SECOR

Benchmark Reform and Transition Overview

September 11, 2020

Executive Summary

- Starting January 2022, regulators will not compel banks to submit London Interbank Offered Rates (LIBOR)
- The Secured Overnight Financing Rate (SOFR) is the preferred rate to use in derivatives post-LIBOR
- The “Big Bang 2.0” is the next major milestone in the benchmark transition
- The transition should have a small but manageable impact to the swaption portfolio
- We are monitoring news from regulators and markets for sizeable changes in spreads and shifts in liquidity
- Ongoing industry wide upgrade of trading/risk/booking systems to handle SOFR-based derivatives
- No immediate change to portfolio recommended but expect to amend some documentation over next year

What is LIBOR and Why is it Being Discontinued?

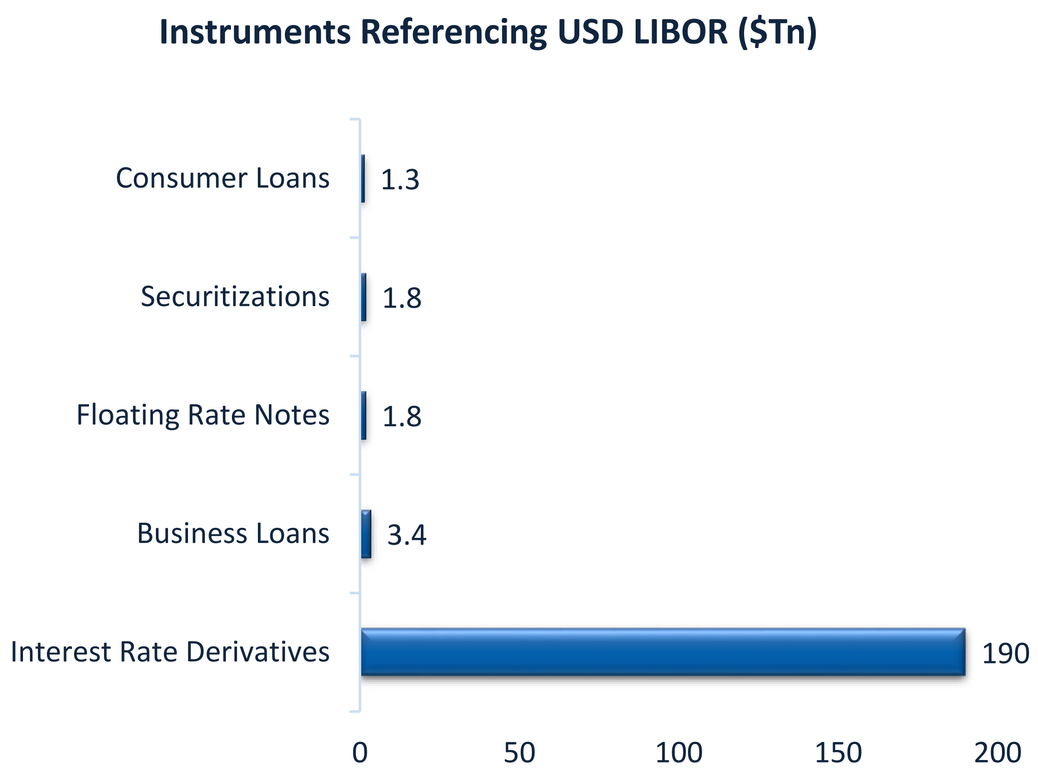
What is LIBOR?

- LIBOR is short-term uncollateralized borrowing rate between banks
- Rate submitted by panel of 16 banks in London
- Widely used references rate for various securities

Why is it being discontinued?

- Low volume of underlying transactions
- Potential for manipulation from “expert judgement”
- No longer fits “Principles for Financial Benchmark”

~$200 Tn Instruments Referencing USD LIBOR



~$500mm or less daily underlying transactions

Data as of end of 2016 based on calculations from the ARRC’s Second Report published in March 2018

Source: https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC_Factsheet_1.pdf, Goldman Sachs, Barclays, Credit Suisse, Financial Stability Board

What is SOFR and What Makes it Preferable to LIBOR?

What is SOFR?

- Volume-weighted median rate from daily repo transactions
- Fully transparent calculation based on observable flows
- Essentially risk-free

Why is Preferable to LIBOR?

- Represents very large portion of the market – not just 16 banks
- Published daily by NY Federal Reserve for public
- Subject to extensive oversight, including regular reviews and Conflicts of Interest policies for staff
- Underlying market approximately 2000x the size of underlying LIBOR market

LIBOR

- Unsecured
- Term rate
- Forward looking
- Transaction and judgement based
- Dwindling underlying volumes (ARRC approximates ~$500mm/day as of YE 2016)
- Reflects panel bank funding
- Trimmed mean (±25%)

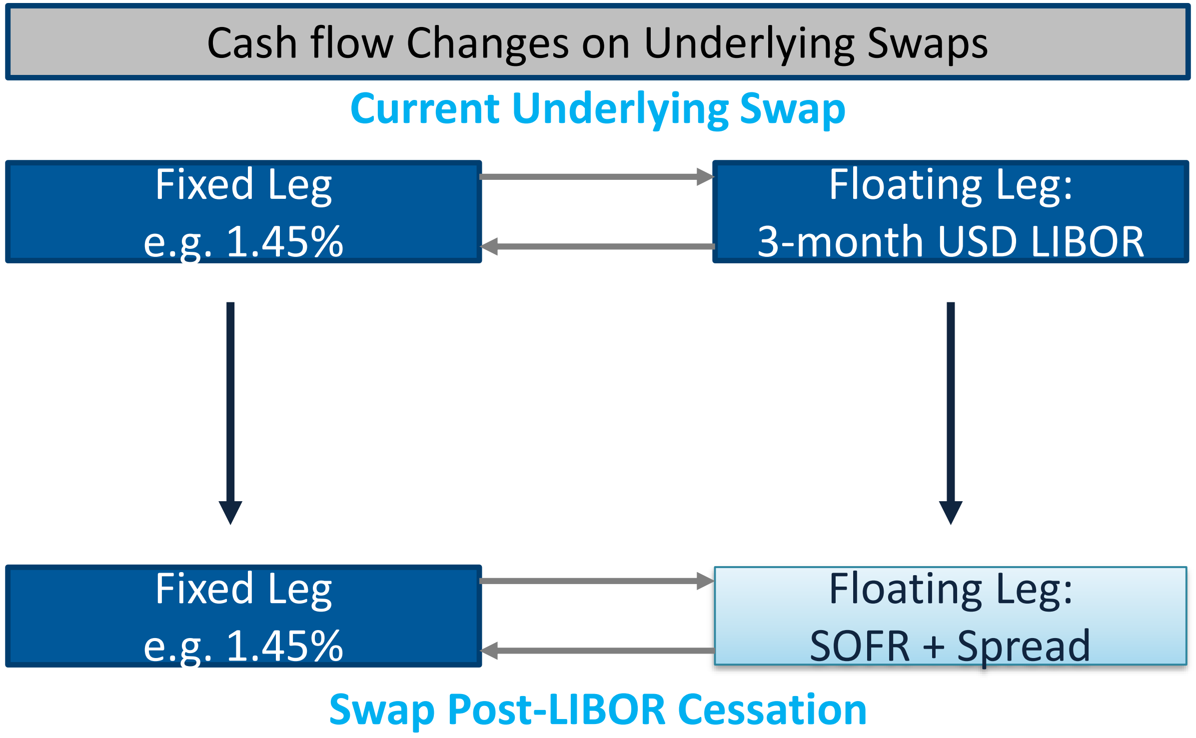
SOFR

- Secured – Treasuries as posted collateral
- Overnight rate (compounded)
- Backward looking
- Transaction-based
- Robust volumes (~$1 Tn/day through September 2020)
- Diverse set of market participants
- Volume-weighted median, excludes lowest 25% of transactions

Source: Federal Reserve, Goldman Sachs, Credit Suisse

LIBOR Cessation Impact to Swaptions

- We anticipate minimal disruptions to swaptions from the LIBOR to SOFR transition
- Valuation and risk systems across the market are being enhanced to meet changes
- Swaptions executed under ISDA will follow guidelines from ISDA protocol and may not need to renegotiate docs



Changes in basis today does not have significant impact on 5-year historical median spread

Spread Change Impact on 5-year Historical Median
(5Y5Y SOFR vs. 3-month USD LIBOR as of August 28, 2020)

Announcement Date	Floor	-20 bps	-10 bps	-5 bps	+0 bps	+5 bps	+10 bps	+20 bps	Cap
Current	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2
YE'20	26.2	26.2	26.2	26.2	26.2	26.2	26.5	27.6	28.3
31-Mar-21	26.2	26.2	26.2	26.2	26.2	26.3	27.2	29.4	31.2
30-Jun-21	25.7	25.7	25.7	25.7	25.7	26.1	27.7	32.3	34.1
30-Sep-21	25.1	25.1	25.1	25.2	25.2	25.7	27.6	34.4	35.6
YE'21	23.5	23.5	23.5	23.5	23.6	24.9	27.1	34.9	36.9

Source: SECOR, Bloomberg, Goldman Sachs

"Big Bang 2.0" – The Next Major Milestone – October 16 – 19, 2020

- Central Counterparty Clearing Houses (CCPs) will switch their discounting from the Federal Funds Rate to SOFR
- Bilateral trade compensation is voluntary – most dealers thus far are not seeking compensation
- Based on recent estimates, a sample LDI swaption portfolio with $1.5mm/bp dv01 may benefit by approximately $500k
- Expect dealers to reach out late 2020 or early 2021 to amend CSA documents to SOFR discounting

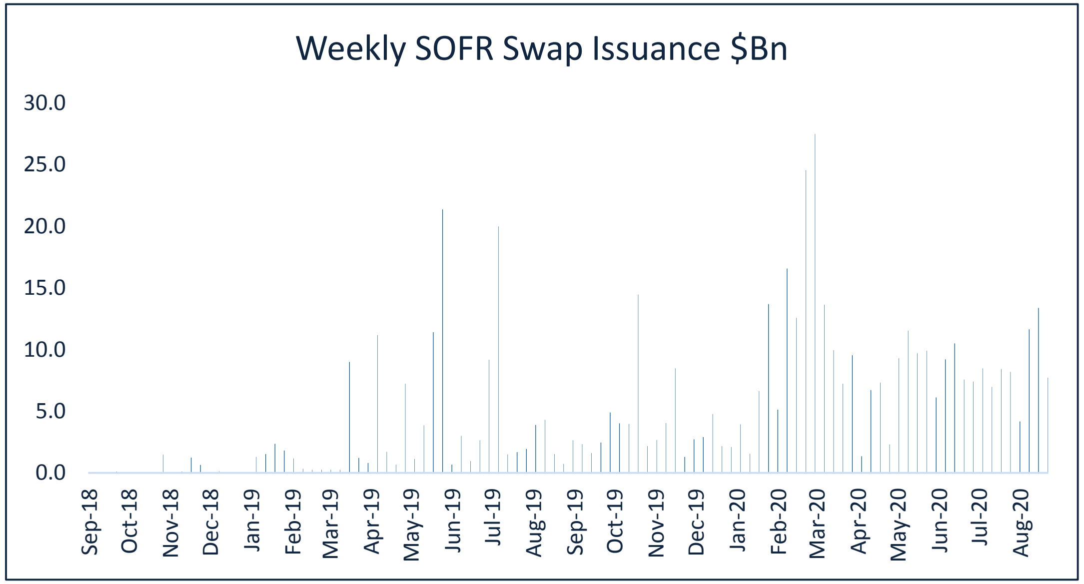
Agreed Discount Rate	Clearing House	Physical Cleared	Collateralized Cash Price	Number of Trades
Trade Date < 11/21/2018				
Not Specified	Specified	SOFR	Fed Funds	0
	Not Specified	**	Fed Funds	5
Trade Date >= 11/21/2018 and < 3/30/2020				
Not Specified	Specified	SOFR	SOFR	10
	Not Specified	**	Fed Funds	4
Trade Date >= 3/30/2020				
Fed Funds	Either	Fed Funds	Fed Funds	0
SOFR	Either	SOFR	SOFR	7
Not Specified	Specified	SOFR	SOFR	0
	Not Specified	**	SOFR	0

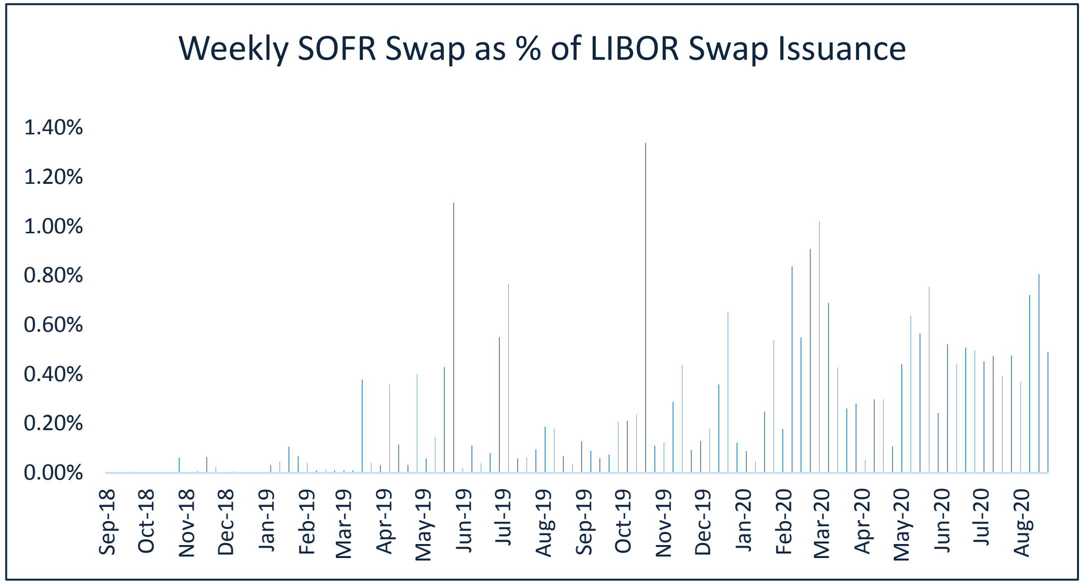
As of August 14, 2020	Δ Market Value $k
Dealer 1	25
Dealer 2	50
Dealer 3	150
Dealer 4	-50
Dealer 5	200
Dealer 6	125
Total	500

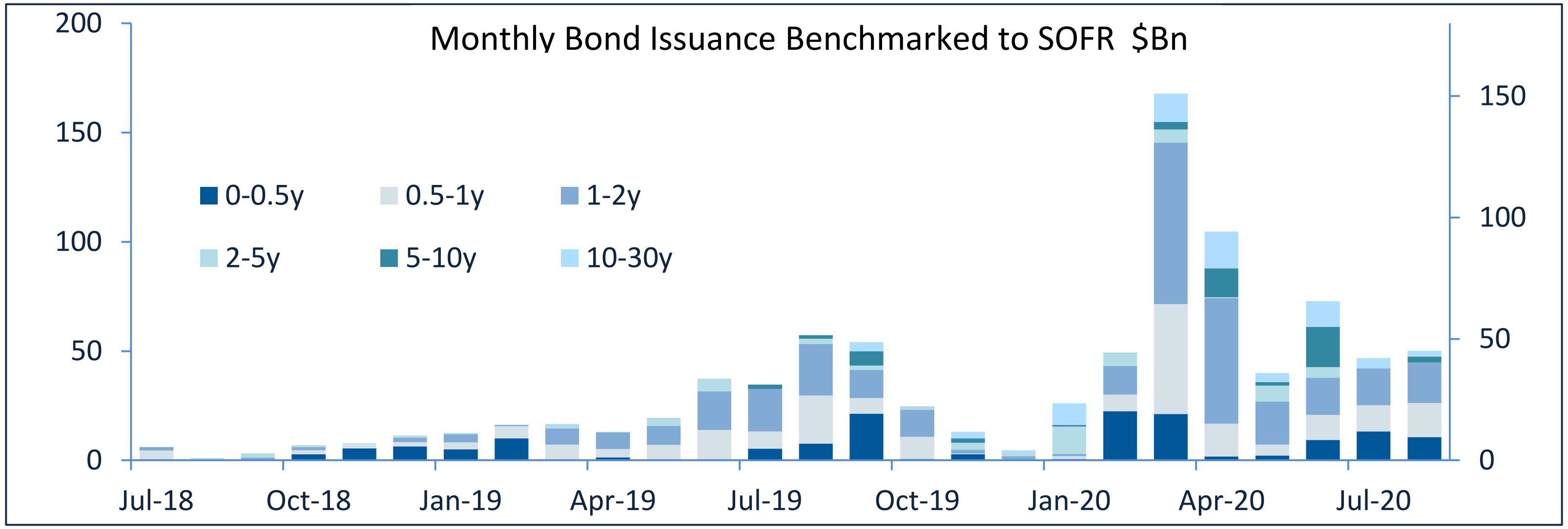
Sample

Source: SECOR

SOFR Market Development







http://analysis.swapsinfo.org/, Bloomberg, Goldman Sachs

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SECOR Systems Enhancement

- SECOR has been monitoring external vendors and enhancing internal systems to manage the benchmark transition
- SECOR always strives to be an early adopter of the latest market technologies to help tailor them to meet the needs of our clients

System	Process SOFR-based Derivative	Price with SOFR Discounting
Order Management System	Yes (not Live)	Yes (Live)
Execution Management System	Yes (not Live)	Yes (Live)
Valuations Vendor (GlopeOp)	Yes (Live)	Yes (Live)
External Risk Systems (Yield Book)	Yes (Live)	Yes (Live)
Internal Risk Systems	Yes (not Live)	Yes (Live)
CCP (LCH)	Yes (Live)	Currently SOFR-based swaps only (All swaps expected October 16^{th})
Swap Execution Facility (Bloomberg)	Yes (Live)	Yes (Live)
Dealers	Yes (Live)	Yes (Live)

Source: SECOR

Appendix

Background on Reforming Major Interest Rate Benchmarks

- Following industry wide LIBOR skepticism the G-20 asked the Financial Stability Board (FSB) in February 2013 to undertake a fundamental review of major interest rate benchmarks and of plans for reform
- In July 2013, International Organization of Securities Commissions (IOSCO)* published the "Principles for Financial Benchmarks" final report with the objective of creating an overarching framework of principles for benchmarks used in financial markets to be followed by administrators
- The IOSCO principles were referenced in the FSB's July 2014 report "Reforming Major Interest Rate Benchmarks", which kick-started the creation of industry and regulatory working groups, e.g. the US Alternative Reference Rate Committee (ARRC), to select alternate risk-free rates (RFRs)
- On July 27, 2017, the Financial Conduct Authority (FCA), which oversees the LIBOR submission process, announced that it would not compel London banks to make submissions post YE 2021. The risk that LIBOR may cease publication after 2021 has accelerated transition timelines.

Summary of IOSCO Principals for Financial Benchmarks

Category	Description	Principles
Governance	▪ Administrators should have the appropriate governance in place in order to protect the integrity of the benchmark determination process and to address conflicts of interest	1. Overall responsibility of the administrator 2. Oversight of third parties 3. Conflicts of interest for administrators 4. Control framework for administrators 5. Internal oversight
Quality of the benchmark	▪ The design of a benchmark should result in a reliable representation of the economic realities of the interest rate that it seeks to measure ▪ The data used to construct a benchmark should be based on prices, rates, indices, or values that have been formed in an active market	6. Benchmark design 7. Data sufficiency 8. Hierarchy of data inputs 9. Transparency of benchmark determinations 10. Periodic review
Quality of the methodology	▪ Administrators should publish or make available the methodology used to make benchmark determinations ▪ Administrators should have clear written policies and procedures to address the need for possible cessation of a benchmark	11. Content of the methodology 12. Changes to the methodology 13. Transition 14. Submitter code of conduct 15. Internal controls over data collection
Accountability	▪ Administrators should publish or make available a written complaints procedures policy, by which stakeholders may submit complaints including concerning whether a specific benchmark determination is representative of the underlying interest rate it seeks to measure	16. Complaints procedures 17. Audits 18. Audit trail 19. Cooperation with regulatory authorities

*Board members in the US include the Securities and Exchange Commission (SEC) and Commodity Futures Trading Commission (CFTC)

Source: IOSCO, FSB, Goldman Sachs, Credit Suisse

Background of USD LIBOR

What is USD LIBOR?

- Since 1986, the London Interbank Offered Rate (LIBOR) has been the “official” interest rate at which banks can borrow short-term uncollateralized USD denominated debt in the interbank market
- The “IBORs” are the most widely used benchmark for various financial products
- Each day, a panel of 16 London-based banks submit estimates of USD borrowing cost from other banks over various tenors
- For each tenor, the submissions are averaged (removing upper/lower quartiles) to determine that day’s LIBOR rate

Why is LIBOR being discontinued?

- Since the 2008 financial crisis, banks have changed the way they fund themselves as interbank-lending may dry up quickly in the event of a liquidity crisis
- New regulatory measures such as the Liquidity Coverage Ratio (LCR), which refers to the proportion of highly liquid assets held by financial institutions, tend to penalize wholesale unsecured borrowing
- These factors have caused the volume of transactions underlying LIBOR to shrink, ~$500 million/day on an average of 5 to 7 transactions vs. the $200 Tn in securities referencing LIBOR
- LIBOR is sustained through “expert judgement” with minimal borrowing activity to validate the rate - uncertainty surrounding the integrity of LIBOR represents a potentially serious source of vulnerability and systemic risk
- This scarcity of transactions in underlying markets coupled with the potential of “rate manipulation” has called into question LIBOR’s sustainability

Source: https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC_Factsheet_1.pdf, Goldman Sachs, Barclays, Credit Suisse, Financial Stability Board, Barclays
Data as of the end of 2016

LIBOR Panel Banks by Currency

Bank	USD LIBOR	GBP LIBOR	EUR LIBOR	CHF LIBOR	JPY LIBOR
BNP Paribas SA (London Branch)		✓			
Cooperative Rabobank U.A.	✓	✓	✓		
Credit Agricole Corporate & Investment Bank	✓	✓			
Deutsche Bank AG (London Branch)	✓	✓	✓	✓	✓
Société Générale (London Branch)		✓	✓	✓	✓
HSBC Bank plc	✓	✓	✓	✓	✓
Lloyds Bank plc	✓	✓	✓	✓	✓
National Westminster Bank plc	✓	✓	✓	✓	✓
Santander UK plc		✓	✓		
Barclays Bank plc	✓	✓	✓	✓	✓
Credit Suisse AG (London Branch)	✓		✓	✓	
UBS AG	✓	✓	✓	✓	✓
Citibank N.A (London Branch)	✓	✓	✓	✓	
Bank of America N.A. (London Branch)	✓				
JP Morgan Chase Bank, N.A. (London Branch)	✓	✓	✓	✓	✓
Royal Bank of Canada	✓	✓	✓		
MUFG Bank, Ltd	✓	✓	✓	✓	✓
Sumitomo Mitsui Banking Corporation Europe Limited	✓				✓
The Norinchukin Bank	✓				✓
Mizuho Bank, Ltd		✓	✓		✓

Source: SOURCE: ICE Benchmark Administration (https://www.theice.com/iba/libor), Goldman Sachs
Data as of September 11, 2020

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Differences Between USD LIBOR and the Secured Overnight Financing Rate (SOFR)

- On June 22, 2017, the US ARRC (Alternative Reference Rate Committee) selected SOFR as the preferred alternative reference rate given robust volumes

LIBOR

- Unsecured
- Term rate
- Forward looking
- Transaction and judgement based
- Dwindling underlying volumes (ARRC approximates ~$500mm/day as of YE 2016)
- Reflects panel bank funding
- Trimmed mean (±25%)

SOFR

- Secured – Treasuries as posted collateral
- Overnight rate (compounded)
- Backward looking
- Transaction-based
- Robust volumes (~$1 Tn/day through September 2020)
- Diverse set of market participants
- Volume-weighted median, excludes lowest 25% of transactions

Key characteristics that separate SOFR from LIBOR:

- It is a rate produced by the Federal Reserve Bank of New York for the public good
- It is derived from an active and well-defined market with sufficient depth to make it extraordinarily difficult to ever manipulate or influence
- It is produced in a transparent, direct manner and is based on observable transactions
- It is derived from a market that was able to weather the global financial crisis and that the ARRC credibly believes will remain active enough in order that it can reliably be produced in a wide range of market conditions

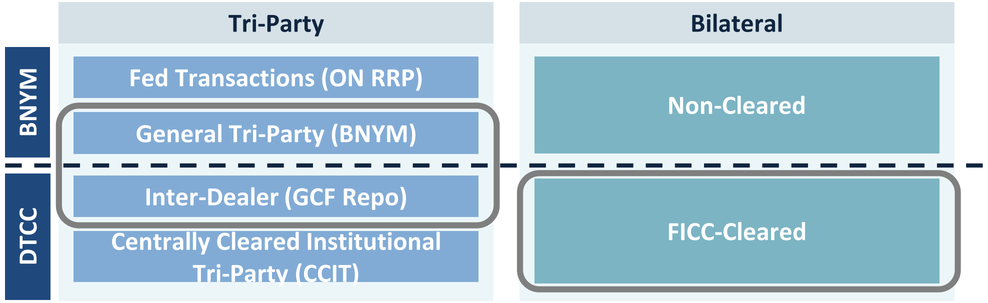
Source: https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2019/Users_Guide_to_SOFR.pdf, Credit Suisse

What is SOFR?

Secured Overnight Finance Rate (SOFR) – USD LIBOR alternative recommended by ARRC

Calculation and administration

- Volume-weighted median of transaction-level tri-party repo data collected from the Bank of New York Mellon (BNYM) & Depository Trust and Clearing Corporation (DTCC):
  - **Tri-party Treasury general collateral repo transactions** cleared and settled by Bank of New York Mellon, excluding repo transactions made through the Fixed Income Clearing Corporation General Collateral Financing repo market (FICC GCF), and excluding transactions in which the Federal Reserve is a counterparty
  - **Tri-party Treasury general collateral repo transactions** made through the FICC GCF repo market, for which FICC acts as central counterparty
  - **Bilateral Treasury repo transactions** cleared through the FICC Delivery-versus-Payment service



- Based on real and observable underlying repo transactions ($800B market) producing a stable, reliable and accurate reference rate
- Published daily at 8 am ET based on the prior day's trading activity
- Daily survey of primary dealers' overnight repo borrowing will act as a potential contingency data source
- Subject to extensive oversight, including regular review by oversight bodies and comprehensive Ethics and Conflicts of Interest policies for staff

Characteristics

- Secured
- Fully transaction-based
- Encompasses a robust underlying market (~$1 Tn daily)
- Overnight, nearly risk-free reference rate that correlates closely with other money market rates
- Covers multiple repo market segments allowing for future market evolution

Key milestones

- First published on 3rd April 2018 based on the data for the prior day
- Fannie Mae issued the first SOFR-linked security on 26th July 2018 and the transaction was well received by the market and investors
- An index for SOFR swaps has been built and forward curves have also been developed to be used for discounting purposes
- With the futures market quoted out to 2yr, the rate is organically being adopted by the broader market

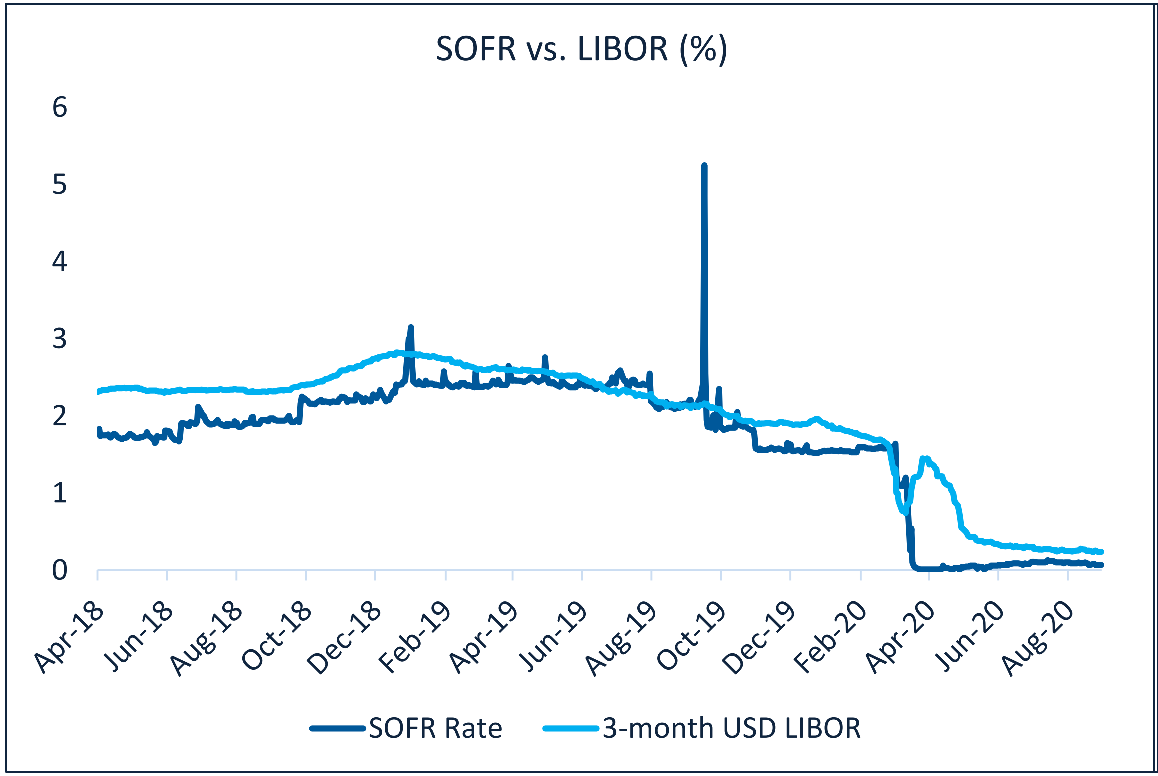
On July 6, 2020, the NY Fed's Audit Group examined the organizational and operational framework used to administer SOFR and determined it compliant with the IOSCO Principles

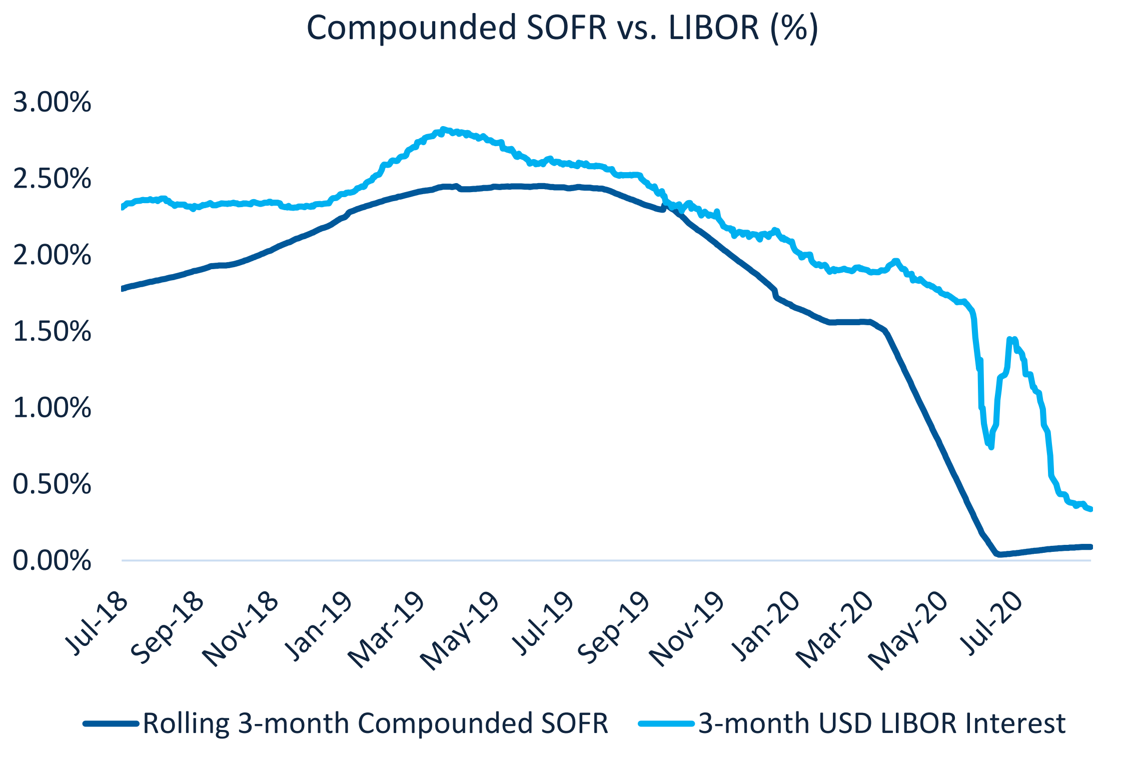
Source: Federal Reserve, Goldman Sachs, Credit Suisse

Data as of September 11, 2020

SOFR Volatility Compared to LIBOR

- SOFR tends to be more volatile than 3-month USD LIBOR day-to-day
- However, SOFR compounded over 3-months seems to exhibit less volatility than LIBOR
- Short-lived spikes in the SOFR rate, such as September 17, 2019, does not seem to impact the overall 3-month period much





Source: Bloomberg, SECOR Analytics, NY Federal Reserve

LIBOR Interest Calculation and Example

- LIBOR is set in advance, hence the interest paid/received is known at the start of the payment period

Example: One-Week LIBOR Loan of $1 Million Drawn on August 24, 2020 repaid on August 31, 2020

*Interest to be Paid = Actual days of loan / 360 * Principal * LIBOR Rate*

Assuming 2 business day lookback the LIBOR rate on August 20, 2020 = 0.11238%

Actual days of loan = August 31, 2020 less August 24, 2020 = 7 days

*Interest Paid = 7/360 * $1,000,000 * 0.11238% =* ***$21.85***

Total Repayment of Principal + Interest = $1,000,0000 + $21.85 = ***$1,000,021.85***

Source: SECOR Analytics, Bloomberg

SOFR Interest Calculation

- Compounded average in arrears resetting daily – payment will not be known until the end of the period

$$\textit{ISDA's Compound Interest Formula} = \left[\prod_{i=1}^{d_b}\left(1+\frac{r_i \times n_i}{N}\right)-1\right]\times\frac{N}{d_c}$$

where

d_b = the number of *business days* in the interest period

d_c = the number of *calendar days* in the interest period

r_i = the interest rate applicable on business day i

n_i = the number of calendar days for which rate r_i applies (on most days, n_i will be 1, but on a Friday it will generally be 3, and it will also be larger than 1 on the business day before a holiday.) This can also be stated as the number of calendar days from and including business day i to but excluding the following business day.

N = the market convention for quoting the number of days in the year (in the United States, the convention is N = 360)

And i represents a series of ordinal numbers representing each business day in the period

Source: NY Federal Reserve, ISDA

SOFR Interest Calculation Example

Example: One-Week SOFR Loan of $1 Million Drawn on August 24, 2020 repaid on August 31, 2020

The interest is calculated on a 1 business day lookback and may change daily

It is compounded for each day in the period

*Daily Accrued Interest = Day Difference /360 * SOFR Rate/100 * (Prior Day Principal + Accumulated Interest)*

Total Interest = Sum of Daily Accrued Interest

Day	Date	Day Difference	SOFR Rate	Daily Interest %	Daily Accrued Interest $	Principal + Accumulated Interest $
Monday	8/24/2020		0.08			1,000,000.00
Tuesday	8/25/2020	1	0.08	0.00022%	2.22	1,000,002.22
Wednesday	8/26/2020	1	0.07	0.00022%	2.22	1,000,004.44
Thursday	8/27/2020	1	0.07	0.00019%	1.94	1,000,006.39
Friday	8/28/2020	1	0.07	0.00019%	1.94	1,000,008.33
Monday	8/31/2020	3		0.00058%	5.83	1,000,014.17
Total					**14.17**	**1,000,014.17**

Source: SECOR Analytics, Bloomberg, NY Federal Reserve, ISDA

Determination of SOFR to LIBOR Spread

Changes in basis today does not have significant impact on 5-year historical median spread

Spread Change Impact on 5-year Historical Median
(5Y5Y SOFR vs. 3-month USD LIBOR as of August 28, 2020)

Announcement Date	Floor	-20 bps	-10 bps	-5 bps	+0 bps	+5 bps	+10 bps	+20 bps	Cap
Current	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2
YE’20	26.2	26.2	26.2	26.2	26.2	26.2	26.5	27.6	28.3
31-Mar-21	26.2	26.2	26.2	26.2	26.2	26.3	27.2	29.4	31.2
30-Jun-21	25.7	25.7	25.7	25.7	25.7	26.1	27.7	32.3	34.1
30-Sep-21	25.1	25.1	25.1	25.2	25.2	25.7	27.6	34.4	35.6
YE’21	23.5	23.5	23.5	23.5	23.6	24.9	27.1	34.9	36.9

- The spread added to SOFR will be based on a 5-year historical median basis between SOFR and each LIBOR tenor
- The spread will be set when regulators officially announce that LIBOR is no longer representative
  - This may happen prior to YE 2021
  - Assuming the cutoff date is YE 2021, most data points already known – this is a median not average, so should not shift as much
  - Would expect spread to remain relatively close to historical median
- Another date will be set for when LIBOR will cease – expected YE 2021
  - At this point, the actual floating leg rate will switch from LIBOR to SOFR + Spread determined on the announcement date

Source: SECOR, Goldman Sachs, Barclays

Key USD LIBOR Transition Industry Milestones

	Key Milestones	Date
ISDA	▪ Finalize ISDA definitions and protocol	Expected Soon
CCP	▪ **"Big Bang 2": Discounting at Central Counterparty Clearing house (CCP) transition from Fed Funds to SOFR**	**16-Oct-2020**
ARRC	▪ Hardwired fallback language incorporated into new USD LIBOR FRNs, securitizations and consumer mortgage loans	30-Jun-2020
	▪ Technology and operations vendor readiness for USD LIBOR FRNs	30-Jun-2020
	▪ Hardwired fallback language incorporated into new USD LIBOR business loans and student loans	30-Sep-2020
	▪ Discontinue issuance of USD LIBOR-based consumer loans maturing post-2021	30-Sep-2020
	▪ Technology and operations vendor readiness for USD LIBOR business loans and consumer mortgage loans	30-Sep-2020
	▪ Recommended fallback language incorporated into new USD LIBOR derivative contracts	Nov-2020
	▪ Technology and operations vendor readiness for USD LIBOR securitizations	31-Dec-2020
	▪ Discontinue issuance of USD LIBOR-based FRNs maturing post-2021	31-Dec-2020
	▪ Discontinue issuance of USD LIBOR-based derivatives, business loans and non-CLO securitizations maturing post 2021	30-Jun-2021
	▪ Discontinue issuance of USD LIBOR-based CLOs maturing post-2021	30-Sep-2021
	▪ Expected creation of term SOFR	Q4-2021

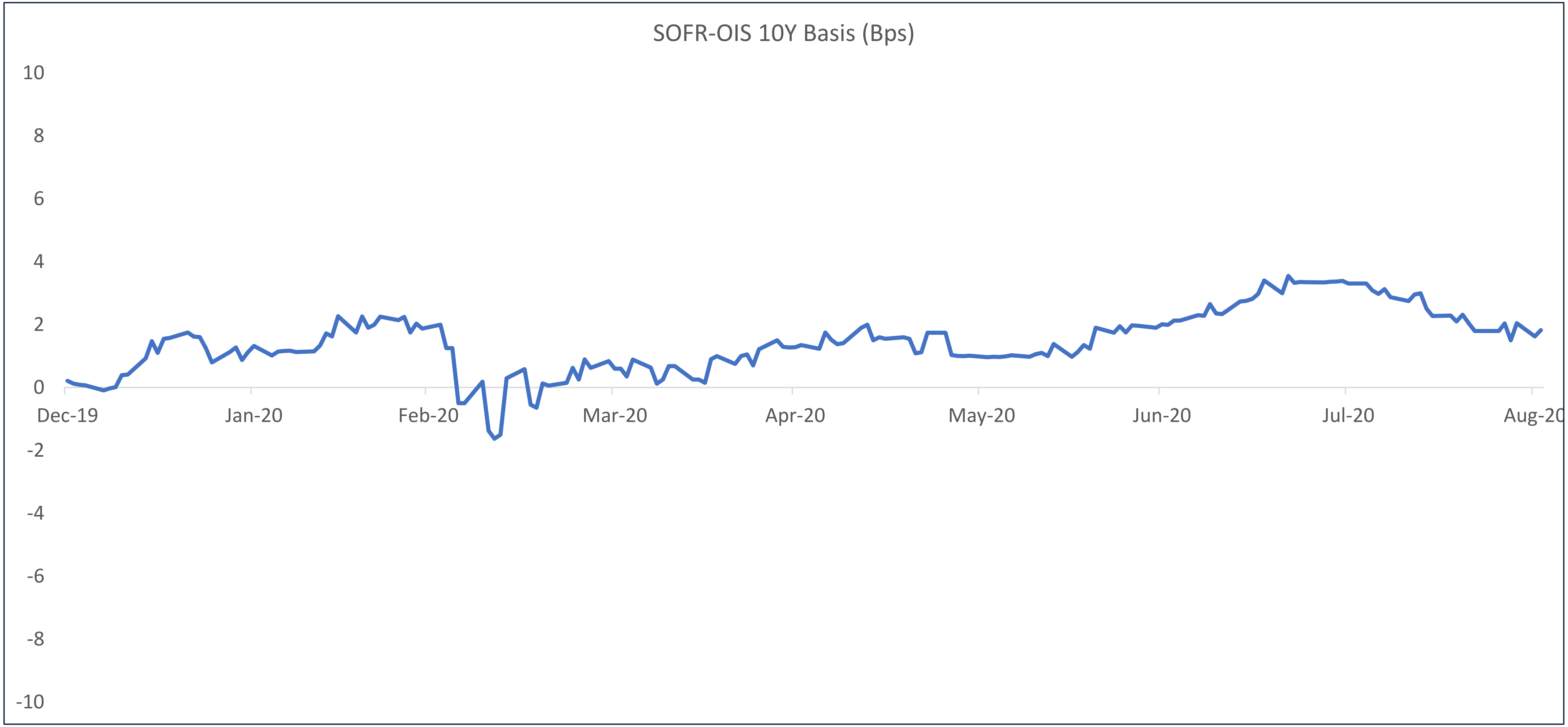
Source: SECOR, Goldman Sachs

Next Major Milestone: “Big Bang 2.0” – Discounting Switch at CCPs

- Based on the recommendations from respective committees, CCPs are expected to transition the discounting and price alignment interest (PAI) of EUR and USD swaps in a ‘big-bang’ manner:
  - Transition for each currency will be implemented across legacy and new cleared transactions by all the systemic CCPs on a single date
  - €STR switch took place over the weekend of July 25/26, 2020
    - €STR discounted pricing from July 27th
    - This transition was relatively seamless
  - SOFR switch-over is expected over the weekend of October 17/18, 2020
- Discounting transition for cleared swaps marks an important milestone laid down by both the ARRC and the working group on euro risk free rates in the adoption of the new risk-free rates
- Valuation methodology for centrally cleared swaps:
  - Fed funds (EFFR) to SOFR-based discounting in USD denominated derivatives
  - Since the spread between Fed Funds and SOFR is not fixed, the CCPs will provide cash and basis swap compensation to offset switch to SOFR

Sources: LCH, ECB, Barclays, SECOR

SOFR-OIS Basis Remains in Tight Range



Source: SECOR, Bloomberg

Benchmark Transition Timeline

Jul 2013
IOSCO publishes **"Principles for Financial Benchmarks"** guiding governance, integrity, methodology, quality and accountability

Dec 2016
Tokyo Overnight Average Rate (TONAR) selected as preferred JPY RFR (already in publication)

Apr 2017
Sterling Overnight Index Average (SONIA) selected as preferred GBP RFR, with reforms to the rate underway

Jun 2017
Secured Overnight Financing Rate (SOFR) selected as preferred USD RFR (yet to be published)

Oct 2017
Swiss Average Rate Overnight (SARON) selected as preferred CHF RFR (already in publication)

Dec 2017
Discontinuation of TOIS fixing, replaced by **SARON**

Feb 2018
EMMI concludes **EONIA will not be compliant with BMR**

Apr 2018
New York Fed begins **publishing SOFR**

Apr 2018
Publication **of reformed Sterling Overnight Index Average (SONIA)**

May 2018
CME launches **SOFR futures**

Jul 2018
LCH begins **clearing SOFR swaps** with current EFFR discounting environment

Sep 2018
€STR selected as preferred EUR RFR and EONIA replacement

Sep 2018
FCA and PRA issue **"Dear CEO Letter"**

Oct 2018
CME begins clearing swaps using **SOFR PAI / discounting**

Apr 2019
ARRC releases fallback recommendations **for FRNs and syndicated loans**

2 Oct 2019
€STR publication begins; **EONIA reform** effective (calculated as €STR + 8.5bps)

15 Nov 2019
Final parameters released for ISDA's consultation on **IBOR fallback methodologies**

Q4 2019
Completion of implementation of new **hybrid methodology for EURIBOR**

6 Jan 2020
CME launches **SOFR options**

From 2 March 2020
Sterling WG milestone for **interest rate swap conventions change from GBP LIBOR to SONIA**

2 March 2020
FED begins **publication of SOFR Index and 30-, 90-, and 180-day SOFR averages**

27 Jul 2020
Transition of PAI / discounting at **Eurex, LCH and CME from EONIA to €STR**

Major consultations have also concluded since the start of the transition across all major currencies, and covering a wide range of regulatory / industry bodies and topics

Source: ARRC Progress Timeline, 30 October 2018; ISDA, "IBOR Global Transition Roadmap 2018", 1 February 2018; EMMI, "EURIBOR and EONIA reforms," 26 February 2018, Goldman Sachs

Possible Future Events Timeline

Sep 2020
Expected launch of final amendments to the **2006 ISDA Definitions** and protocol capturing updated derivatives fallback language

End-Sep 2020
ARRC target to **cease all new issuance of USD LIBOR-referencing consumer loans** maturing beyond 2021

16 Oct 2020
Expected transition of PAI / discounting at the **CME and LCH from Federal Funds to SOFR**

YE2020
ARRC target to **cease all new issuance of USD LIBOR-referencing FRNs** maturing beyond 2021

End-Q2 2021
ARRC target to **cease all new issuance of USD LIBOR-referencing business loans, non-CLO securitizations** and **derivatives** maturing beyond 2021

End-Sep 2021
ARRC target to **cease all new issuance of USD LIBOR-referencing CLOs** maturing beyond 2021

Q4 2021
Expected creation of **term SOFR reference rate**

1 Jan 2022
Banks will no longer be compelled by the FCA to submit LIBOR quotes

Q3 2020
Creation of provisional live **Term SONIA reference rate (TSRR);** dealer streaming of TSRR ongoing

End-Q3 2020
Sterling WG target for lenders to be **in a position to offer non GBP LIBOR linked products** to their customers and to **include clear contractual fallbacks** in all new and re-financed LIBOR-referencing loan products

1-Jan 2021
HKMA-regulated firms should be in a position to **offer products referencing alt. RFRs**; **Adequate fall-back provisions should be included in all newly-issued LIBOR linked contracts** that will mature after 2021

End-Q1 2021
Sterling WG targets to **cease all new issuance of GBP LIBOR-referencing loan products** maturing beyond 2021 and to **significantly reduce stock of LIBOR referencing contracts**

30 Jun 2021
HKMA-regulated firms should **cease to issue new LIBOR-linked products** that will mature after 2021

31 Dec 2021
Deadline for BMR compliance for critical benchmarks – EONIA will no longer be permitted as a reference rate in new contracts

Source: ARRC Progress Timeline, 30 October 2018; ISDA, "IBOR Global Transition Roadmap 2018", 1 February 2018; EMMI, "EURIBOR and EONIA reforms," 26 February 201; ISDA, "Letter to FSB OSSG", 10 April 2019; ISDA, "ISDA Publishes Two Consultations on Benchmark Fallbacks," 16 May 2019. LSTA, "SOFR and Loans: What's on deck for 2020", 7 January 2020, Goldman Sachs

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