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Preparing to Move From LIBOR Derivatives

SOFR Summer Series

Summer SOFR Series – Preparing to move from LIBOR Derivatives

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- Sayee Srinivasan, Deputy Director, Division of Clearing and Risk, CFTC
- Steven J. Dayon, Executive Director, Products & Services, CME Group
- Philip Whitehurst, Head of Service Development, Rates, LCH
- Richard Chambers, Global Head of Short Macro Trading, Goldman Sachs
- Ann Battle, Head of Benchmark Reform, ISDA

Summer SOFR Series

- July 13: Libor: Entering the Endgame
- July 15: SOFR Explained
- July 22: Preparing to move from LIBOR Derivatives
- July 29: Accounting/Tax/Regulation
- August 3: Approaching the Transition
- August 7: Office Hours Live

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ARRC Best Practices

Sayee Srinivasan

ARRC Recommended Best Practices for Completing the Transition from LIBOR

https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC-Best-Practices.pdf

E. Derivatives

The following recommendations refer to any cleared or uncleared derivative instrument referring to USD LIBOR.

- **Recommendation 1**: Market participants should adhere to the International Swaps and Derivatives Associations' Fallback Protocol for Interbank Offered Rates within the 4-month period after it is published and before the amendments to embed the fallbacks in legacy transactions take effect.
- **Recommendation 2**: Dealers should seek to promote liquidity and client access to SOFR derivatives products by:
    - Offering electronic market-making and execution in SOFR swaps by September 30, 2020.
    - Amending interdealer CSAs to use SOFR 'Interest Amount' for USD collateral by December 31, 2020.
    - Making markets in SOFR-linked interest rate volatility products (including swaptions, caps, and floors) by December 31, 2020
    - Changing the market convention for quoting USD derivative contracts from LIBOR to SOFR by March 31, 2021

- **Recommendation 3**: Market participants should not initiate new LIBOR derivative trades maturing after 2021 that will increase LIBOR risk unless such trades are for risk or default management of legacy LIBOR positions after June 30, 2021.[7]

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CCPs - The Single Step

Phil Whitehurst, Steve Dayon

CCP SOFR Discounting Switch: Principles & Purpose

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- In support of the ARRC Paced Transition Plan, CCPs plan to transition to SOFR PAI & Discounting for USD products
- Noting the scale of the challenge, the process has been designed to meet the industry-wide objective of switching the cleared swap market to SOFR while minimising disruption and without compromising market stability
- The design is intended to be resilient in a wide range of scenarios, operationally tractable yet with a reasonable degree of flexibility for customers with specific needs. Key design decisions have been subject to extensive consultation with market participants and have been communicated broadly to the market
- While each CCP has developed its own detailed process, there are several common features:

Process Step	Purpose
Single step switch	CCPs will effect a switch from the use of Fed Funds for PAI and of Fed Funds swap rates ("OIS") for discounting to the use of SOFR equivalents on a single cut-over date. There will be NO period during which CCPs run parallel discounting regimes
Value compensation via cash payments	The discounting change will give rise to gains and losses in respect of the valuation of USD-discounted portfolios. To address this, CCPs plan to use cash compensation by introducing offsetting fees payable to/from the relevant accounts at the point of the switch
Risk compensation via compensating swaps	The transition will give rise to a change in discounting risk from Fed Funds to SOFR. Compensating swaps will be used, with the intention to neutralise the change in discounting risk and provide protection against any price movements during or after the switch

CME SOFR Price Alignment & Discounting Transition Process

Scope: Cleared US Dollar interest rate swap products at CME (IRS, OIS, FRAs, Basis, ZCS, Swaptions) excluding SOFR-Indexed Swaps, as they are already using SOFR discounting and price alignment

Cash Adjustment: To neutralize the value transfer from the change to SOFR discounting, CME will process a cash adjustment that is equal and opposite to the NPV change on each trade in all accounts

Re-Hedging Process: Mandatory exercise designed to restore participants to their original EFFR discounting risk profile at the portfolio level and will be booked at closing curve levels ($0 NPV)

Auction: CME will facilitate a voluntary auction for participants looking for an efficient way to unwind the basis swaps received from the re-hedging process

Timing	Step
Currently Available	***Discounting Transition Impact Analysis***
August 3rd	CME SOFR Auction Customer Agreement is Made Available
September 28th	Discounting Transition Report Available Daily for Production Portfolios
October 2nd	Client Elections Deadline
October 9th	CME/FCM Election Reconciliation Complete
COB October 16th	Discounting Transition
October 19th	• CME Voluntary Auction Conducted • All In-Scope Trades Reference SOFR Discounting & Price Alignment

LCH SOFR Discounting Switch: Steps & Timetable

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1. LCH plans to change the discounting and PAI/PAA(*) on all SwapClear USD-discounted products (including inflation, MXN and non-deliverable currencies(**)) from Fed-Funds to SOFR;
2. LCH plans to apply cash and swap compensation to all accounts with open USD-discounted positions (including inflation, MXN and non-deliverable currencies(**)) on the conversion date;
3. Client accounts will be able to elect for cash-only compensation by notifying LCH via their Clearing Broker;
4. A cash settlement (auction) process will be used to close out the unwanted compensating swaps and to provide a reference for cash compensation calculations across the whole service;
5. LCH is targeting a conversion date of 16th October 2020.

Date	Step
Friday 31st July 2020	LCH to publish auction proceeds cap array.
Friday 4th Sep 2020	Notification to LCH of elections for clients opting out of compensating swaps (and into LCH close-out process).
Friday 18th Sep 2020	LCH to publish indicative size of portfolio.
September 2020 (TBC)	Full operational test of end-to-end processes.
Wednesday 14th Oct 2020	Calculation of final compensating swap notionals.
Thursday 15th Oct 2020	Publication of final auction portfolio.
Friday 16th Oct 2020	Auction event. Calculation of cash compensation amounts.
Saturday 17th Oct 2020	Booking of cash compensation amounts, compensation swaps and CSP proceeds.
Monday 19th Oct 2020	All new trades cleared at start of day. Implementation of SOFR discounting at opening.
Tuesday 20th Oct 2020	Settlement of compensation amounts and CSP proceeds. New trades reported to trade repository.

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Liquidity Drivers

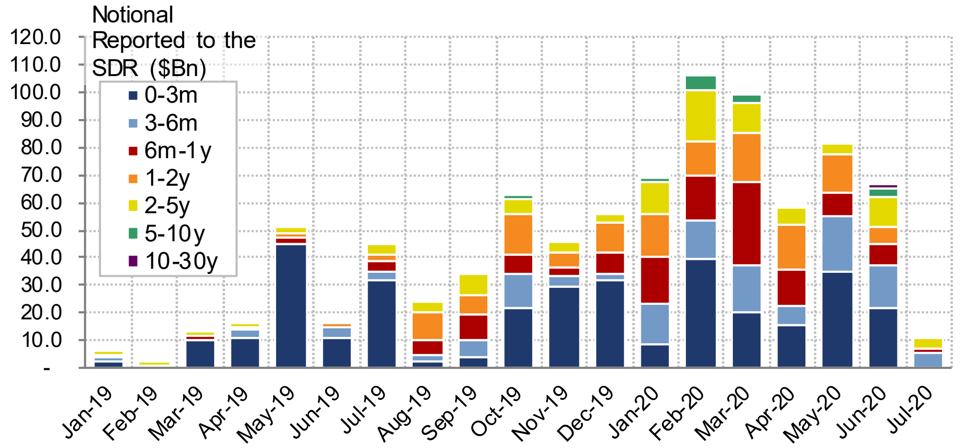
Richard Chambers

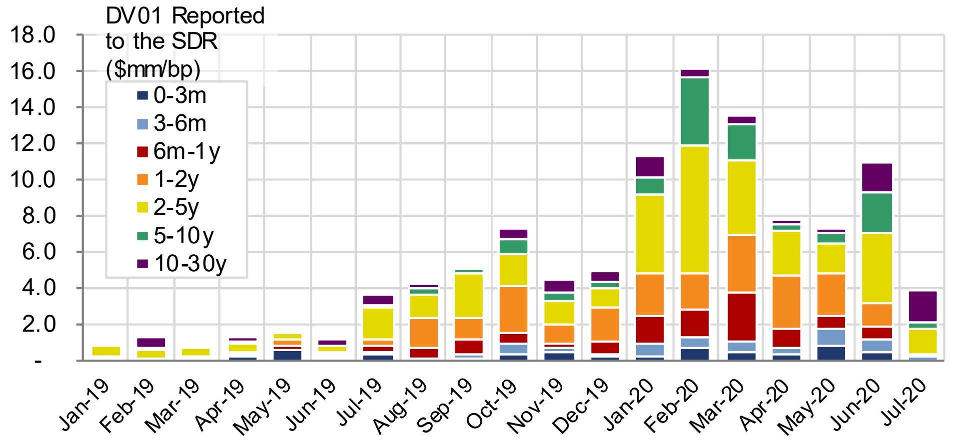
Liquidity Drivers – Recent SOFR Swap Volumes

- Activity in SOFR derivatives continues to grow at a meaningful rate
- As described below, based on publicly reported data in the swap data repositories, SOFR vs Fixed and SOFR vs Fed Funds drive a majority of the transactions

By Type	Notional ($mm)		DV01 ($k/bp)	
SOFR vs. Fixed	444,617	50.5%	51,620	47.6%
SOFR vs. Fed Funds	376,118	42.7%	47,290	43.7%
SOFR vs. LIBOR	59,984	6.8%	9,337	8.6%
SOFR vs. SOFR	130	0.0%	48	0.0%
XCCY	355	0.0%	39	0.0%
Total	881,204		108,334	

By Tenor	Notional ($mm)		DV01 ($k/bp)	
0-3m	342,934	38.9%	5,517	5.1%
3-6m	131,940	15.0%	5,619	5.2%
6m-1y	138,020	15.7%	12,589	11.6%
1-2y	139,016	15.8%	24,007	22.2%
2-5y	104,891	11.9%	37,546	34.7%
5-10y	17,604	2.0%	12,766	11.8%
10-30y	6,800	0.8%	10,289	9.5%
Total	881,204		108,334	

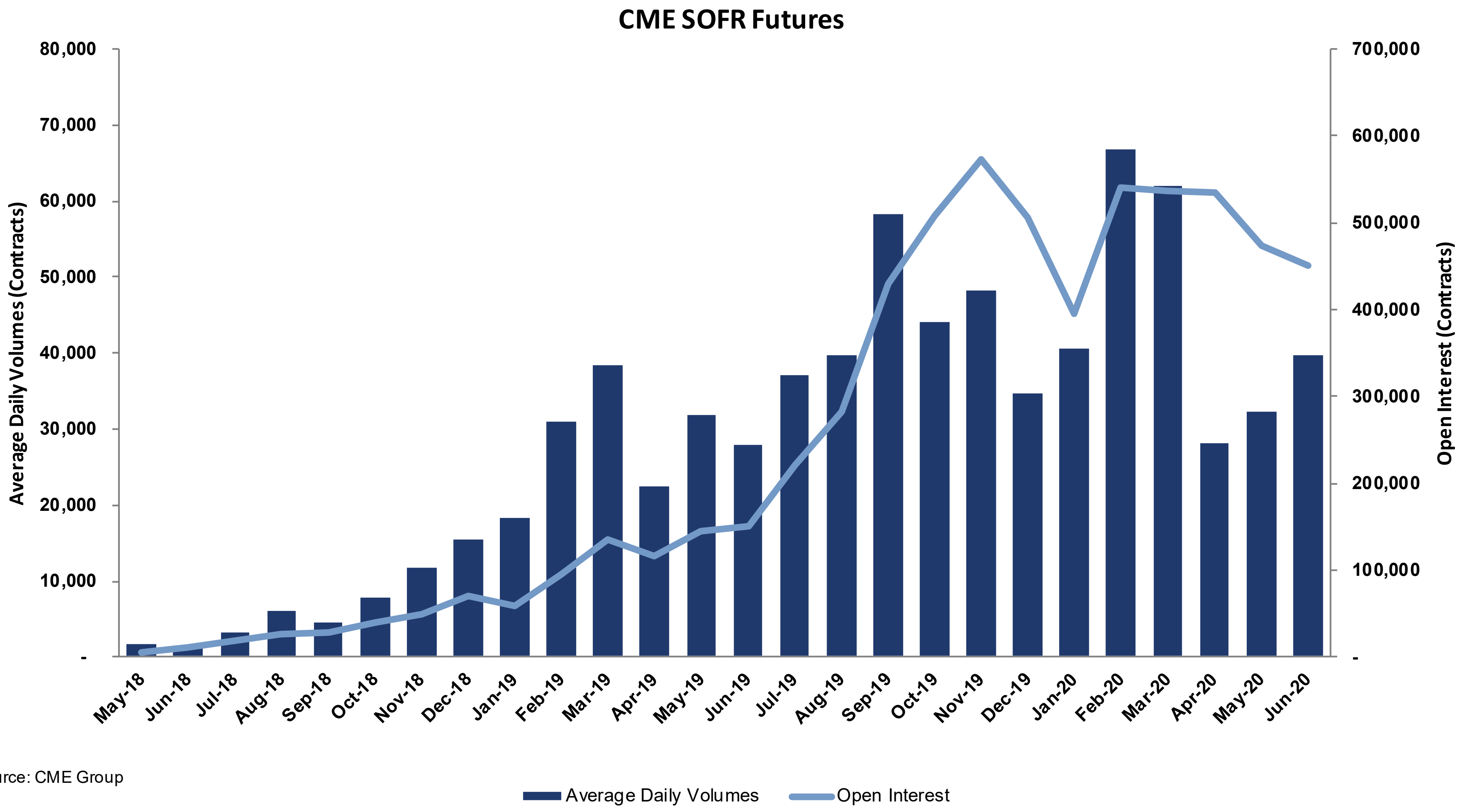




SOURCE: Bloomberg and GS Securities Division. Past performance is not indicative of future results

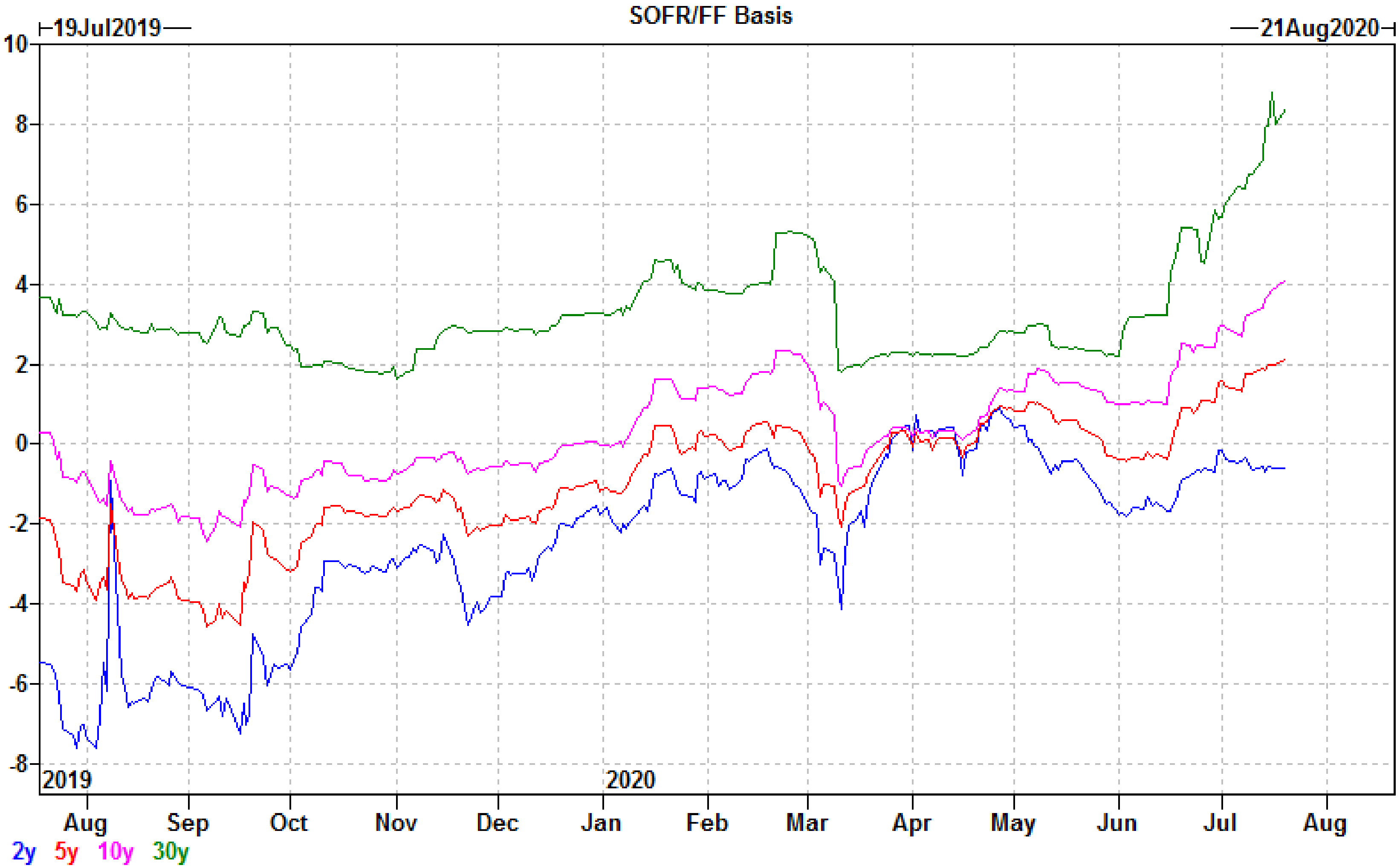
Note: all data as of 10 July 2020

Liquidity Drivers – Recent SOFR Futures Volumes



Source: CME Group

Liquidity Drivers – Recent SOFR Curves



Source: Goldman Sachs internal pricing

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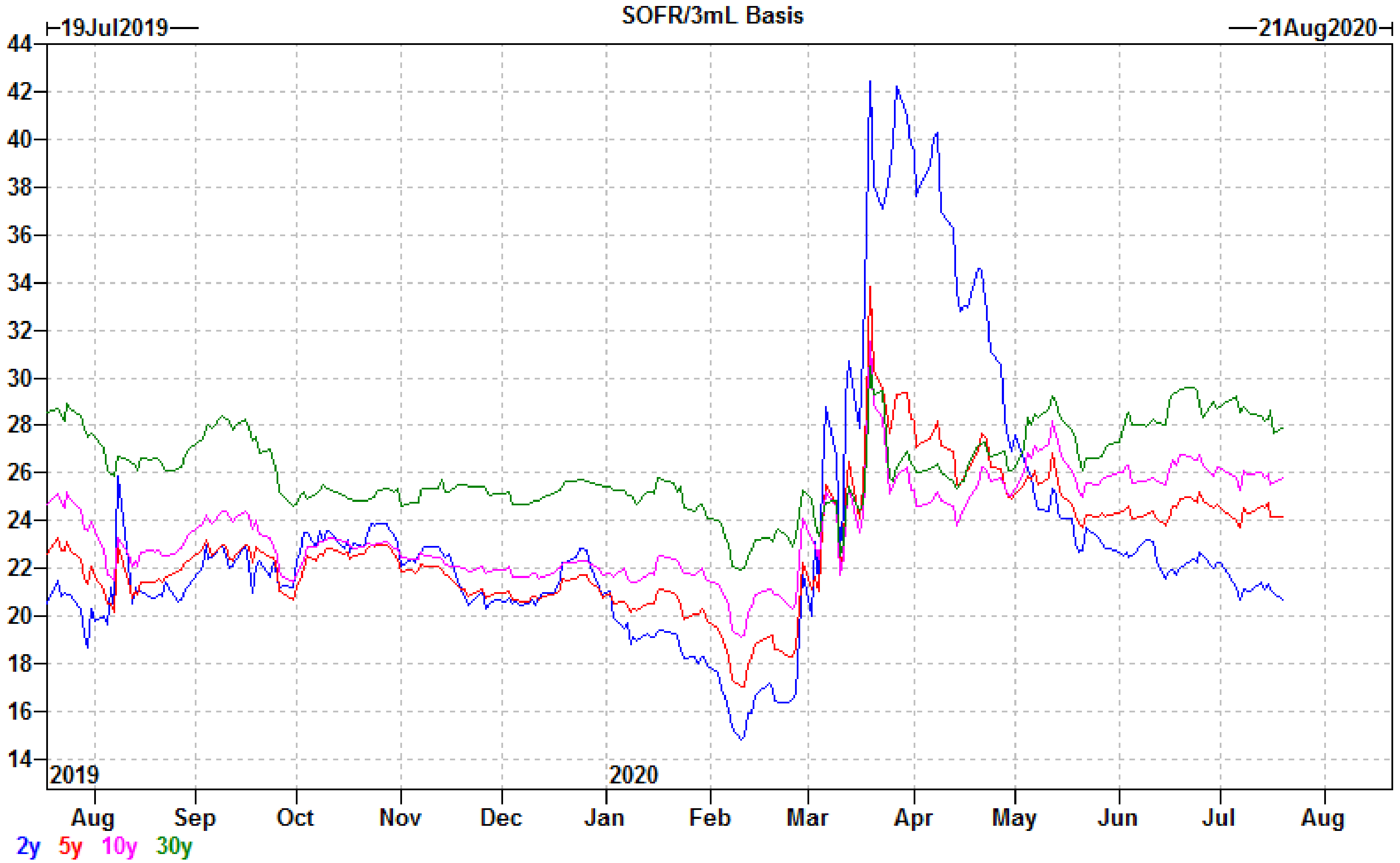

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Liquidity Drivers – Recent SOFR Curves

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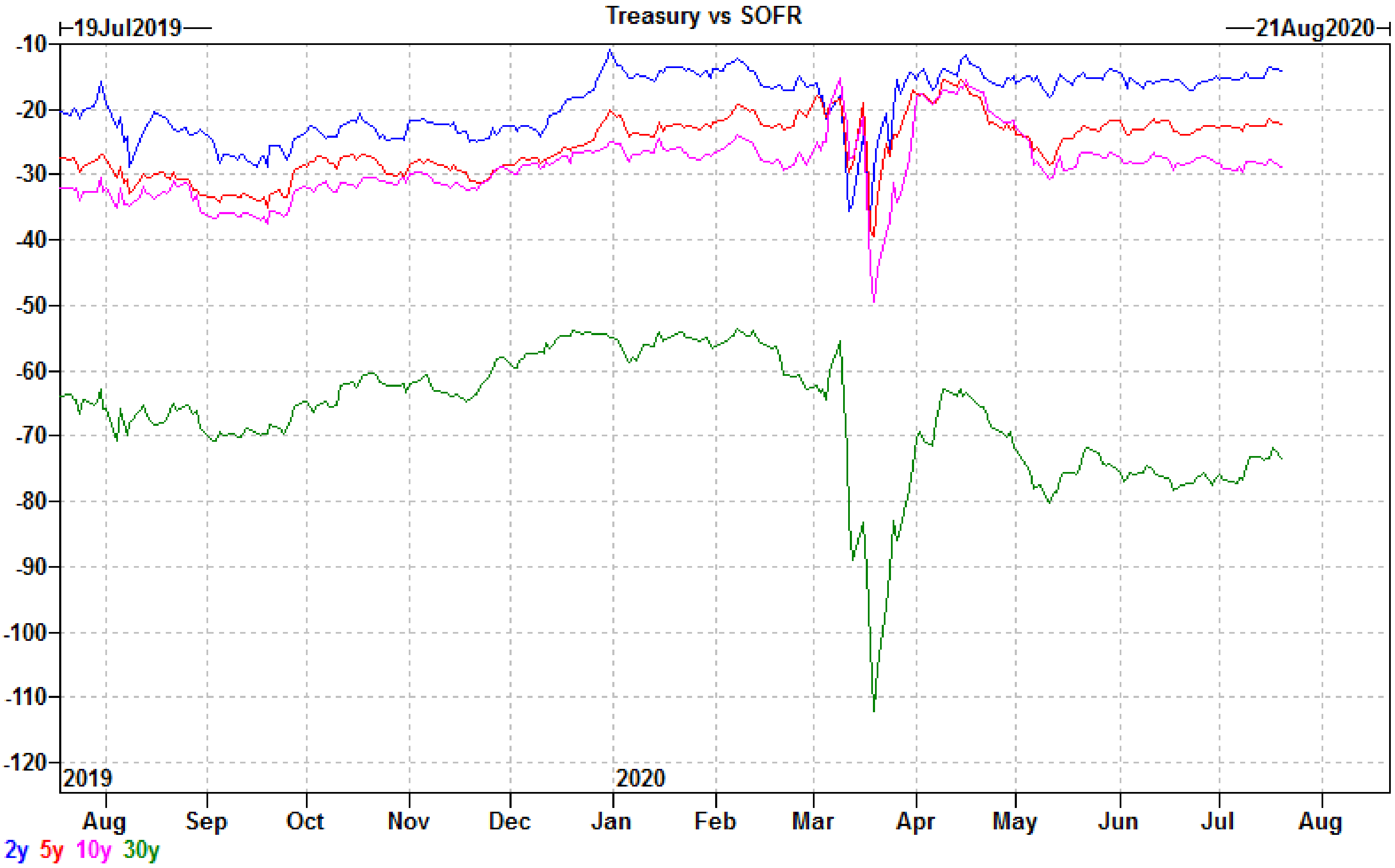
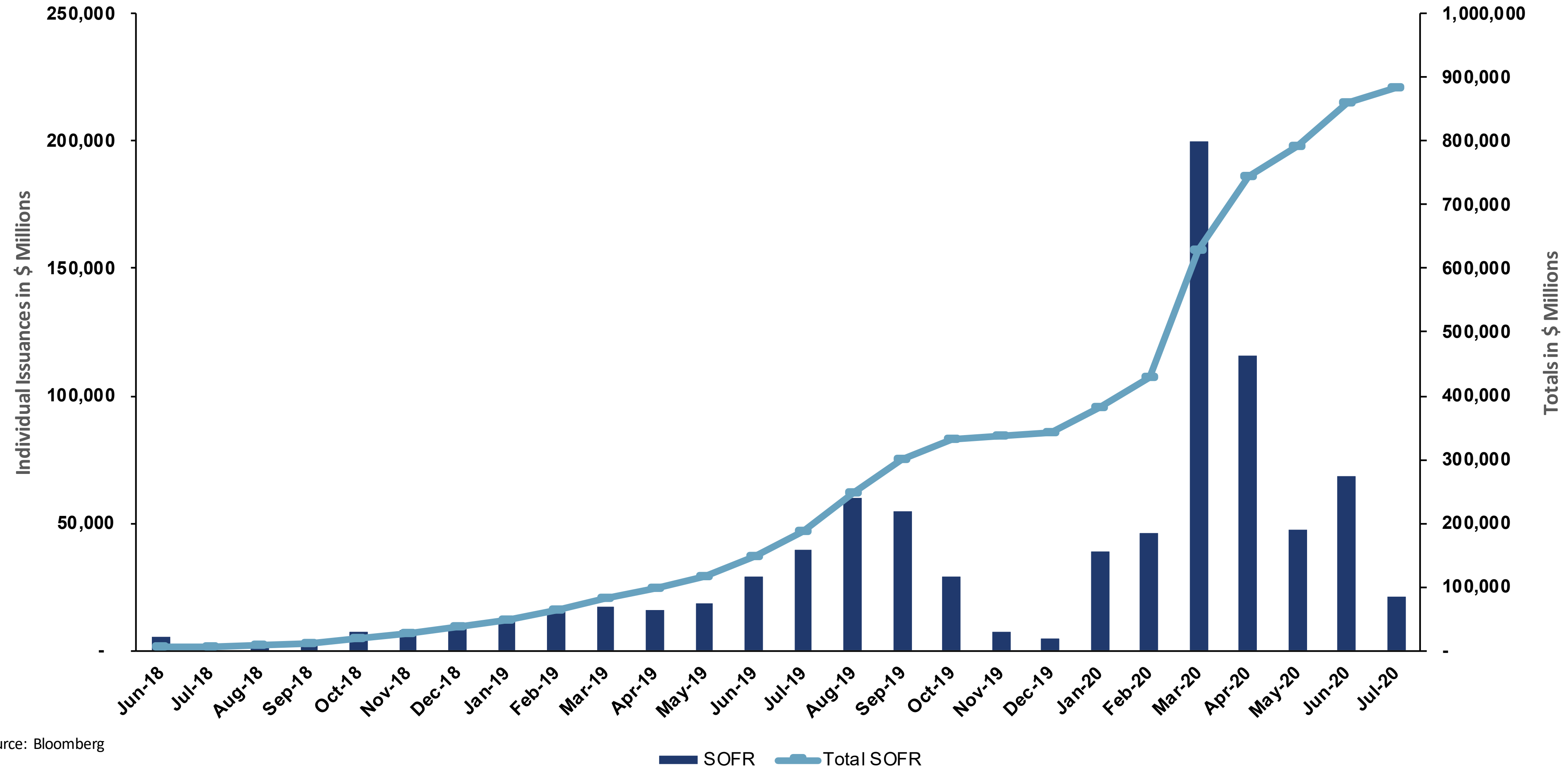


Source: Goldman Sachs internal pricing

Liquidity Drivers – SOFR Capital Markets Activity



Source: Bloomberg

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IBOR Fallbacks

Ann Battle

IBOR Fallbacks: ISDA's Work – Implementation of Fallbacks in Supplement

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Form of Amendments

- Supplement to the 2006 ISDA Definitions: To account for any permanent discontinuation of a relevant IBOR, amendments to the floating rate options in Section 7.1 of the 2006 ISDA Definitions for the relevant IBORs will take the form of:
  - a statement identifying the objective triggers that would activate the selected fallbacks (the trigger defined as 'Index Cessation Event'); and
  - a description of the fallbacks that would apply upon the occurrence of that trigger, which will be:
    i. the relevant RFR adjusted using methodologies to account for (A) the fact that the RFR is an overnight rate and (B) the various premia included within the IBOR; and
    ii. if the relevant RFR is permanently discontinued, one or more further fallbacks.

Upon publication of the Supplement, all new derivative transactions entered into on or after the date of the amendments that incorporate the 2006 ISDA Definitions will include the fallbacks (counterparties will not have to take any additional steps).

IBOR Fallbacks: ISDA's Work – Implementation of Fallbacks in Protocol

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Form of Amendments

- **ISDA 2020 IBOR Fallbacks Protocol:** ISDA will also publish a protocol to facilitate inclusion of the amended floating rate options (*i.e.,* the definitions with fallbacks) into **<u>existing</u>** derivative contracts entered into prior to publication of the Supplement.
  - Adherents to the Protocol will agree that derivative transactions that they have entered into *with other adherents* prior to publication of the Supplement will be based on the relevant amended floating rate options in the 2006 ISDA Definitions, notwithstanding when the transactions were entered into.
  - The Protocol will cover those ISDA master agreements, ISDA credit support documents and confirmations that:
    i. incorporate one of several ISDA definitional booklets;
    ii. reference an IBOR as defined in or has the meaning in one of several ISDA definitional booklets; or
    iii. reference an IBOR howsoever defined.
  - The Protocol will also extend to additional non-ISDA master agreements and credit support documents.

IBOR Fallbacks: ISDA's Work – Triggers

- The fallbacks apply upon the ***permanent discontinuation*** of the relevant IBOR (based on pre-determined, objective triggers), and will be to the relevant alternative risk-free rate (RFR), subject to term and spread adjustments. The ***permanent discontinuation*** trigger is defined as "Index Cessation Event" in the non-LIBOR Rate Options.

- The fallbacks will not apply until the actual discontinuation of the relevant IBOR (if that is after the announcement date). This date is defined as the "Index Cessation Effective Date".

- For **LIBOR** in **GBP/CHF/USD/EUR/JPY**, the fallbacks apply upon the ***earlier to occur of (i) the permanent discontinuation or (ii) the non-representativeness (as determined by the UK FCA) (a so-called "pre-cessation" trigger)*** of LIBOR in the relevant currency (based on pre-determined, objective triggers) and will be to the relevant alternative RFR, subject to term and spread adjustments. The combined ***permanent discontinuation*** and ***pre-cessation*** trigger is also defined as "Index Cessation Event" in the LIBOR Rate Options.
  - The Index Cessation Effective Date for the pre-cessation trigger will be the date on which LIBOR in the relevant currency 'is no longer representative', which may either coincide with or be after the date of an announcement that it is 'no longer capable of being representative'.
  - Statement from the UK FCA regarding announcement of contractual triggers for LIBOR available at https://www.fca.org.uk/markets/transition-libor/libor-contractual-triggers

IBOR Fallbacks: Adjustments to Fallback Rates

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Form of Adjustments

- The RFRs are adjusted (1) to reflect the fact that the IBOR is a term rate and (2) to factor in the embedded bank credit spread element of the IBOR.
- The current methodology is:
  - RFRs are based on the **compounded setting in arrears rate** and the **five year historical median approach to the spread adjustment**.
  - The **compounded setting in arrears rate** is the RFR observed over a period (generally equivalent to the relevant IBOR tenor) and compounded daily. The rate is adjusted whereby the observation period is backward-shifted to allow for the rate to be known prior to the relevant payment date.
  - The **five-year historical median approach to the spread adjustment** is based on the median spot spread between the IBOR and the term-adjusted RFR calculated over a static lookback period of five years prior to the Index Cessation Event. The spread adjustment will be added to the compounded setting in arrears rate (but will not be compounded itself).

Information about the relevant consultations and results, as well as test data and example calculations from Bloomberg, are available at **ISDA Benchmark Reform and Transition from LIBOR webpage** https://www.isda.org/2020/05/11/benchmark-reform-and-transition-from-libor/

IBOR Fallbacks: Key Dates

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Bloomberg begins publication of indicative fallback rates via: • Bloomberg Terminal • Bloomberg Data License • Bloomberg's LIBOR Transition website (on a delayed basis)	Live as of July 17th
Launch of IBOR Fallback Supplement and IBOR Fallback Protocol	Documents final by end of July Launch after receive positive Business Review Letter from the US DoJ and similar comfort from other relevant competition law authorities (market will receive approximately two weeks' notice of launch date)
Effectiveness of IBOR Fallback Supplement and IBOR Fallback Protocol	Approximately four months after publication (date to be set upon launch)

IBOR Fallbacks: Additional Information

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- ISDA/Bloomberg/Linklaters IBOR Fallbacks Fact Sheet
- Understanding IBOR Benchmark Fallbacks
- Benchmark Reform at a Glance

All of these materials, as well as additional information about ISDA's work to implement IBOR fallbacks and other benchmark reform initiatives, are available on the **ISDA Benchmark Reform and Transition from LIBOR webpage** at https://www.isda.org/2020/05/11/benchmark-reform-and-transition-from-libor/

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Q & A