Yield Index (BSBY).
- All swap cash flows take place through the daily settlement of changes in the contract price.
- Daily price movements capture:
  - Changes in the present value of future cash flows (swap NPV);
  - Fixed and floating payments due to the passage of time; and
  - Price Alignment Interest (implied interest on the daily Swap NPV).
- Seven benchmark tenors will be listed for trading:
  - 1-, 2-, 3-, 4-, 5-, 7- and 10-year maturities;
  - Quarterly IMM swap effective dates (third Wednesday of March, June, September, and December).
- Swap terms follow market standard, ISDA terms:
  - Fixed rate: semi-annual, 30/360 rate, set at time of contract listing to the rate that is the nearest 0.25%-increment-rate (1.50%, 1.75%, 2.00%, etc.) to the implied par swap rate for the respective swap.
  - Floating rate: quarterly, actual/360 rate, indexed to the 3-month BSBY rate, as published by Bloomberg two business days prior to the start date of each floating interest period.
- Contracts do not expire quarterly; they remain listed futures for the life of the underlying swap and they cash-settle to the realized 3-month BSBY fixings during the life of the contract.

### THE ERIS CONTRACT PRICE

The Eris BSBY contract price captures the three "value ledgers" of the equivalent BSBY swap.

$$\text{Eris Price} = 100 + \begin{array}{c} \text{A} \\ \text{Future cash flows} \end{array} + \begin{array}{c} \text{B} \\ \text{Past cash flows} \end{array} - \begin{array}{c} \text{C} \end{array}$$

<b>A</b>	Swap NPV
<b>B</b>	Past payments of fixed and floating coupons
<b>C</b>	Price alignment interest (accumulated daily SOFR interest on the sum of Swap NPV less today's cash flows)

A, B and C are each expressed in units reflective of a \$100 notional swap. To convert to the dollar value of a single \$100,000 notional contract, multiply by 1,000.

## Swap-like Benefits

- Favorable treatment for '40 Act Funds: no collateral segregation, and efficient leverage ratio treatment under Section 18.
- Flexible tax and accounting treatment: EITHER as an accrual instrument (IRS §1256(e) tax hedging exemption; income taxed as coupon payments are realized), OR as a marked-to-market instrument (IRS §1256(a); with mark-to-market taxed on a 60% long-term/40% short-term capital gains basis).
- Eligible for designation as FASB (ASC-815) cash flow or fair value hedges.

ERIS BSBY CONTRACT SPECS							
EXCHANGE LISTING	CBOT						
TRADING HOURS	Globex trading hours (5:00 p.m. CT to 4:00 p.m. CT, Sunday to Friday)						
CONTRACT SIZE	1 contract = \$100,000 notional for all tenors						
CONTRACT STRUCTURE	Contracts embed exchange of receiving semi-annual fixed coupons, versus paying quarterly floating coupons determined by reference to the 3-Month Bloomberg Short-Term Bank Yield Index (BSBY), published 2 Business Days prior to the start date of each Floating Accrual Period						
CONTRACT LISTINGS	Quarterly IMM Effective Dated Contracts (3rd Wednesday of March, June, September and December each year), listed 9 months prior to the Contract Effective Date						
CONTRACT CODES	6-character alpha-numeric codes, made up of a 3-character prefix representing the contract tenor, and a 3-character suffix representing the Contract Effective Date						
TENORS	1Y	2Y	3Y	4Y	5Y	7Y	10Y
CONTRACT PREFIX	KXA	KXT	KXC	KXD	KXW	KXB	KXY
CONTRACT SUFFIX	3-characters: 1-letter IMM Effective Month (H, M, U, Z, for Mar, Jun, Sep, Dec respectively), followed by a 2-digit effective year (e.g., KXWM22 = Jun'22 Eris BSBY 5Y, maturing in June 2027)						
TRADING CONVENTIONS	Long Futures Position Holder: Fixed Rate Receiver, Floating Rate (BSBY) Payer Short Futures Position Holder: Fixed Rate Payer, Floating Rate (BSBY) Receiver						
CONTRACT EFFECTIVE DATE	The quarterly IMM date for the respective contract						
FIXED RATE	Fixed interest rate, set at time of contract listing, to the nearest 0.25%-increment-rate that is nearest to the implied forward par swap rate, and mirroring the SIFMA BSBY MAC rate published by CME Group if available						
FLOATING RATE	The 3-Month Bloomberg Short Term Bank Yield Index (BSBY) calculated and published by Bloomberg at 8:00 a.m. (EST) 2 U.S. Government Securities Business days prior to the start date of each Floating Accrual Period						
FIXED PAYMENT FREQUENCY & DAYCOUNT	Semi-Annual, 30/360						
FIXED ACCRUAL PERIODS	Semi-annual periods commencing on the Contract Effective Date, to each subsequent semi-annual calendar date thereafter, aligned with the calendar date of the Cash Flow Alignment Date (CFAD), subject to adjustment in accordance with the Modified Following Business Day Convention						
FLOATING PAYMENT FREQUENCY & DAYCOUNT	Quarterly, Actual/360						
FLOATING ACCRUAL PERIODS	Quarterly (3 month) periods commencing on the Contract Effective Date, to each subsequent quarterly calendar date thereafter, aligned with the Cash Flow Alignment Date (CFAD), subject to adjustment in accordance with the Modified Following Business Day Convention						
PAYMENT DATES	Accrual Period End Dates						
BUSINESS DAYS	U.S. Government Securities business days						
CASH FLOW ALIGNMENT DATE ("CFAD")	Date used for aligning Fixed and Floating Accrual Period end dates and determining the contract Maturity Date The Cash Flow Alignment Date (CFAD) is determined by adding the tenor in years to the Effective Date, and may fall on any calendar day, including weekends and holidays						
CONTRACT MATURITY DATE	The Cash Flow Alignment Date, or if this date is not a good Business Day, then the next good Business Day. The Contract Maturity Date is also the end date of the final accrual period and is also the final payment date						

<b>LAST TRADING DAY</b>	1 business day prior to the Contract Maturity Date																										
<b>DAILY SETTLEMENT PRICE</b>	<p>Contracts will be priced on a basis of 100. The Settlement Price for each contract is defined as:</p> $S_t = 100 + A_t + B_t - C_t$ <p><b>S<sub>t</sub></b> = Settlement Price on date t  <b>A<sub>t</sub></b> = The net present value of future Fixed and forecasted Floating Payments on date t, discounted at SOFR  <b>B<sub>t</sub></b> = Accumulated historical Fixed and Floating Payments to date t  <b>C<sub>t</sub></b> = Accumulating, daily SOFR interest on the amount { <b>A<sub>t-1</sub></b> less the Fixed and Floating Payments taking place on date t } calculated in arrears and published daily, referred to as Eris Price Alignment Interest (or Eris PAI™). Eris PAI™ accrues to the Contract Maturity Date. See footnote 1 below for further details  Eris Settlement Prices will be calculated and published to 4 decimals of precision (e.g., 100.1234), equivalent to the nearest \$0.10/10 cents per contract</p>																										
<b>FINAL SETTLEMENT PRICE</b>	<p>100 plus the net accumulated value of all payments during the contract life:</p> $S_{final} = 100 + B_{final} - C_{final}$ <p><b>S<sub>final</sub></b> = Settlement Price on Contract Maturity Date  <b>B<sub>final</sub></b> = Accumulated historical Fixed and Floating Payments during life of contract  <b>C<sub>final</sub></b> = Eris PAI™ on the Contract Maturity Date</p>																										
<b>PRICE CONVENTION</b>	Contracts trade on a decimal price indexed to 100, in eligible tick increments; the value of 1.000 price point is equal to \$1000.00																										
<b>TICK SIZES</b>	Tick sizes vary by tenor (see below) from \$2.50 - \$20 / 0.0025-0.020, equivalent to between 1/10th - 3/10th of a basis point in yield, 0.001-0.003%.																										
<b>CALENDAR SPREADS</b>	CME Globex contract codes for Calendar Spreads are made up of the Contract Code prefix followed by a 4-character suffix, made up of a 2-character front month code followed by a 2-character back month code (e.g., KXAM2U2 = 1Y Calendar Spread from June 2022 to September 2022)																										
<b>TENOR CONTRACT</b>	1Y KXA	2Y KXT	3Y KXC	4Y KXD	5Y KXW	7Y KXB	10Y KXY																				
<b>INITIAL TICK \$/PX</b>	\$2.50 0.0025	\$2.50 0.0025	\$5.00 0.0050	\$10.00 0.0100	\$10.00 0.0100	\$20.00 0.0200	\$20.00 0.0200																				
<b>CALENDAR SPREADS TICK SIZE</b>	\$2.50 0.0025	\$2.50 0.0025	\$2.50 0.0025	\$5.00 0.0050	\$5.00 0.0050	\$10.00 0.0100	\$10.00 0.0100																				
<b>VARIABLE TICK SIZES</b>	To be implemented once contracts reach sufficient aging, outright contract tick sizes will reduce once over the life for each contract, based on the remaining tenor. This will be similar to how it is implemented today for Eris Libor contracts.																										
<b>INTER-COMMODITY SPREADS</b>	<p>Inter-Commodity Spreads (ICS) will be available in both Eris BSBY vs Eris BSBY, Eris BSBY vs Eris SOFR, and Eris BSBY vs Eris LIBOR. Contract codes are as follows:</p> <p><b>Eris BSBY vs Eris BSBY:</b></p> <table border="1"> <tr> <td>1y vs. 2y KXA/KXT 1:1 TBD</td> <td>1y vs. 3y KXA/KXC 1:1 TBD</td> <td>2y vs. 3y KXT/KXC 1:1 TBD</td> <td>2y vs. 5y KXT/KXW 5:2 TBD</td> <td>3y vs. 4y KXC/KXD 1:1 TBD</td> <td>3y vs. 5y KXC/KXW 5:3 TBD</td> <td>4y vs. 5y KXD/KXW 1:1</td> <td>5y vs. 10y KXW/KXY 2:1</td> </tr> </table> <p><b>Eris BSBY vs Eris SOFR:</b></p> <table border="1"> <tr> <td>1y vs. 1y KXA/YIA 1:1</td> <td>2y vs. 2y KXT/YIT 1:1</td> <td>3y vs. 3y KXC/YIC 1:1</td> <td>4y vs. 4y KXD/YID 1:1</td> <td>5y vs. 5y KXW/YIW 1:1</td> <td>7y vs. 7y KXB/YIB 1:1</td> <td>10y vs. 10y KXY/YIY 1:1</td> </tr> </table> <p><b>Eris BSBY vs Eris LIBOR:</b></p> <table border="1"> <tr> <td>4y vs. 4y KXD/LID 1:1</td> <td>5y vs. 5y KXW/LIW 1:1</td> <td>7y vs. 7y KXB/LIB 1:1</td> <td>10y vs. 10y KXY/LIY 1:1</td> </tr> </table>								1y vs. 2y KXA/KXT 1:1 TBD	1y vs. 3y KXA/KXC 1:1 TBD	2y vs. 3y KXT/KXC 1:1 TBD	2y vs. 5y KXT/KXW 5:2 TBD	3y vs. 4y KXC/KXD 1:1 TBD	3y vs. 5y KXC/KXW 5:3 TBD	4y vs. 5y KXD/KXW 1:1	5y vs. 10y KXW/KXY 2:1	1y vs. 1y KXA/YIA 1:1	2y vs. 2y KXT/YIT 1:1	3y vs. 3y KXC/YIC 1:1	4y vs. 4y KXD/YID 1:1	5y vs. 5y KXW/YIW 1:1	7y vs. 7y KXB/YIB 1:1	10y vs. 10y KXY/YIY 1:1	4y vs. 4y KXD/LID 1:1	5y vs. 5y KXW/LIW 1:1	7y vs. 7y KXB/LIB 1:1	10y vs. 10y KXY/LIY 1:1
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PAI, or Price Alignment Interest, is the accumulated overnight interest on: Previous day's closing SwapNPV (Eris A value) minus the cash flows taking place on the PAI date. Interest accrues at O/N SOFR. This amount is equivalent to the accumulation of CME's daily price alignment amount.

## The Eris Settlement Price

- A long position in Eris BSBY Swap futures reflects a RECEIVE FIXED / PAY 3M BSBY swap, consistent with the buy/sell direction of other CME Group Interest Rate futures.
- Orders match based on price, using the CME's FIFO matching algorithm, where:
  - Eris Price =  $100 + A + B - C$
  - A = Swap NPV, the net present value of future fixed and floating cash flows, discounted on the SOFR curve
  - B = Past payments of fixed and floating coupon cash flows
  - C = Price Alignment Interest ("PAI"). The accumulated overnight SOFR interest on the sum of the previous day's Swap NPV (the "A" component above) less today's cash flows
  - A, B and C are each expressed in units reflective of a \$100 notional swap. To convert to the dollar value of a single \$100,000 notional contract, multiply by 1,000.

## Converting Eris Price to Equivalent Par Swap Rate

- Equivalent Par Swap Rate% =
  - Eris Contract Fixed Rate % – ((Value of Eris "A" / Contract \$ PV01)/100)%
  - where, Value of Eris "A" is the Swap NPV of a \$100,000 notional swap with swap terms of the Eris contract. This value may be implied from the Eris price as follows:
    - $\$A = (\text{Eris Price} - 100 - B + C) * \$1,000$
- Eris B and C, and other important Eris reference data for converting price to swap rate, such as swap start and end dates, contract coupon and contract PV01 (if not calculating this oneself) are available from [CME DataMine](#), the [Eris Contract Lookup tool](#) (enter contract code), the [Eris ftp server](#), or the [Eris Live Markets Microsoft Excel add-in](#).
- A summary of available Eris data may be found at [www.erisfutures.com/cme/data](http://www.erisfutures.com/cme/data), but Eris swap dates, B and C values, and PV01s may be found in the Eris\_Instruments\_YYYYMMDD files, as follows:
  - Eris B, C and PV01s may be found in columns AD, AE and BF in the following daily files, in file location <http://files.erisfutures.com/ftp/> (the Eris ftp folder):
    1. Eris\_Instruments\_YYYYMMDD\_Prices\_Prev\_PAI\_Rate.csv
      - Available at approximately 3:40 p.m. ET on the business day prior to each trade file. File publishes B, and an estimate of C prior to SOFR being released at 8 a.m. ET on the trade date.

2. Eris\_Instruments\_YYYYMMDD\_Prices\_TopDay\_PAI\_Rate.csv
  - Available at approximately 8:10 a.m. ET on each trade date. File publishes B (same value as in Prev\_PAI\_Rate file), and final C for the trade date following the release of SOFR at 8 a.m. ET.
3. Eris\_Instruments\_YYYYMMDD\_Settles.csv
  - Daily settlement file; B and C remain same as in the TopDay\_PAI\_Rate csv file.
  - [Full data field glossary table.](#)

## Execution

- Eris BSBY Swap futures are tradable on CME Globex, CME Direct or 3rd-party e-trading platforms connected to CME Globex.
- Block trading: Eris contracts may be privately negotiated ("PNT") subject to preapproval of credit limits and CBOT rulebook guidelines:
  - Minimum block trading size: 100 Eris contracts for outright trades, or 100 total Eris contracts for multi-leg trades (any combination of Eris Swap futures).
- Trading off-the-run contracts and contracts without live order books: all Eris contracts are accessible for trading on CME Globex, CME Direct and for submission to CME Clearing as block trades and EFRPs via CME Direct or CME ClearPort. Where an order book may no longer be streaming, trading may take place by electronic Request for Quote or via Block/PNT trading.

## Market Data & the Eris Excel Addin

- CME Group publishes real-time Eris market data on CME Globex, CME MDP 3.0 (channel 344) and Eris reference and historical data on CME DataMine.
- Eris BSBY Swap futures settle to the Eris BSBY Swap Curve at 3 p.m. ET daily. The Eris BSBY Curve is anchored to executable prices in the central limit order books of Eris BSBY contracts at 3 p.m. ET and the full curve is fitted to price all off the run Eris BSBY contracts.
- Eris Innovations distributes the Live Eris BSBY Swap Curve and various market data based on this curve, including live pricing of Eris contracts in multiple formats, implied spot starting par BSBY swap rates, PV01s, DV01s, CME maintenance margins and theoretical mid prices of contracts without live order books through a number of channels, including the Eris Innovations website and a Microsoft Excel add-in; to learn more and to obtain access to function, go to [erisfutures.com/cme/swapcurve](http://erisfutures.com/cme/swapcurve).

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