

Interest Rate futures & options

Trading and liquidity review for full-year 2023

January 2024

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Introduction

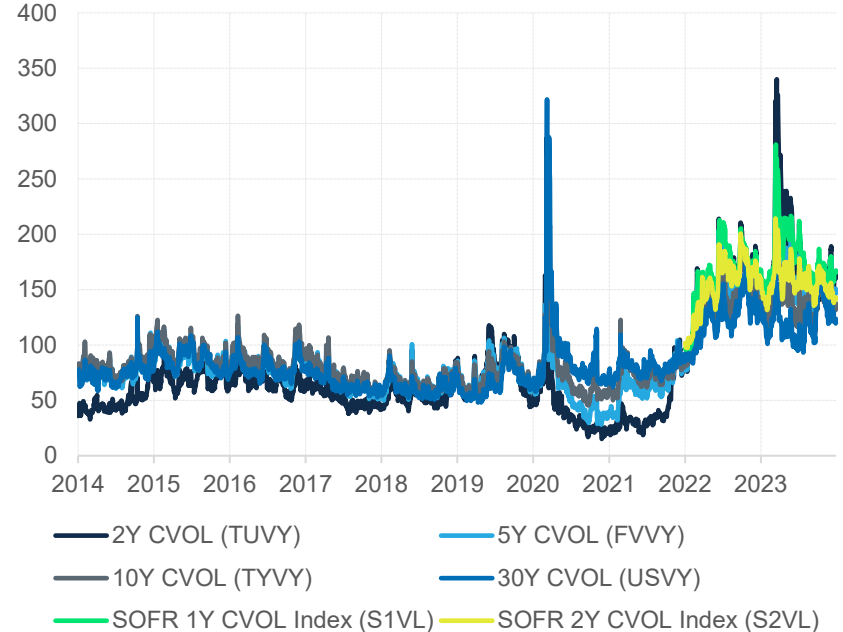
2023 saw record demand for interest rate risk management as increasing surging yields, debt issuance, quantitative tightening and a tough balancing act for the Fed led to elevated volatility across the curve.

Through it all, CME Group was a venue of choice for managing risk, providing participants with deep liquidity across short-, medium, and long-term rates, and safe and efficient markets anchored by CME Clearing.

In this deck we summarize the resiliency of liquidity in these markets by analyzing key measures of liquidity:

- ADV: quantifies demand for risk transfer daily
- OI: is the total size of open positions that are being managed by market participants
- LOIH: a fair proxy for breadth of market participation among firms holding significant positions
- Cost to trade: Book depth and bid-ask spreads relative to volatility

Interest rates saw elevated volatility persist throughout 2023



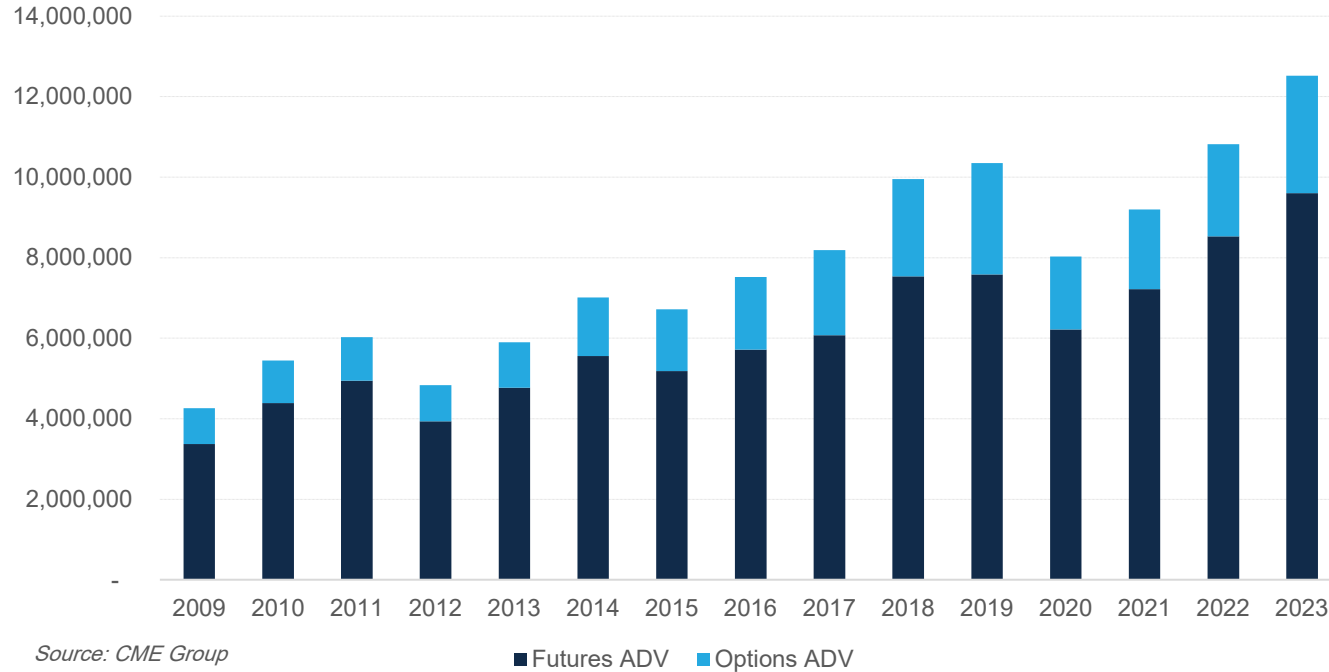
Source: CME Group

Liquidity analysis

Liquidity can be defined broadly as a market participant's ability to convert assets into cash or to enter/exit a position with ease; and is therefore proportional to indicators such as average daily volume, open interest, breadth of participation, and cost to trade. The following summarizes performance in those four key liquidity measures.

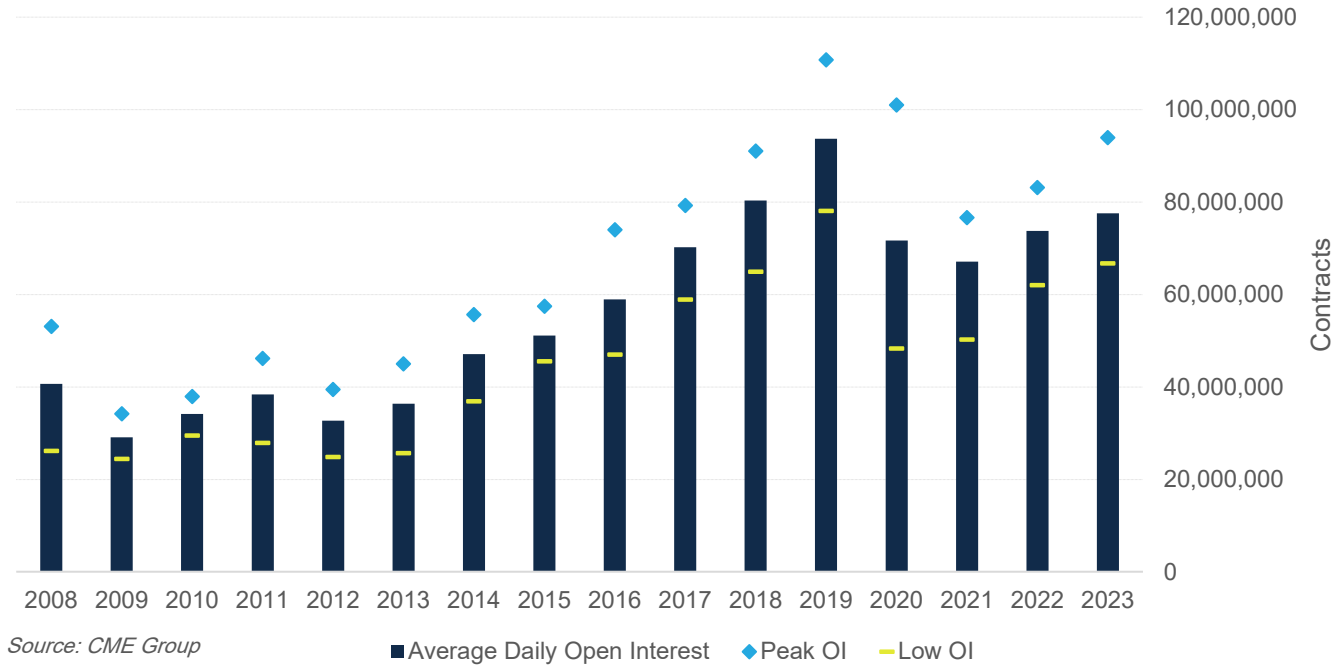
Average daily volume increased to a record 12.5 million contracts per day

Interest Rate futures and options annual ADV

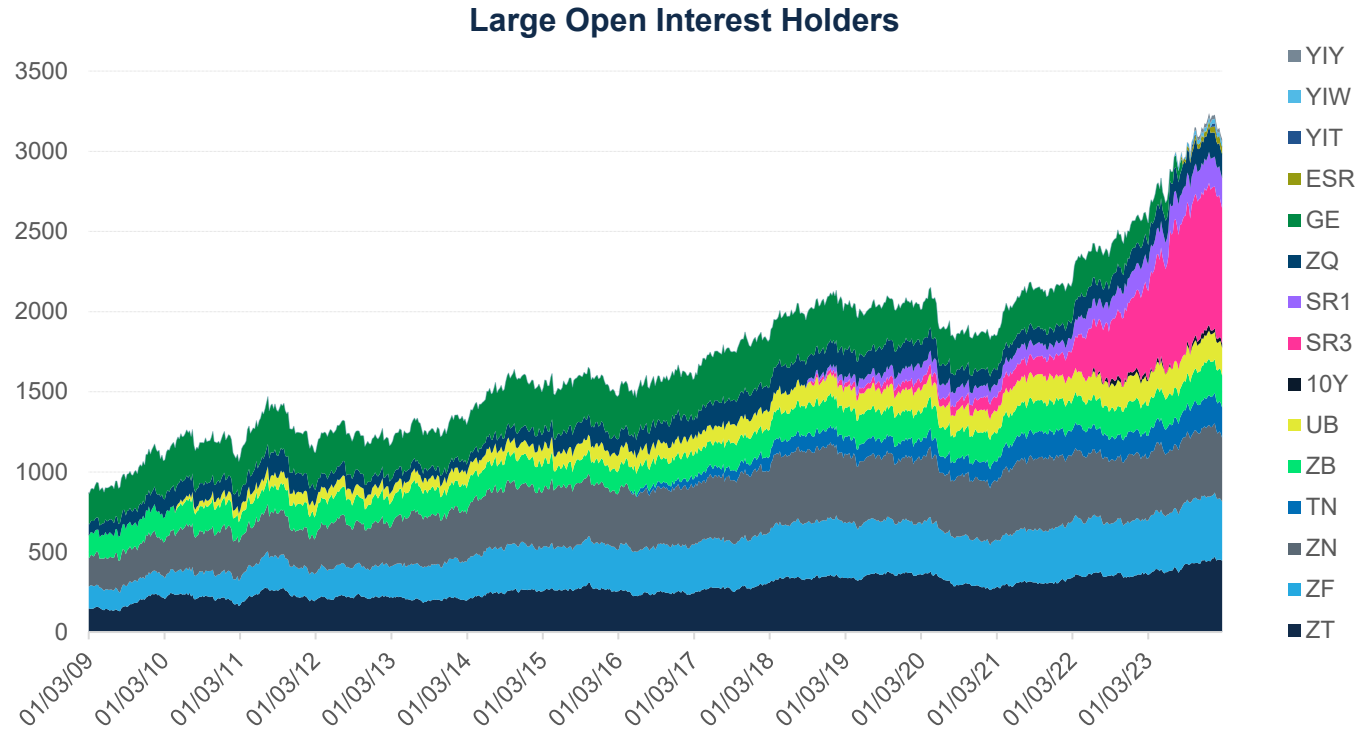


Average daily open interest rose 5% to the third highest all-time

Interest Rates Open Interest



Large open interest holders expanded to record levels



Source: CFTC

Cost to trade proved highly resilient to high volatility and record demand

Analysis into market liquidity considers three interconnected metrics: market conditions, demand, and supply.

These factors, taken together, demonstrate how liquidity and the Cost-to-Trade (CTT) are impacted by changing market dynamics and increased demand as measured by the volume throughput of the order book.

- Market Conditions (Daily True Range)
- Supply (Cost to Trade in the contract)
- Demand (Volume in the contract)

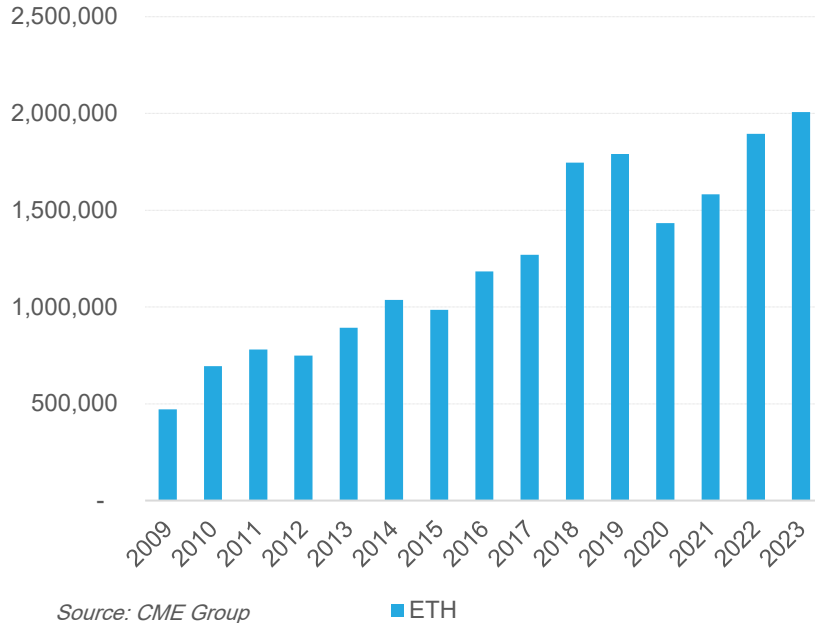
Dividing the cost to trade by the daily true range creates a “risk-adjusted cost-to-trade” which represents the CTT as a percentage of the daily range.

	Baseline (2021)	2023	% Change
2-Year T-Note Futures			
Avg. Daily True Range	15.23 (ticks)	65.21 (ticks)	+328.31%
Avg. Daily Volume	0.93m	2.22m	+139.48%
Avg. Cost to Trade, 1000 Lots	1.10 (ticks)	1.78 (ticks)	+61.56%
CTT / DTR %	11.67%	3.25%	-72.14%
5-Year T-Note Futures			
Avg. Daily True Range	37.01 (ticks)	73.21 (ticks)	+97.80%
Avg. Daily Volume	2.28m	3.52m	+54.26%
Avg. Cost to Trade, 1000 Lots	1.20 (ticks)	1.60 (ticks)	+32.87%
CTT / DTR %	3.92%	2.52%	-35.74%
10-Year T-Note Futures			
Avg. Daily True Range	34.31 (ticks)	52.58 (ticks)	+53.24%
Avg. Daily Volume	4.82m	5.65m	+17.22%
Avg. Cost to Trade, 500 Lots	1.03 (ticks)	1.07 (ticks)	+4.27%
CTT / DTR %	3.48%	2.36%	-32.12%

Source: CME Group

Near 24-hour liquidity enabled efficient risk transfer across time-zones

Interest Rates ADV -- European Trading Hours

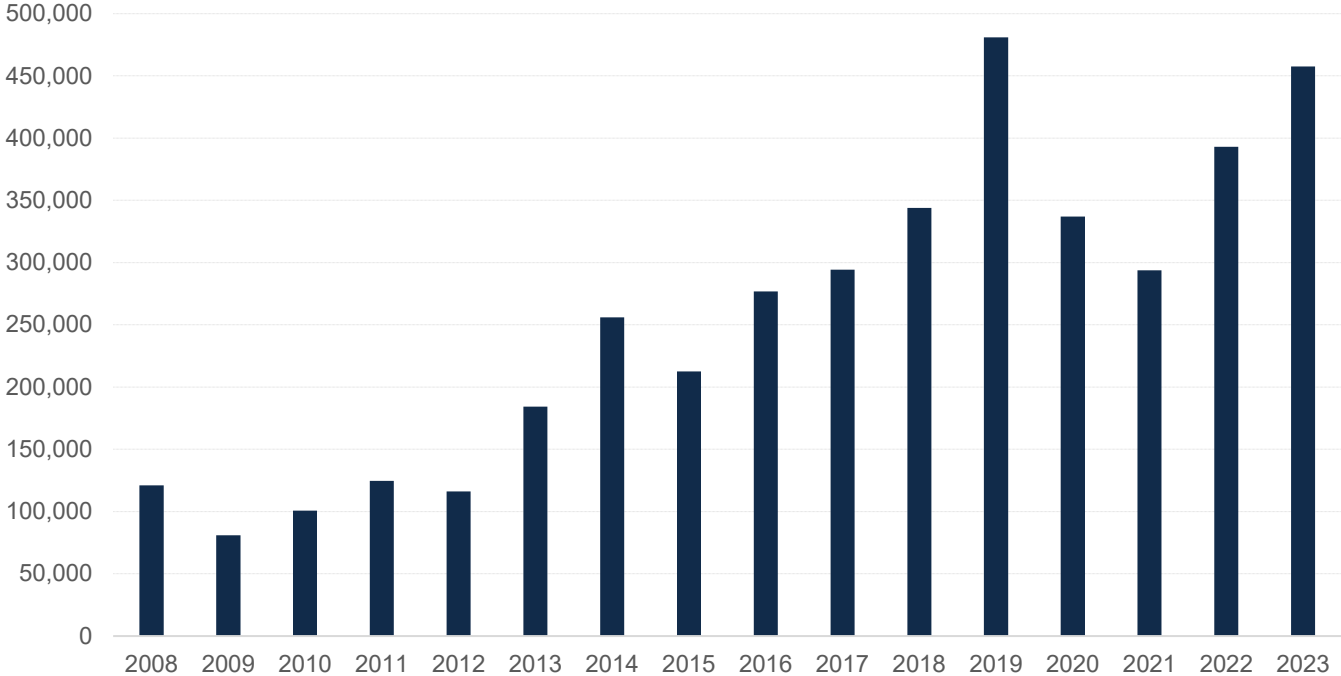


Interest Rates ADV -- Asian Trading Hours



Active bilateral markets (blocks, EFRs, EFPs) complemented CLOB liquidity

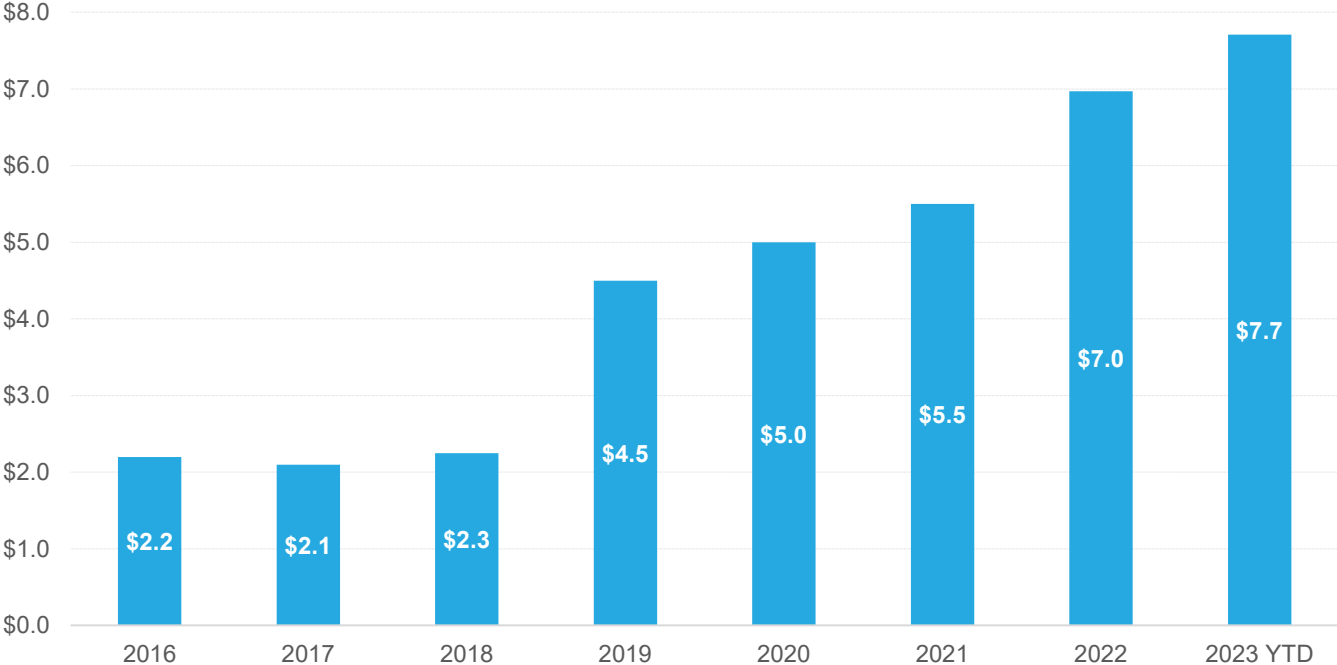
Interest Rates ADV via blocks and EFRPs



Source: CME Group

Portfolio Margining of cleared swaps vs. listed F&O unlocked average daily savings of nearly \$8 billion for firms in 2023

Average Daily Portfolio Margining Savings (\$B)

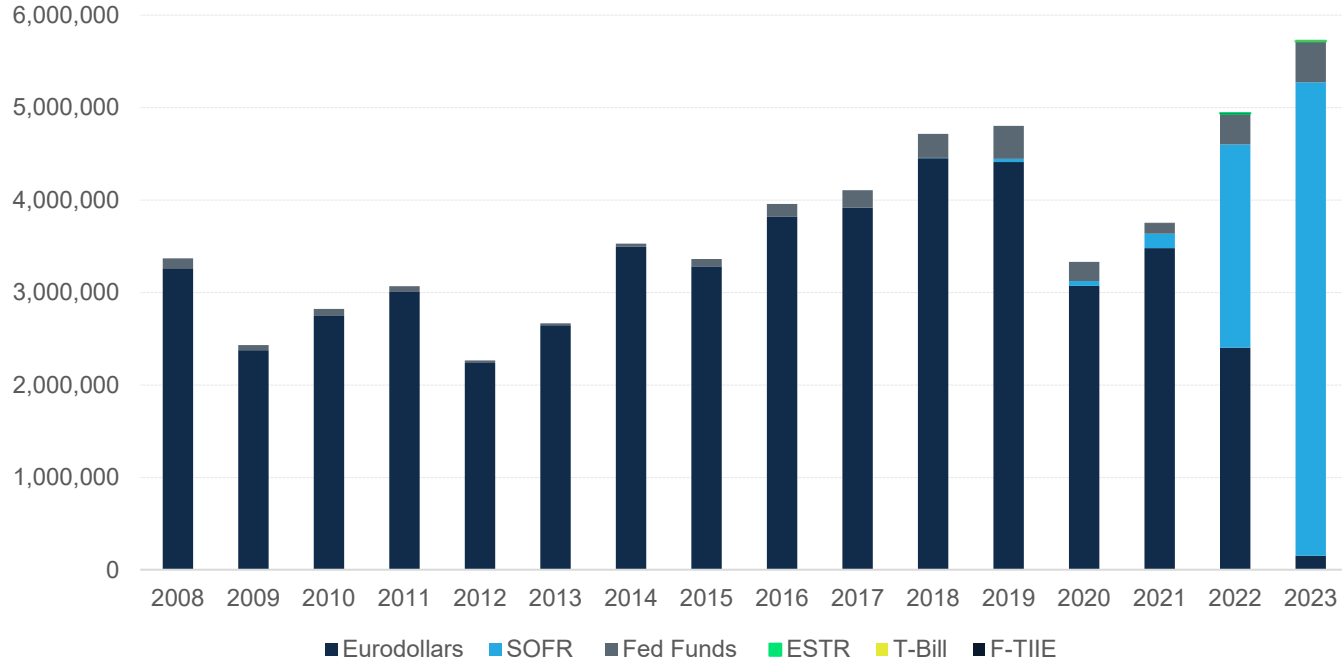


Source: CME Group

Short-Term Interest Rates (STIRs)

Short-Term Interest Rate (STIR) volumes rose 16% vs. 2022's record

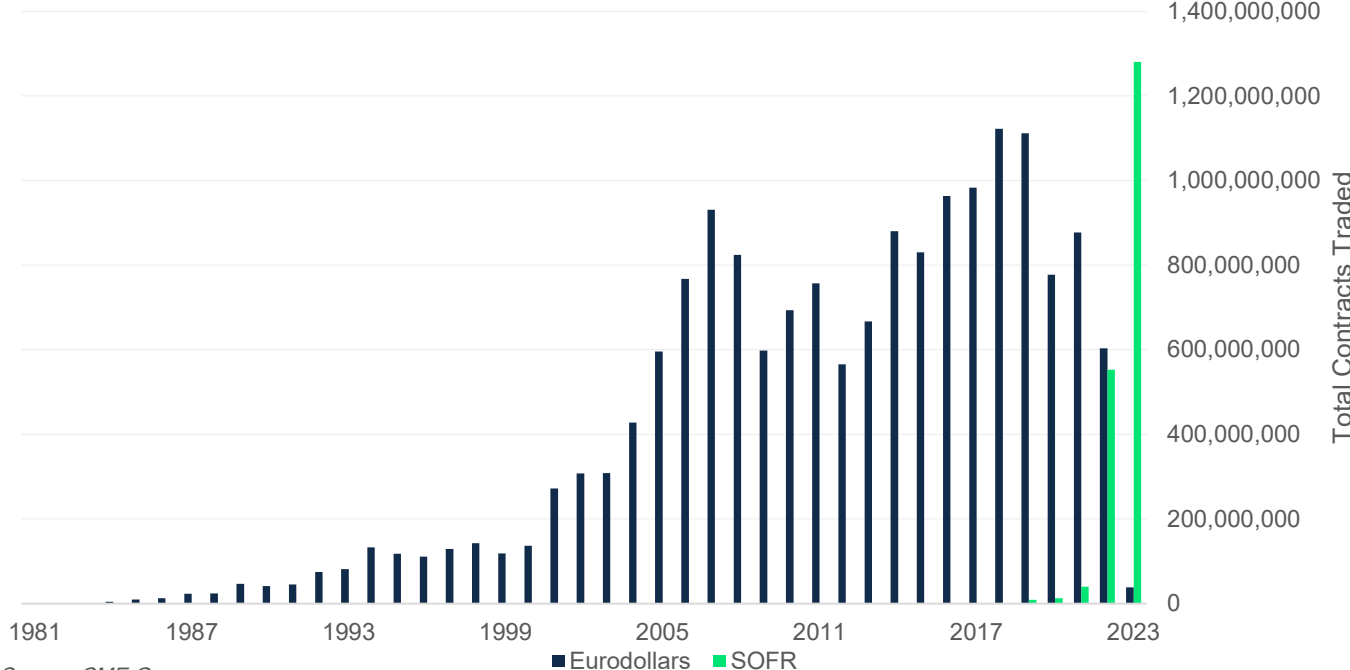
STIR futures and options ADV



Source: CME Group

SOFR futures and options traded 1.28 billion contracts (5.1M ADV), surpassing Eurodollars' highest ever annual volume

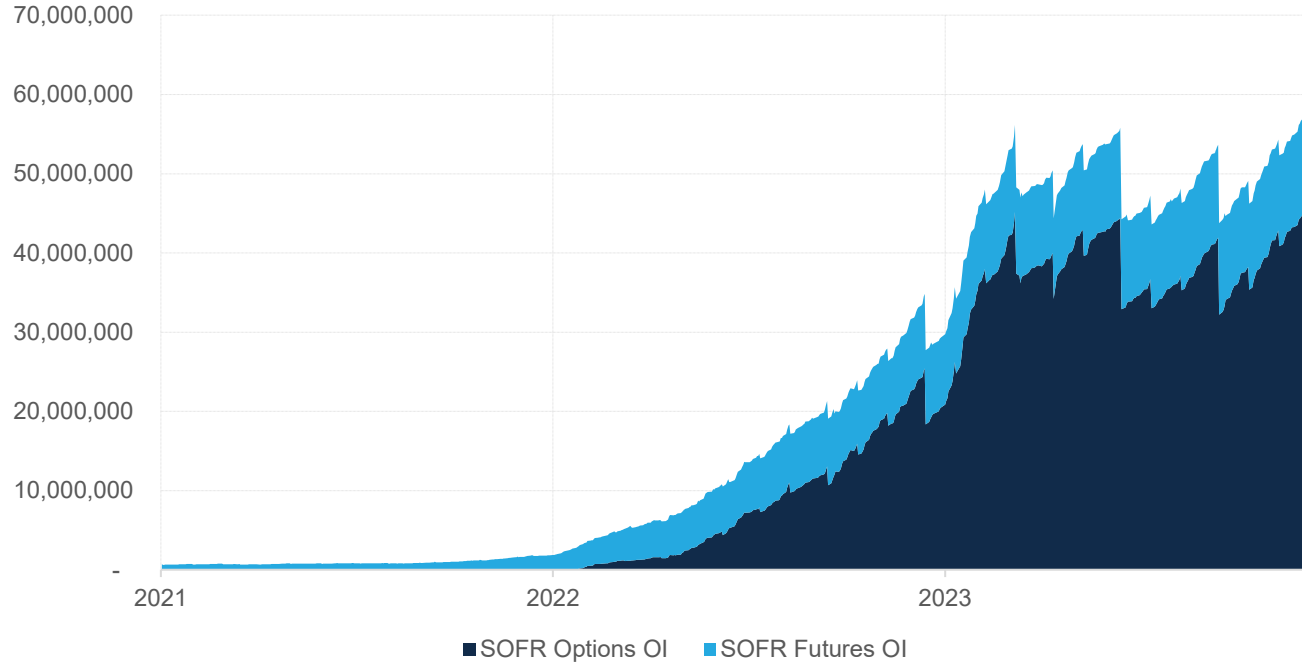
SOFR volumes in 2023 eclipsed Eurodollars' all-time high



Source: CME Group

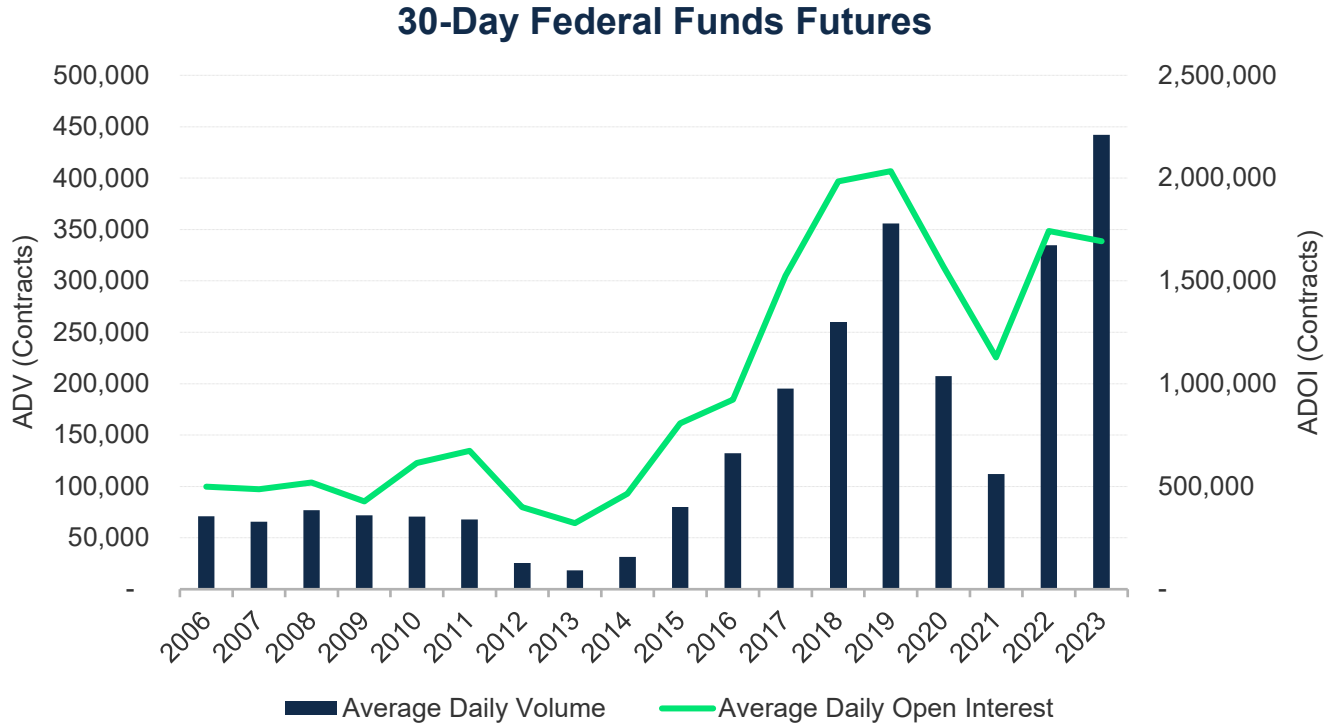
Open interest in SOFR futures and options surpassed 60 million contracts

SOFR Futures and Options Open Interest



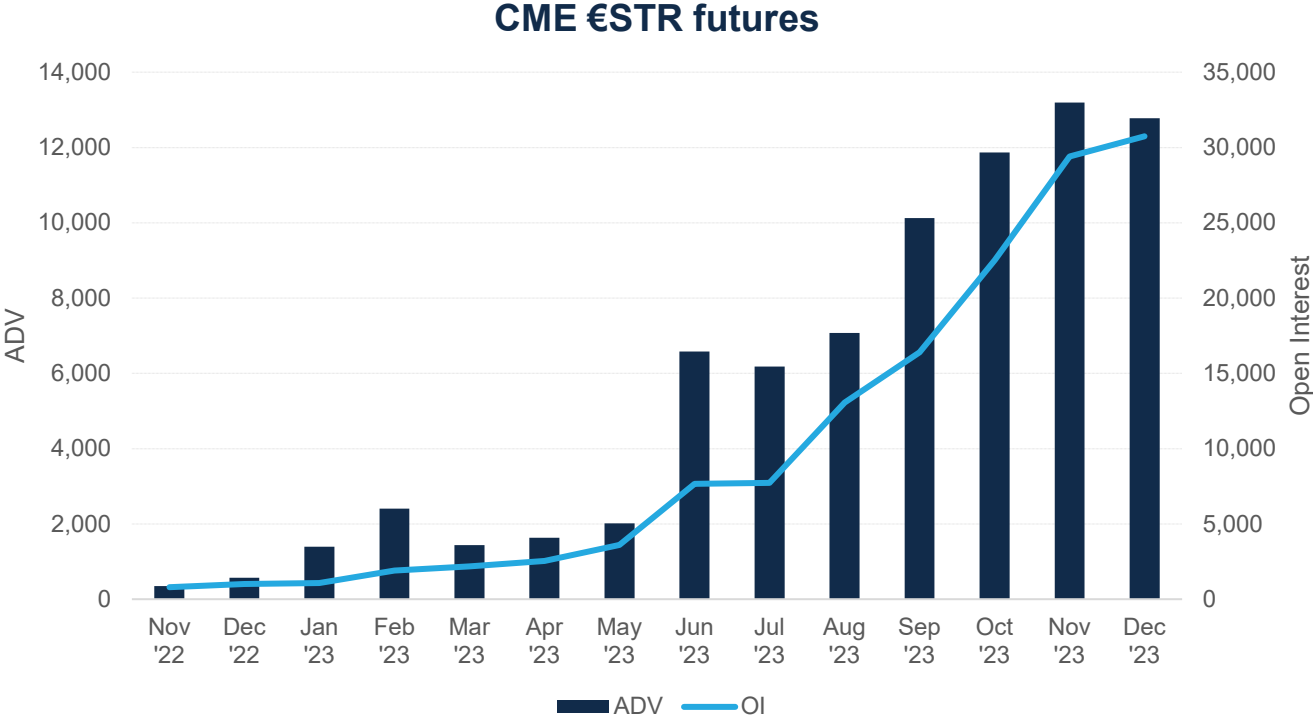
Source: CME Group

Fed Funds volumes bested their 2019 record by 24%



Source: CME Group

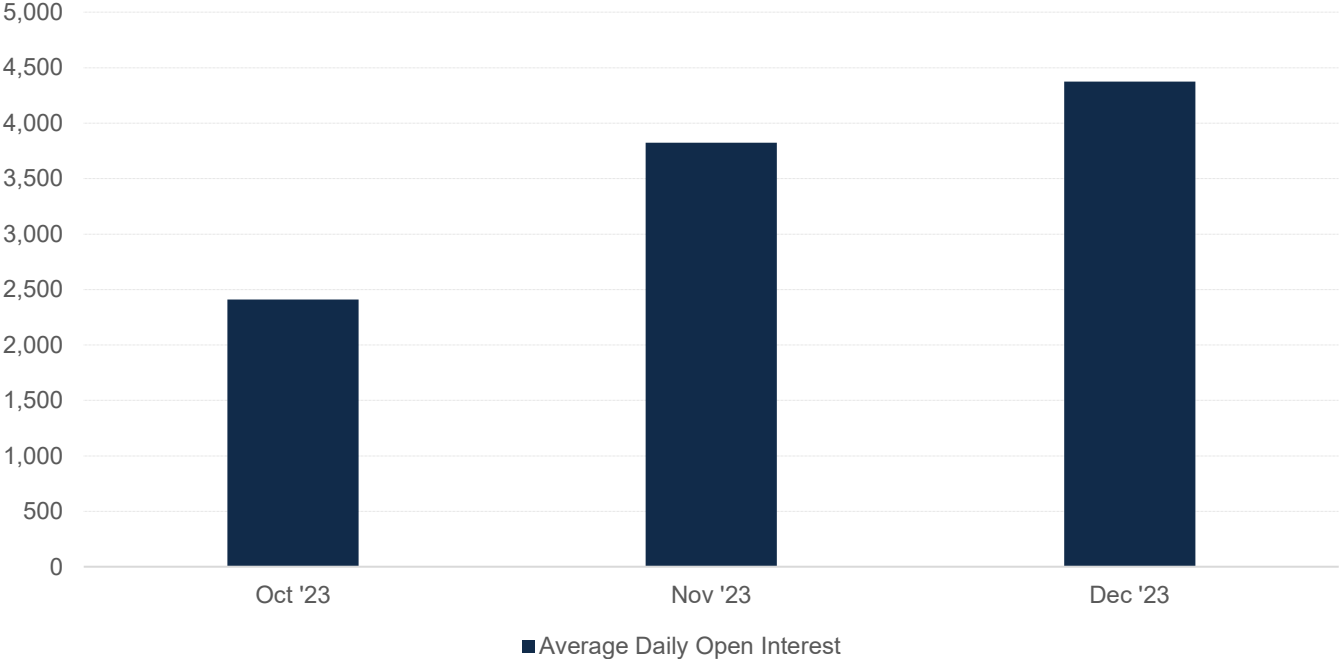
€STR futures liquidity deepened, and participation broadened



Source: CME Group

T-Bill futures saw strong adoption following Oct. 2 launch

13-Week T-Bill futures

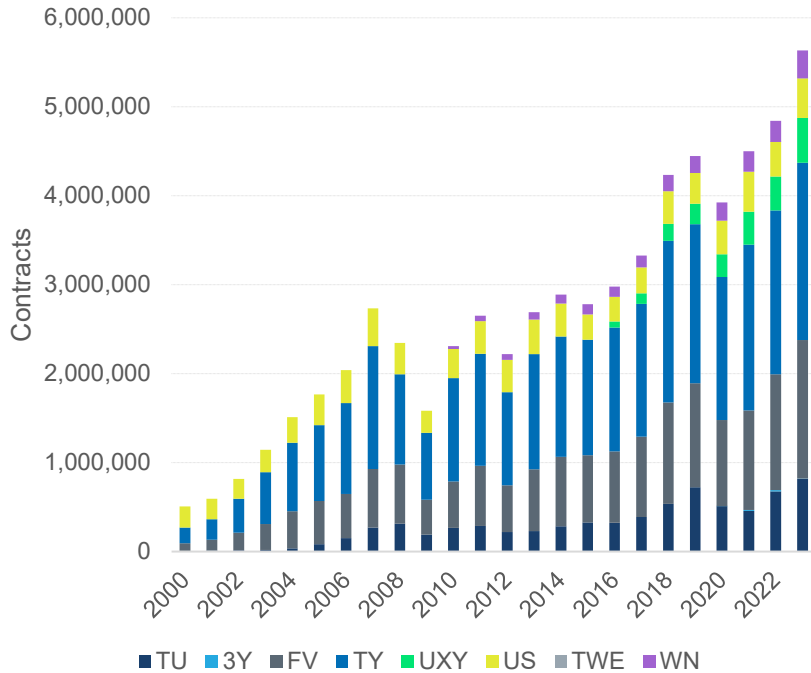


Source: CME Group

U.S. Treasuries

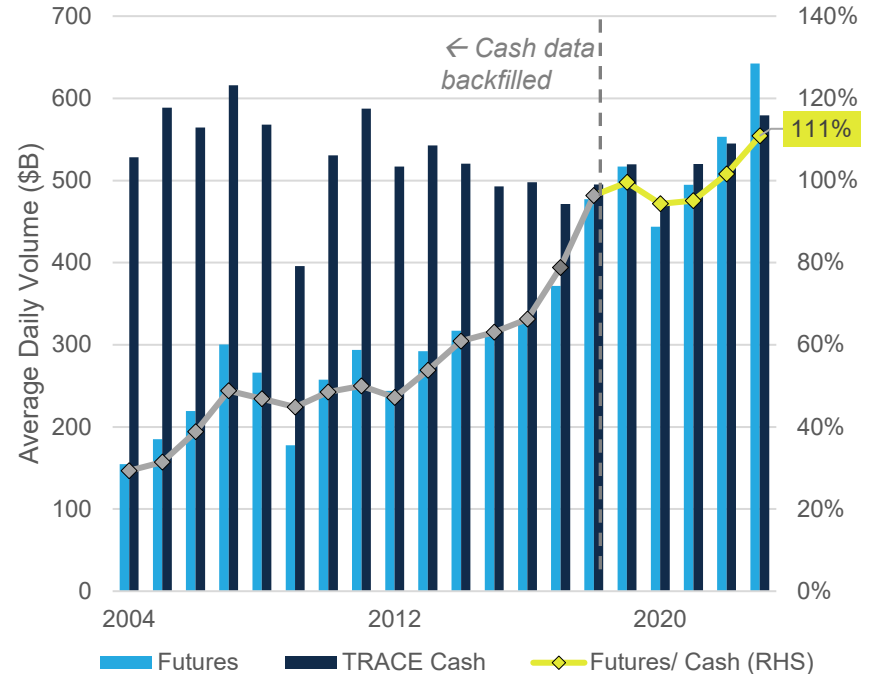
Treasury futures ADV rose to a third consecutive record, averaging \$645B notional per day, or 111% of the cash Treasury market

Treasury futures ADV



Source: CME Group

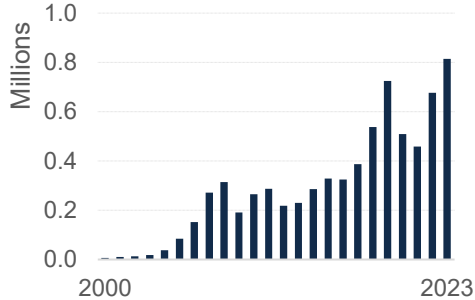
Treasury Futures vs. Cash Treasury Volumes



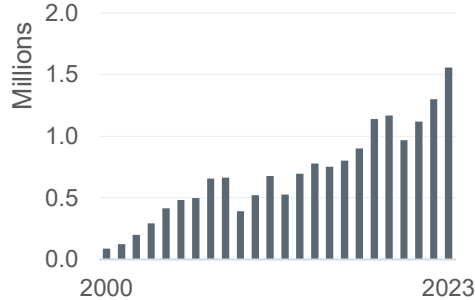
*Prior to 2019, TRACE Cash is backfilled as 120% of primary dealer volumes reported by the FRBNY.

TU, FV, TY, UXY, and WN all hit new ADV records

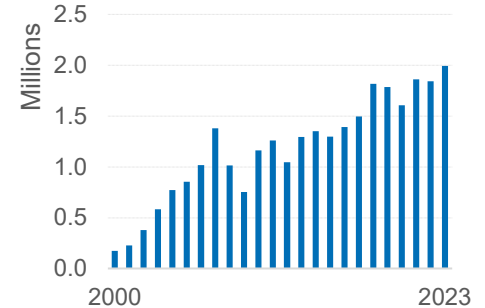
2-Yr (TU)



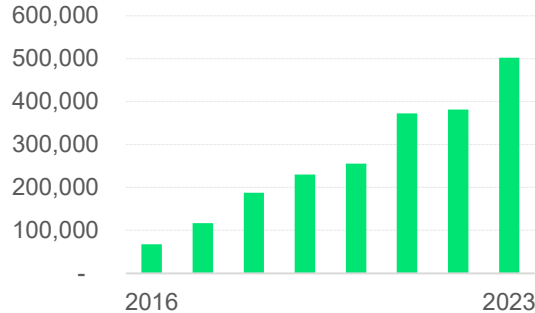
5-Yr (FV)



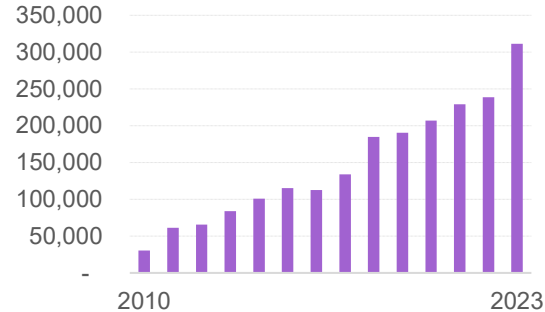
10-Yr (TY)



Ultra 10-Yr (UXY)



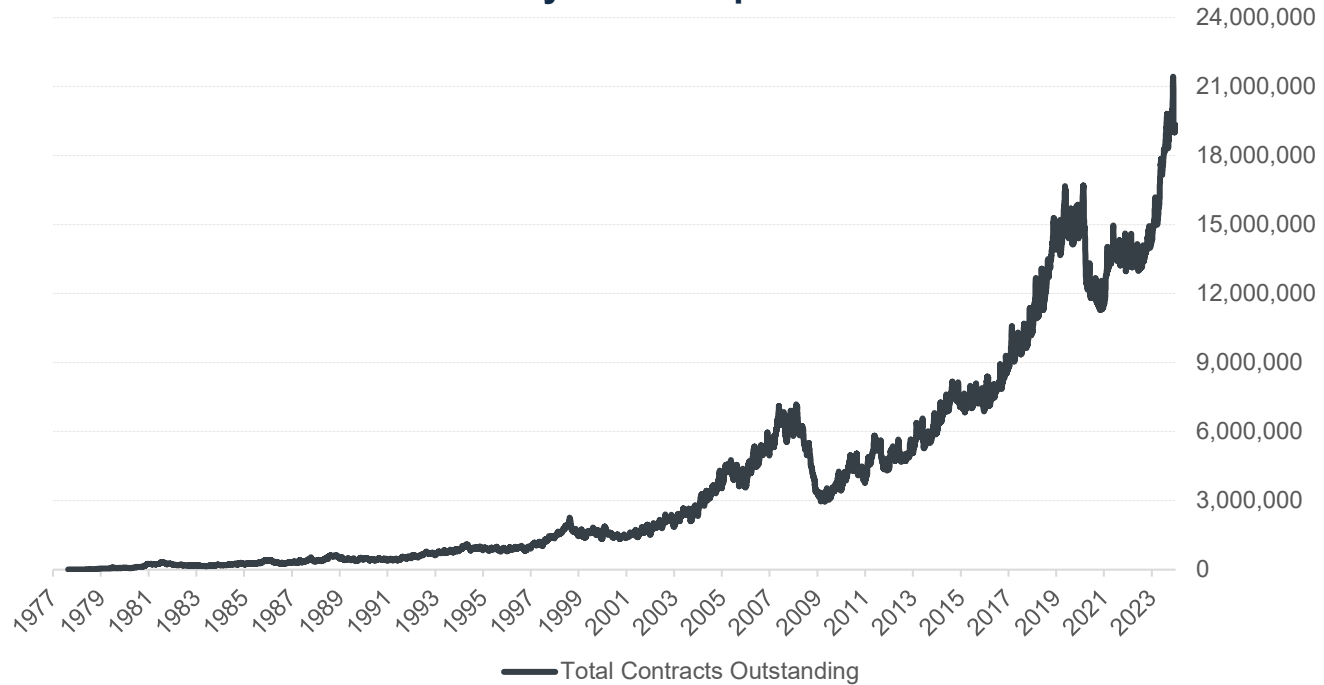
Ultra Bond (WN)



Source: CME Group

Open interest in Treasury futures soared to over 21 million contracts

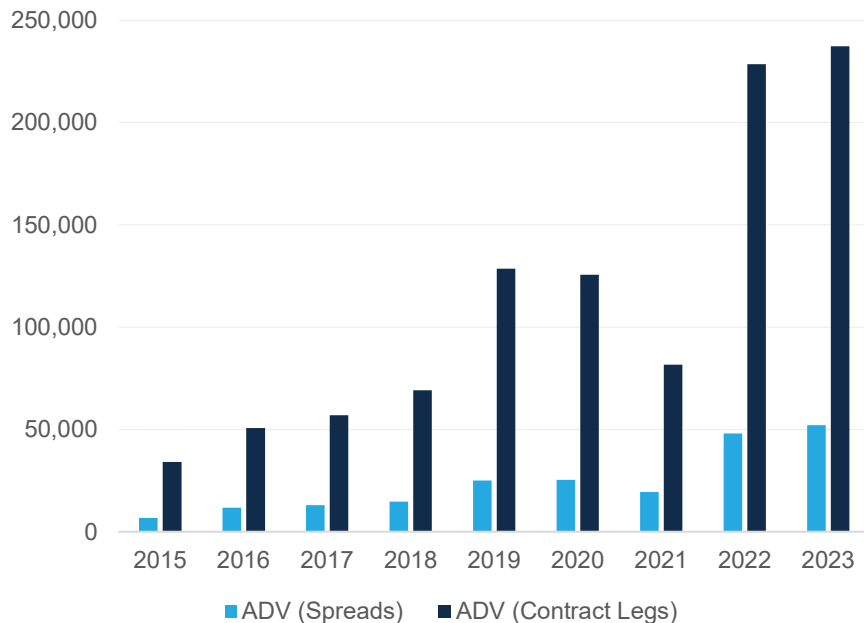
Treasury futures open interest



Source: CME Group

Curve trading via inter-commodity spreads reached new highs

Treasury Futures Inter-Commodity Spreads (ICS)



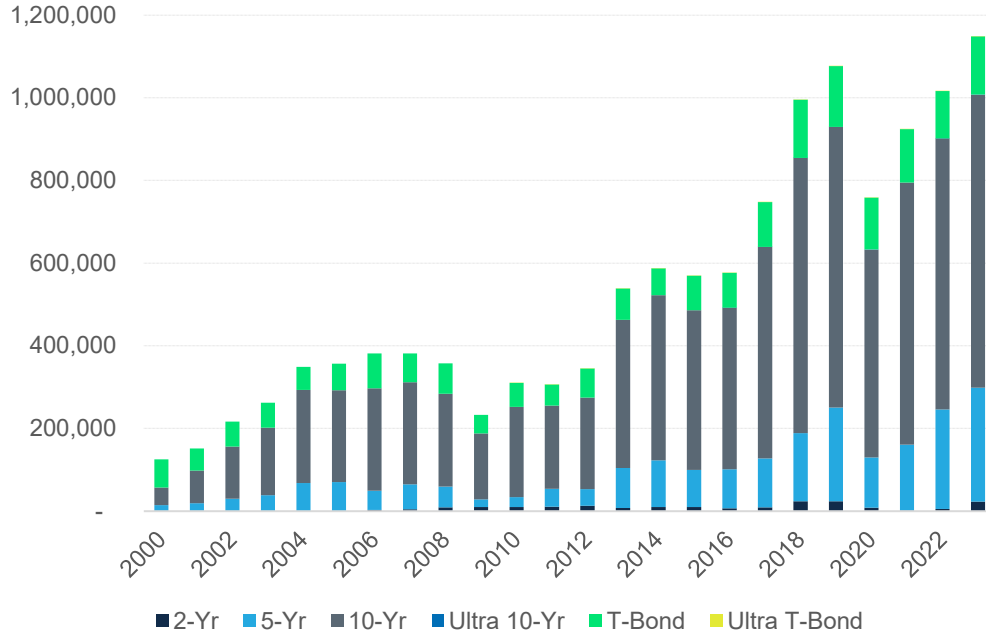
Top pairs traded in 2023

Pair	ICS instrument(s)	2023 ADV (Contract Legs)	2023 ADV (Spreads)
5Y/10Y	FIT/FYT	125,625	26,133
2Y/5Y	TUF/TFY	51,533	9,752
Ultra10Y/30Y	NCB	13,992	2,798
10Y/Ultra10Y	TEX	13,103	3,788
10Y/30Y	NOB	12,445	4,148

Source: CME Group

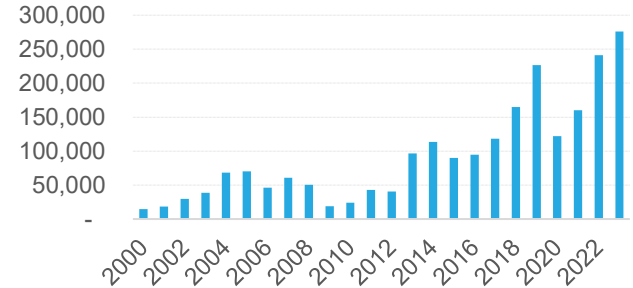
Treasury options ADV reached new highs with record trading in 5-Year and 10-Year options, and renewed liquidity in Ultra 10-Year options

Treasury options ADV

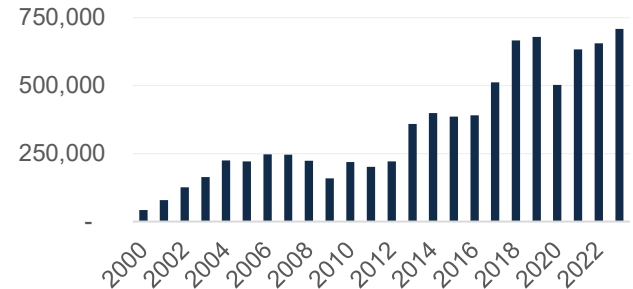


Source: CME Group

5-Year options ADV



10-Year options ADV



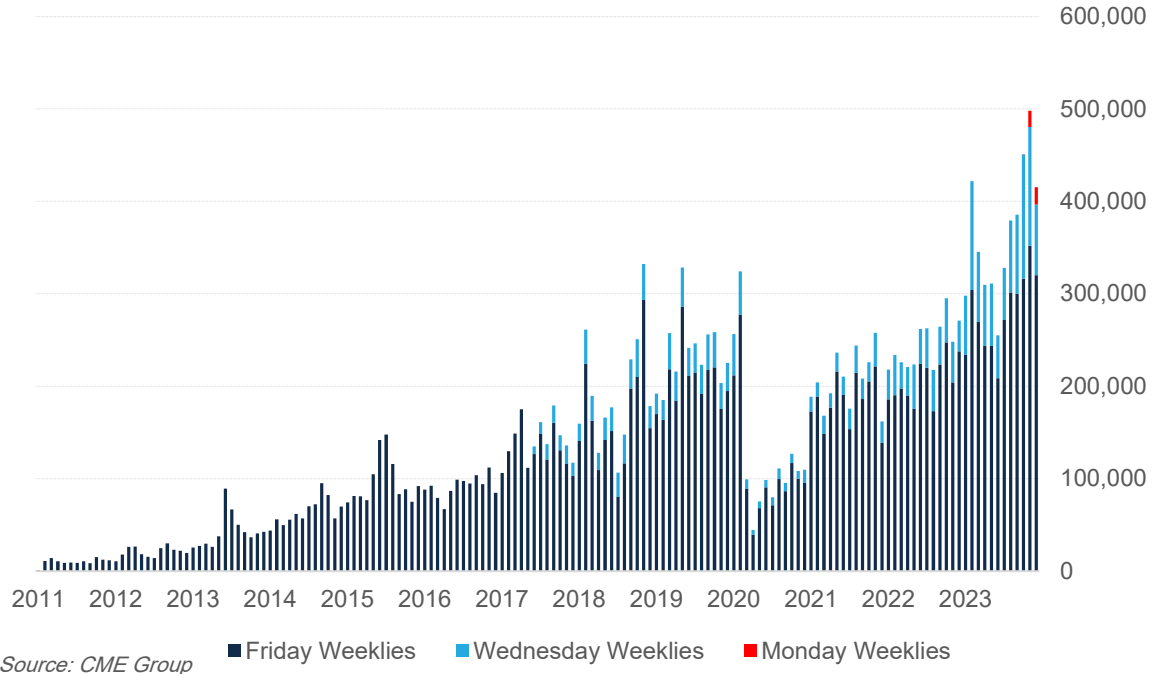
Weekly Treasury options provided key liquidity & short-term flexibility for hedging event risks

Monday-expiring weeklies, launched in October 2023, found instant utility as a precise hedge for weekend risk.

Wednesday weeklies were paramount as a hedging tool for FOMC and CPI. ADV grew to a record 83K contracts in 2023, more than doubling 2022's prior record

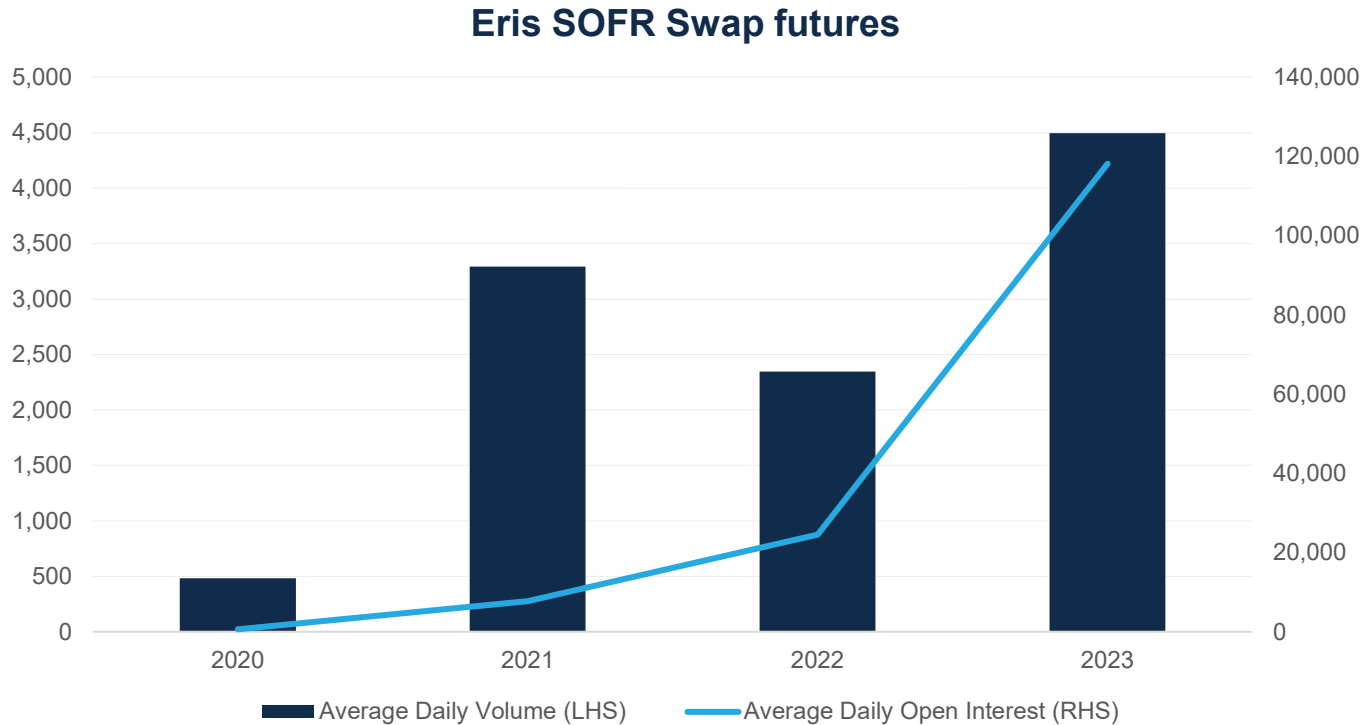
Friday weeklies remained the key tool for managing Non-Farm Payrolls.

Weekly Treasury Options Monthly ADV



Eris SOFR Swap futures

Eris SOFR became the primary swap futures liquidity pool

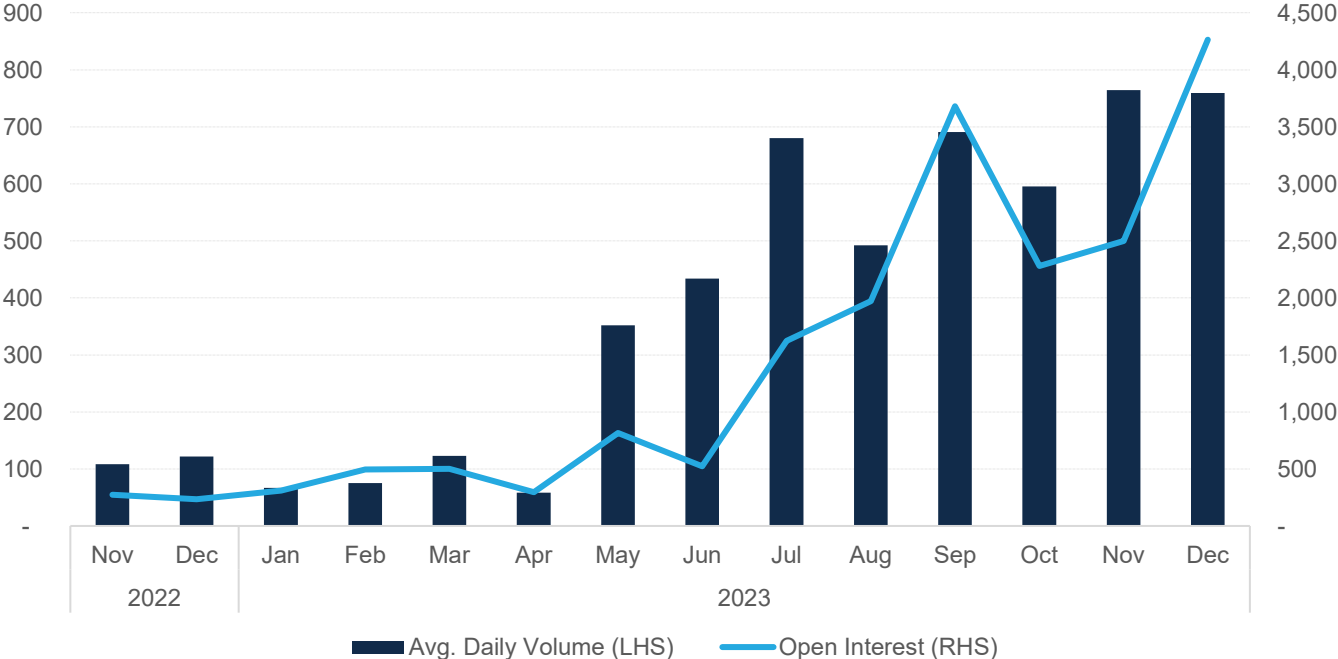


Source: CME Group

TBA futures

TBA futures saw strong growth, bringing efficient, all-to-all, electronic access to the second largest fixed income market in US

TBA futures monthly trading activity



Source: CME Group

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