

OTC SOFR Swaps Clearing

Q4 2018

CME SOFR Offering

The Secured Overnight Funding Rate (SOFR)

- **What is SOFR?** Endorsed by the Alternative Reference Rate Committee (ARRC) in June 2017, the Secured Overnight Financing Rate (SOFR) is a broad Treasuries overnight repo financing rate to be published by the Federal Reserve Bank of New York and the Office of Financial Research. SOFR has been identified by the Alternative Reference Rate Committee (ARRC) as the preferred alternative reference rate for the USD marketplace.
- **SOFR Publication and Trading:** As of April 3, 2018 the Federal Reserve Bank of New York and the Office of Financial Research began publishing SOFR at 8:00am ET each day. The SOFR rate represents the volume-weighted median repo rate of the previous day's relevant transactions. **CME Group launched trading in SOFR Futures on May 7, 2018 and clearing for OTC SOFR Swaps on October 1, 2018.**
- **Additional Information:** More information on industry/CME timelines, SOFR Futures, and ARRC is available through the CME Group website: <https://www.cmegroup.com/sofr>

Based on extensive customer input, CME Group launched 3-Month and 1-Month SOFR Futures contracts

SOFR Futures Product Development Timeline



- The 3-Month SOFR futures strip consists of 20 quarterly contracts which settle to the compounded SOFR in a given reference period between two IMM dates
- The 1-Month SOFR futures strip consists of 7 monthly contracts which settle to the arithmetic average of SOFR in a given calendar month

Complementarity between SR3 and SR1: The 1-Month SOFR futures strip will prove useful to market participants who seek finer granularity in framing market expectations of future SOFR values over the nearby 1-month to 7-month interval during which the front 3-Month contract becomes more set each day from daily SOFR fixings.

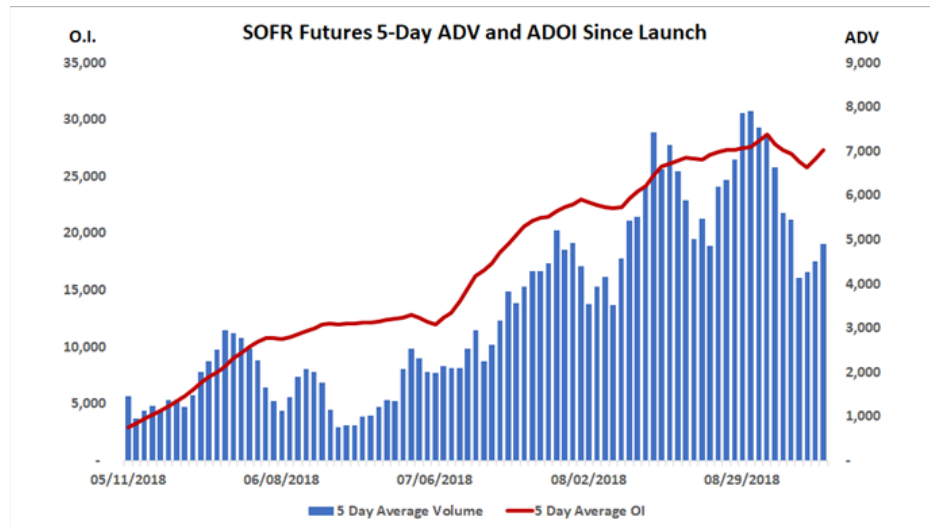
After the nearby contract enters its Reference Quarter, the contract rate becomes a mix of (i) known SOFR values, ie, published values for all days from start of the Reference Quarter to the present, and (ii) market expectations of SOFR values for all remaining days in the Reference Quarter that lie ahead.

SOFR Update – September 2018

CME SOFR Futures

In 90 Trading Days (May 7 – Sept)...

- \$118B in notional open interest (32.8K contracts)
- \$771B in cumulative notional volume (340K contracts)
- ADV reached about 5K contracts/day in September
- 70+ global participants including banks, buy-side, PTFs
- Term structure extends out over 3 years
- [SOFR OIS and Basis Swaps Launch October 1](#)



Financial Ecosystem Adoption of SOFR Takes Critical Steps Forward in Q3

SOFR Floating Rate Note Issuances				
	Issuer Name	Issue Date	Notional	Tenor
	Fannie Mae	7/30/2018	\$1,500,000,000	1.5
	Fannie Mae	7/30/2018	\$2,500,000,000	0.5
	Fannie Mae	7/30/2018	\$2,000,000,000	1.0
	World Bank	8/21/2018	\$1,000,000,000	2.0
	Credit Suisse AG/NY	8/21/2018	\$100,000,000	0.5
	MetLife	9/7/2018	\$1,000,000,000	2.0
	Triborough Bridge and Tunnel	9/20/2018	\$107,280,000	30.0
	Wells Fargo	9/25/2018	\$1,000,000,000	1.5
	Total		\$9,207,280,000	

CME SOFR Futures

The Futures Contract Specifications

	3-Month SOFR Futures	1-Month SOFR Futures
Contract Unit	Compounded daily SOFR interest during contract reference quarter.	Average daily SOFR interest during futures contract delivery month.
Price Basis	Contract-grade IMM Index: 100 minus R	Contract-grade IMM Index: 100 minus R
Contract Size	\$25 per basis point per annum	\$41.67 per basis point per annum
Minimum Price Fluctuation	Nearby Delivery Month: 0.0025 IMM Index points (¼ basis point per annum) equal to \$6.25 per contract	Nearby Delivery Month: 0.0025 IMM Index points (¼ basis point per annum) equal to \$10.4175 per contract
	All Other Delivery Months: 0.005 IMM Index points (½ basis point per annum) equal to \$12.50 per contract	All Other Delivery Months: 0.005 IMM Index points (½ basis point per annum) equal to \$20.835 per contract
Delivery Months	Nearest 20 March Quarterly months	Nearest 7 calendar months
Globex Product Code	SR3	SR1

CME SOFR Futures

Intercommodity Spreads & Margin Offsets

- CME Globex offers spread instruments that reduce leg risk and improve liquidity formation by matching orders from related markets
- We will offer inter-commodity spreads between short term interest rate futures
 - *Eurodollars vs. Fed Fund Futures - launched March 12*
 - *1-Month SOFR vs. Fed Fund Futures (with implied functionality)*
 - *3-Month SOFR Futures vs. Eurodollar Futures (with implied functionality)*
 - *3-Month SOFR Futures vs. 1-Month SOFR Futures*
 - *3-Month SOFR Futures vs. Fed Fund Futures*
- Implied functionality creates orders using related spread markets.
 - *For example, if there are market makers providing liquidity in 1-Month SOFR vs. Fed Fund Futures, the CME Globex match engine will use this in combination with the Fed Fund markets to create orders in the SOFR outright*
- ***CME Clearing will provide margin offsets of up to 85% between related STIR Futures***

CME OTC SOFR Swaps

The OIS Product Scope

- Clearing OTC SOFR Swaps further extends CME Group's leadership as the only clearing house to offer clearing for Interest Rate Swaps, Swaptions and Interest Rate Futures within a single netting pool.
- The deep liquidity and potential offsets found in our Interest Rate franchise make CME the natural home for SOFR clearing.

SOFR OIS (SOFR vs fixed)

Currency	USD
Floating Index	USD-SOFR-COMPOUND
Compounding	Daily Compounding of the SOFR Leg
Floating Index Tenor	1 Day
Max Maturity	30 Years
Payment Offset	SOFR: 2D Fixed: 0D or 2D

CME OTC SOFR Swaps

The Basis Product Scope

SOFR vs USD-LIBOR Basis Swap

Currency	USD
Floating Index	USD-LIBOR-BBA vs USD-SOFR-COMPOUND
Compounding	Daily Compounding of the SOFR Leg
Floating Index Tenor	LIBOR = 1, 3 & 6 Month
Max Maturity	30 Years
Payment Lag	SOFR: 2D LIBOR: 0D or 2D

SOFR vs Fed Funds Basis Swap

Currency	USD
Floating Index	USD-Federal Funds H.15-OIS - COMPOUND vs USD-SOFR-COMPOUND
Compounding	Daily Compounding of the SOFR and EFFR Legs
Floating Index Tenor	1 Day
Max Maturity	30 Years
Payment Offset	SOFR: 2D EFFR: 2D

CME OTC SOFR Swaps

Additional OTC SOFR Features

OTC Cleared SOFR

Forecasting and Discounting Curves	USD-SOFR Curve
Price Alignment Rate	USD-SOFR
Settlement Convention	T +1
Reset Calendar	US Gov Securities
Payment Calendar	USNY
Spreads Above and Below Index	Supported on all SOFR, LIBOR and EFR Indices

Clearing Online Risk Engine (“CORE”) Margin Tool

CME CORE Capabilities
CME PRODUCTS SUPPORTED
Futures and Options <i>Agriculture, Energy, Equity Index, FX, Interest Rates, Metals</i>
Interest Rate Swaps
FX Non-Deliverable Forwards and Cash-Settled Forwards
FUNCTIONALITY
Optimizer for Portfolio Margining
Interest Rate Portfolio Margining
Portfolio/Trade Editing
Portfolio/Trade History
Incremental Margin
Estimator/Delta Ladders

- Ideal business user solution for Portfolio Margin Savings Analysis
- Allows firms to calculate their margin for their portfolios by either a portfolio upload or entering trades manually
- Once run, CME CORE calculates the portfolio margin savings between OTC IRS and Interest Rate Futures
- Reports breakdown position transfers in PDF and CSV file format
- Enhanced Analytics includes:
 - Real-Time Positions - Access to CME OTC IRS cleared positions throughout the day providing a simple way to calculate margin requirements and perform “what if” margin analysis
 - Real-Time Margin Dashboard - Actively updated margin requirements across accounts providing the ability to anticipate overnight funding costs

<http://www.cmegroup.com/education/featured-reports/cme-core-clearing-online-risk-engine.html>

Client Reporting

CME provides end of day reporting at the client level. This allows clients to see positions, variation margin and initial margin direct from the CCP and across multiple clearing members if applicable

	Spread sheet reporting csv format via FTP	Description	Time
Variation Margin	Trade Register <i>IRSTR_CMZ_YYYYMMDD_EOD.csv</i>	Trade and position level records, detailed trade economics, variation margin	7.30pm EST
Initial Margin	Margin Recap <i>MR_CMZ_YYYYMMDD.csv</i>	Initial margin per currency and account	9pm EST
Pricing	Pricing File <i>IRSPF_CMZ_YYYYMMDD.csv</i>	Anonymized pricing file for custodians and outsourced back-office functions	5pm EST Intraday 9pm EST end-of-day

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