

Libor Cessation

Status and Progress

Treasury and Market Risk Policy



Background

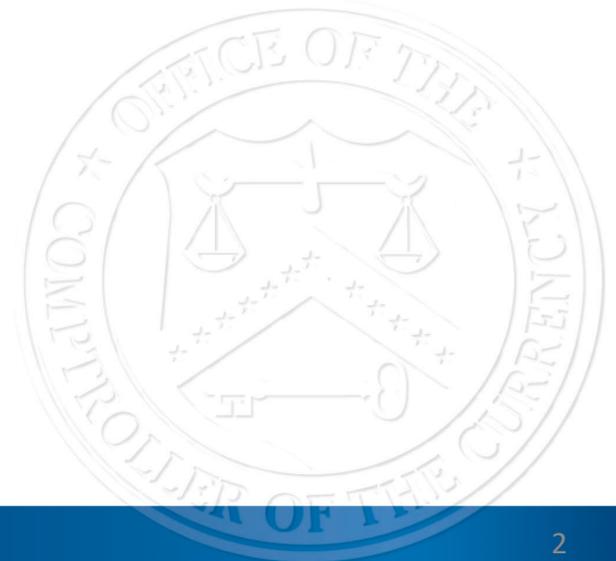
- IBORs and Libor
- Libor Cessation
- The Alternative Reference Rate Committee
- The Secured Overnight Finance Rate

Potential Impacts of Libor's cessation

- Fallback language
- Operations/Systems
- Compliance Requirements

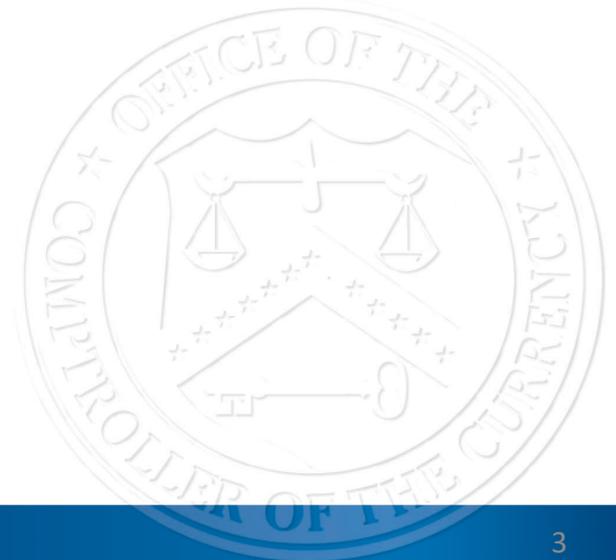
Recent Market Development

Supervisory Communications



Libor Cessation

Background

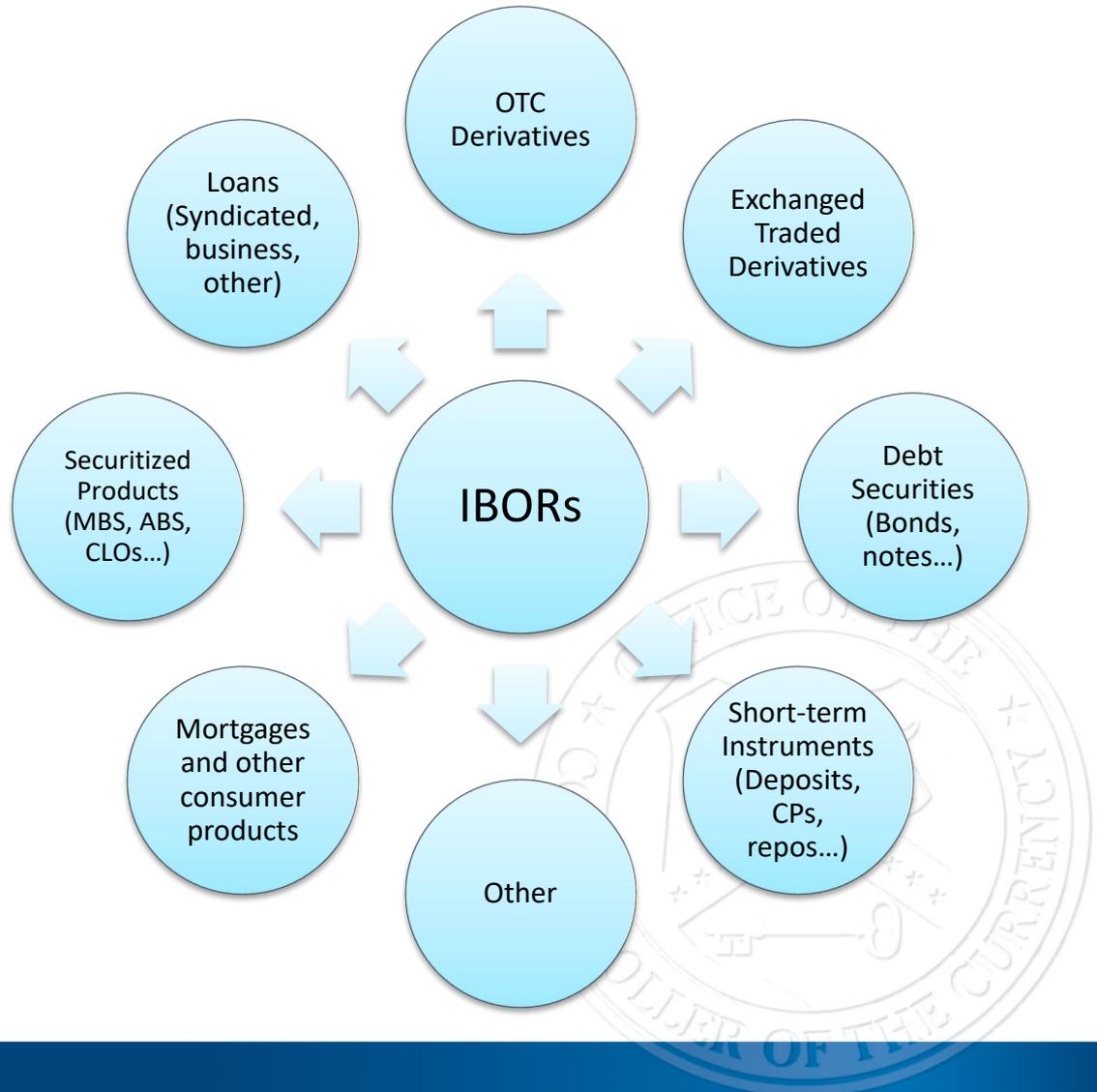


Interbank Offered Rates or “IBORs” are reference rates that identify the average cost for a bank to borrow in the interbank markets with various tenors and currencies including:

- Libor – London Interbank Offered Rate
- EONIA/EURIBOR – Euro Interbank Offered Rate
- TIBOR – Tokyo Interbank Offered Rate
- NIBOR – Norway Interbank Offered Rate
- HIBOR – Hong Kong Interbank Offered Rate
- Other IBORs

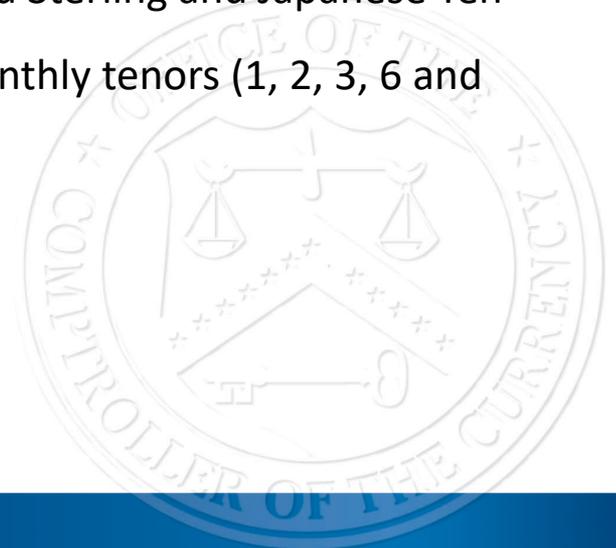


IBOR products are used by a broad range of market participants including, banks, asset managers, investment funds, hedge funds, insurance, central banks, corporates, CCPs, exchanges, consumers and others.



London Interbank Offered Rate or “Libor” is;

- ❑ a benchmark rate for financial instruments and loan products
- ❑ determined by a group of banks, “panel banks,” that submits rates daily to the ICE for computation and publication.
- ❑ currently produced for five currencies with seven maturities:
 - Currencies include US Dollar, Swiss Franc, Euro, Pound Sterling and Japanese Yen
 - Terms include overnight, 1 week, and a variety of monthly tenors (1, 2, 3, 6 and 12)



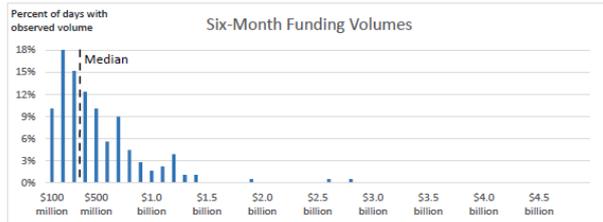
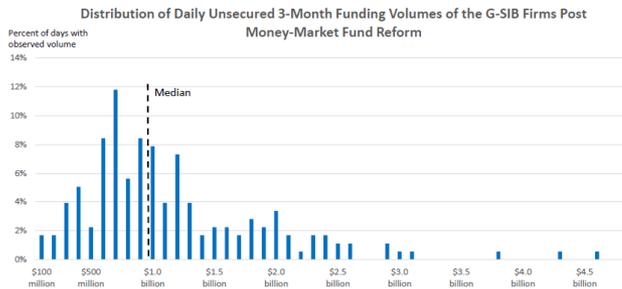
The magnitude of Libor exposure in the financial system makes it's cessation more significant than past rate discontinuations.

- ❑ Rate cessation is frequent and usually a non-event. Examples:
 - 11th District COFI – shut down 12/31/2019
 - FHFA ARM Index – shut down 5/31/2019
- ❑ Unlike other reference rate discontinuations, Libor is a ubiquitous rate
 - impacts over \$300 trillion (notional) of financial contracts. USD Libor estimated to be referenced in roughly \$200 trillion (as of end of 2016):
 - \$190 trillion (95%) of this exposure in derivatives
 - \$3.4 trillion business loans
 - \$1.3 trillion retail mortgages and other consumer loans
 - \$1.8 trillion floating rate debt
 - \$1.8 trillion securitized products



Underlying vs. Contract Referenced

Estimated USD LIBOR Market Footprint by Asset Class¹



		Volume (Trillions USD)	Share Maturing By:			
			End 2021	End 2025	After 2030	After 2040
Over-the-Counter Derivatives	Interest rate swaps	81	66%	88%	7%	5%
	Forward rate agreements	34	100%	100%	0%	0%
	Interest rate options	12	65%	68%	5%	5%
	Cross currency swaps	18	88%	93%	2%	0%
Exchange Traded Derivatives	Interest rate options	34	99%	100%	0%	0%
	Interest rate futures	11	99%	100%	0%	0%
Business Loans²	Syndicated loans	1.5	83%	100%	0%	0%
	Nonsyndicated business loans	0.8	86%	97%	1%	0%
	Nonsyndicated CRE/Commercial mortgages	1.1	83%	94%	4%	2%
Consumer Loans	Retail mortgages ³	1.2	57%	82%	7%	1%
	Other Consumer loans	0.1	---	---	---	---
Bonds	Floating/Variable Rate Notes	1.8	84%	93%	6%	3%
Securitizations	Mortgage -backed Securities (incl. CMOs)	1.0	57%	81%	7%	1%
	Collateralized loan obligations	0.4	26%	72%	5%	0%
	Asset-backed securities	0.2	55%	78%	10%	2%
	Collateralized debt obligations	0.2	48%	73%	10%	2%
Total USD LIBOR Exposure:		199	82%	92%	4%	2%

¹ Source: Federal Reserve staff calculations, BIS, Bloomberg, CME, DTCC, Federal Reserve Financial Accounts of the United States, G.19, Shared National Credit, and Y-14 data, and JPMorgan Chase. Data are gross notional exposures as of year-end 2016. ² The figures for syndicated and corporate business loans do not include undrawn lines. Nonsyndicated business loans exclude CRE/commercial mortgage loans. ³ Estimated maturities based on historical pre-payment rates

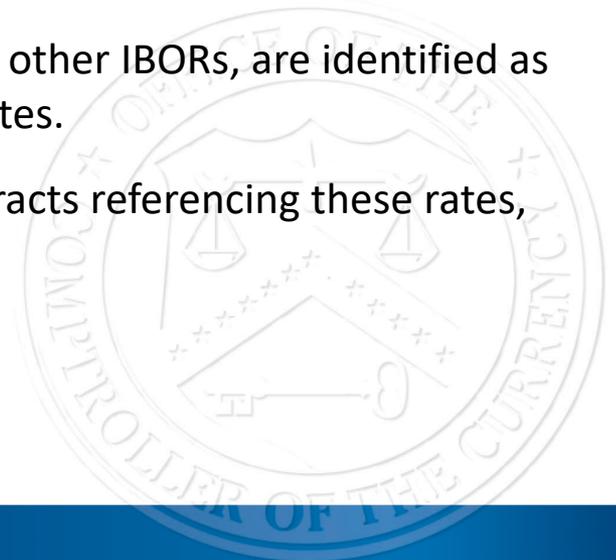
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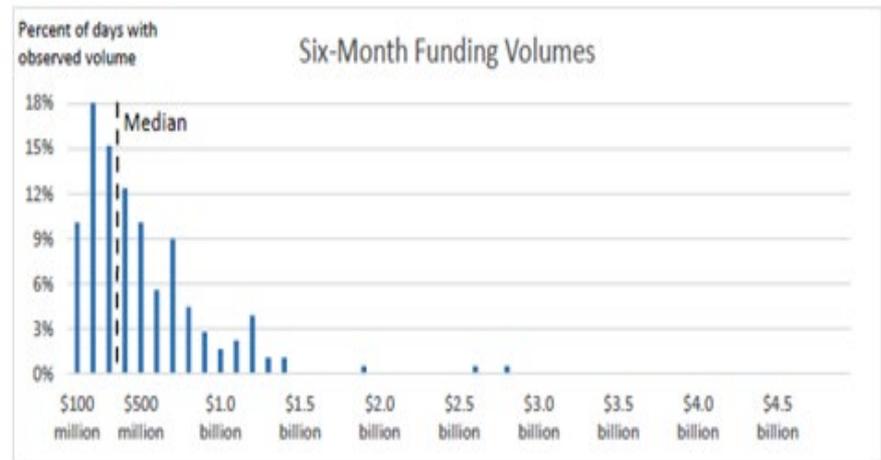
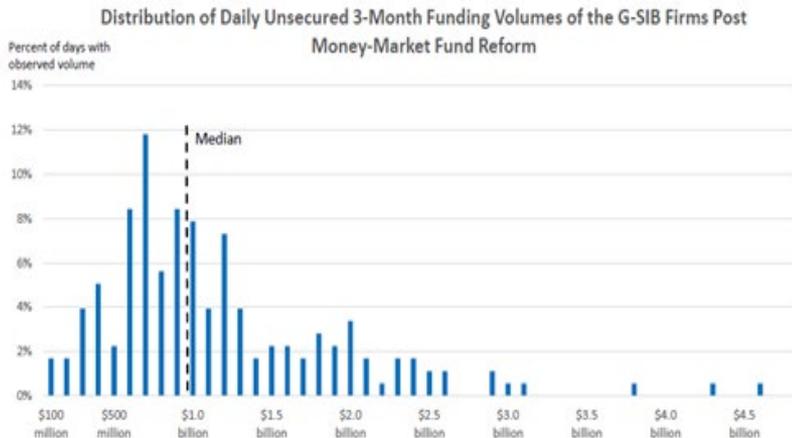
Concerns of whether Libor is representative of borrowing rates a key driver of Libor cessation.

- ❑ Since global financial crisis, Libor increasingly based on expert judgment of panel banks due to declines in unsecured, wholesale borrowing.
 - Libor is submission based, not transaction based, meaning that each panel bank is qualitatively submitting rates.
 - The underlying transaction volume is scarce. Daily volume is below \$1 billion.
 - Due to the low market transaction volume, Libor, and other IBORs, are identified as not necessarily indicative of actual bank borrowing rates.
 - This weakness coupled with the large volume of contracts referencing these rates, has resulted in systemic risk concerns.



Daily market volumes are low. The median volume of G-SIB daily unsecured 3-month funding is under \$1 billion.

Funding volumes when looking over six-month periods are even lower with medium funding around \$350 million.



The potential for rate manipulation is another key driver of Libor cessation.

❑ Libor is exposed to manipulation and scandals by the panel banks.

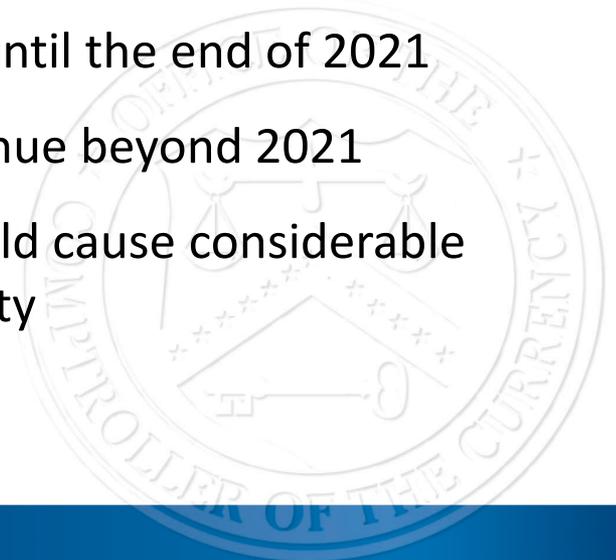
Scandals resulted in:

- Billions in fines for some large international banks (US and UK regulators have fined banks more than \$9 billion.)
- Criminal prosecutions in US and UK (Traders at Barclays, UBS and other banks are sentenced to jail time.)
- A lack of trust in the rate. Original creator of the rate, the British Bankers' Association, transferred oversight of Libor to UK regulators (Financial Conduct Authority) and its current administrator is ICE (Intercontinental Exchange) .



In 2013, the International Organization of Securities Commissions or “IOSCO” published Principles for Financial Benchmarks.

- ❑ 2013-2014, the Financial Stability Oversight Council (FSOC) and the Financial Stability Board (FSB) recommended identifying alternative interest rate benchmarks.
- ❑ In 2017, the Financial Conduct Authority (FCA) communicated that the FCA had to exert significant pressure to hold banks on Libor panels;
 - the banks have voluntarily agreed to submit until the end of 2021
 - no guarantee that Libor publication will continue beyond 2021
 - without preparation, a cessation of Libor would cause considerable disruption and could threaten financial stability

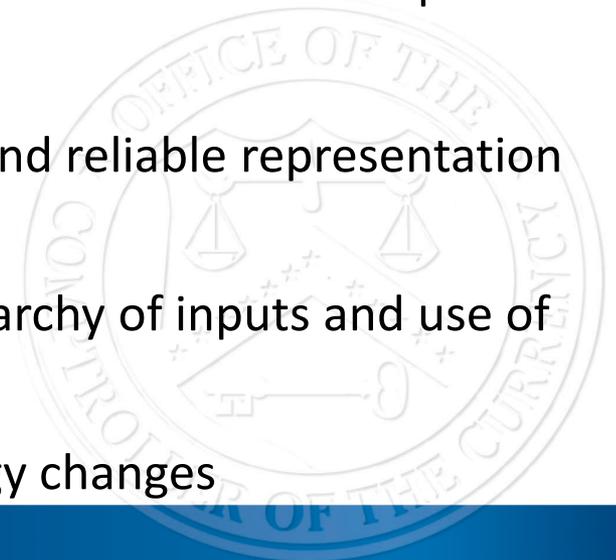


Governance

- ❑ Overall administrator responsibilities for benchmark determination process
- ❑ Oversight of 3rd parties apart of determination process
- ❑ Policy & procedure to identify, control, report, mitigate/avoid conflicts of interest
- ❑ Control framework for process of determining and distributing benchmark
- ❑ Oversight function to review & provide challenge to determination process

Quality of the benchmarks

- ❑ Design and data sufficiency results in accurate and reliable representation of Interest it seeks to measure
- ❑ Make available and ensure transparency of hierarchy of inputs and use of expert judgment
- ❑ Periodic reviews to identify needed methodology changes

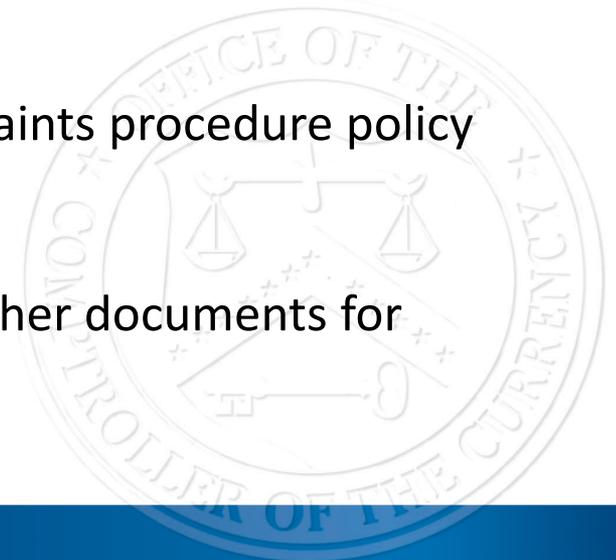


Quality of the methodology

- Document and make available methodology and rationale
- Make available rationale for proposed material methodology changes
- Policy and procedure to address need for benchmark cessation
- Guidelines for submitter “Code of Conduct”
- External data collection and transmission process controls, if applicable

Accountability

- Establish and make available stakeholder complaints procedure policy
- Independent audit reviews and reports
- Readily available documents, audit trails, and other documents for Regulatory Authorities



In response to the recommendations by FSOC and FSB, ARRC (Alternative Reference Rate Committee) was convened in November 2014 by the Board of Governors and Federal Reserve Bank of New York.

- ❑ ARRC members include the largest global dealers, CCPs and Ex Officio members including the Board, FRBNY, CFTC, Treasury, OFR, the OCC (DC Kevin Walsh) and others.
- ❑ ARRC objectives:
 - Identify risk free alternative for U.S. dollar Libor that meet standards of best practice
 - Develop plans for the voluntary adoption of these rates
 - Identify best practices for contract robustness



The ARRC reconstituted in March 2018 with expanded membership to;

- ❑ address increased risk that Libor may not exist beyond 2021
- ❑ promote the adoption of SOFR
- ❑ serve as forum to coordinate and track planning across cash and derivatives products and market participants using U.S. dollar Libor.

ARRC Members

AXA	JP Morgan Chase & Co.
Bank of America	LCH
BlackRock	MetLife
Citigroup	Morgan Stanley
CME Group	National Association of Corporate Treasurers
Deutsche Bank	PIMCO
Federal National Mortgage Association	TD Bank
Federal Home Loan Mortgage Corporation	The Federal Home Loan Bank of New York
GE Capital	The Independent Community Bankers of America
Goldman Sachs	The Loan Syndications and Trading Association
Government Finance Officers Association	SIFMA
HSBC	Wells Fargo
Intercontinental Exchange	World Bank Group
ISDA	

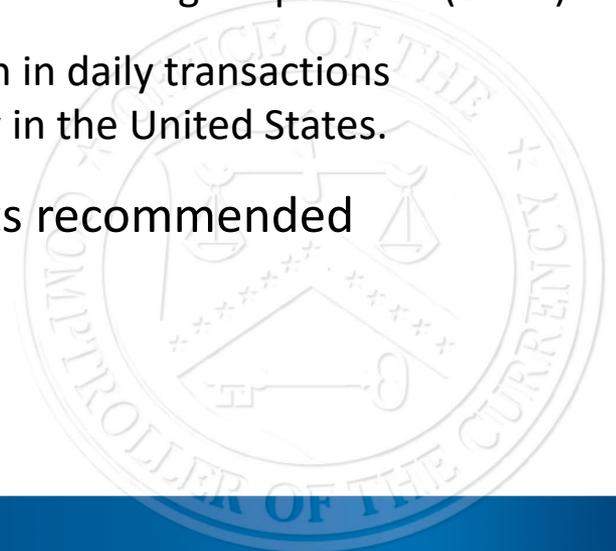
Ex Officio Members

Board of Governors of the Federal Reserve	Federal Reserve Bank of New York
Bureau of Consumer Finance Protection	Office of Financial Research
Commodity Futures Trading Commission	Office of the Comptroller of the Currency
Federal Deposit Insurance Corporation	Securities and Exchange Commission
Federal Housing Finance Agency	Treasury Department



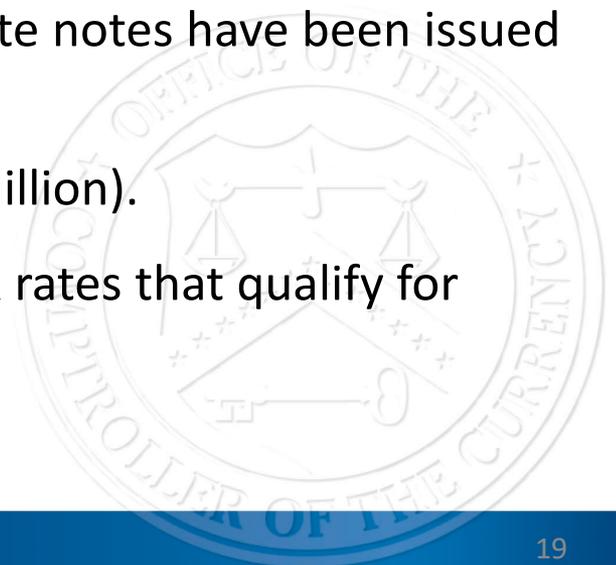
ARRC has identified and created a new reference rate known as the Secured Overnight Finance Rate (SOFR)

- ❑ SOFR is a secured overnight rate based on market transactions thereby removing the need of panel submissions that might be qualitatively based. The rate:
 - is a broad measure of transactions in overnight treasury repo market.
 - is based on triparty repo transactions, including cleared GCF transactions, and cleared bilateral repo data from the Depository Trust & Clearing Corporation (DTCC).
 - is a transaction based risk free rate - over \$700 billion in daily transactions representing the largest rates market at any maturity in the United States.
- ❑ In June 2017, ARRC officially selected SOFR as its recommended alternative to Libor.
- ❑ ARRC's paced transition plan.

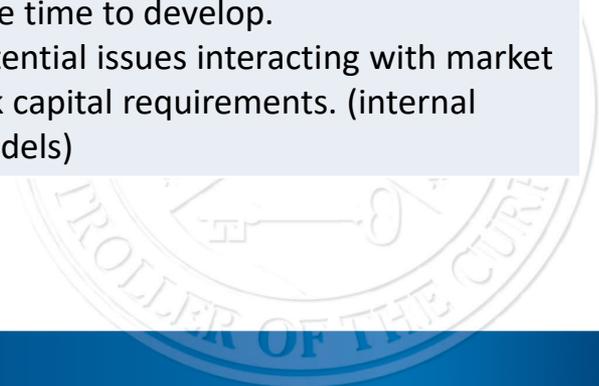


SOFR Development Timeline:

- ❑ **April 2018:** NY Fed publishing SOFR rate. (Office of Financial Research's NPR of data collection on cleared U.S. repo.)
- ❑ **May 2018:** CME launched SOFR futures contracts.
- ❑ **In 2018:** both LCH and CME launched clearing of OTC SOFR swaps.
- ❑ **July 2018:** Fannie Mae issued \$6 billion floating rate notes reference SOFR.
- ❑ **As of April 2019:** about \$80 billion of floating rate notes have been issued reference SOFR.
- ❑ Ginnie Mae's first SOFR indexed REMICs (\$40 million).
- ❑ FASB has added SOFR into the list of benchmark rates that qualify for hedge accounting but many challenges remain.



	LIBOR	SOFR
Underlying transactions	<ul style="list-style-type: none"> • Submission based. • Declined underlying transactions in unsecured wholesale borrowing. 	<ul style="list-style-type: none"> • Transaction based. • Underlying market (treasury repo market) has over \$700 billion of daily volume.
Credit component	<ul style="list-style-type: none"> • LIBOR is unsecured that is supposed to reflect bank cost of funds, may widen during time of stress. 	<ul style="list-style-type: none"> • SOFR is a secured risk free rate.
Term structure	<ul style="list-style-type: none"> • LIBOR submissions are made across term structure. 	<ul style="list-style-type: none"> • SOFR is an overnight interest rate.
Liquidity	<ul style="list-style-type: none"> • Large daily trading volume in transactions referencing LIBOR 	<ul style="list-style-type: none"> • Liquidity in trades referencing SOFR will take time to develop. • Potential issues interacting with market risk capital requirements. (internal models)



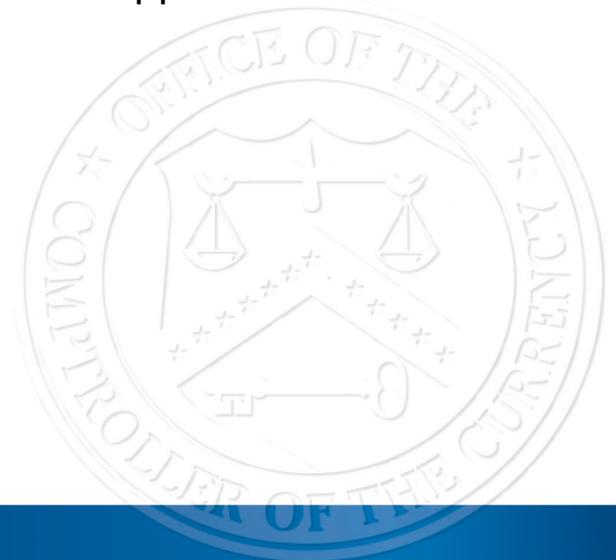
Two key issues with SOFR are how to calculate term and credit spread. Potential methodologies include:

SOFR Replacement

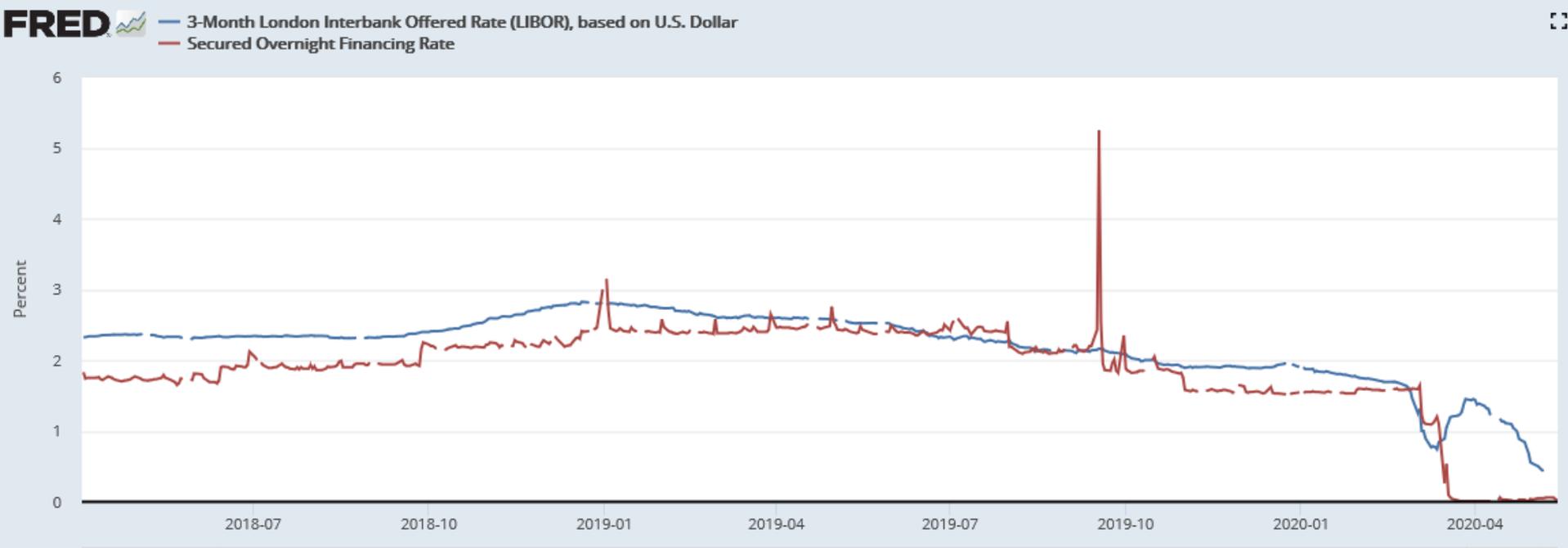
- Forward looking Term SOFR
- SOFR Compounded in Advance
- SOFR Compounded in Arrears
- Simple SOFR in Arrears

SOFR Spread Adjustment

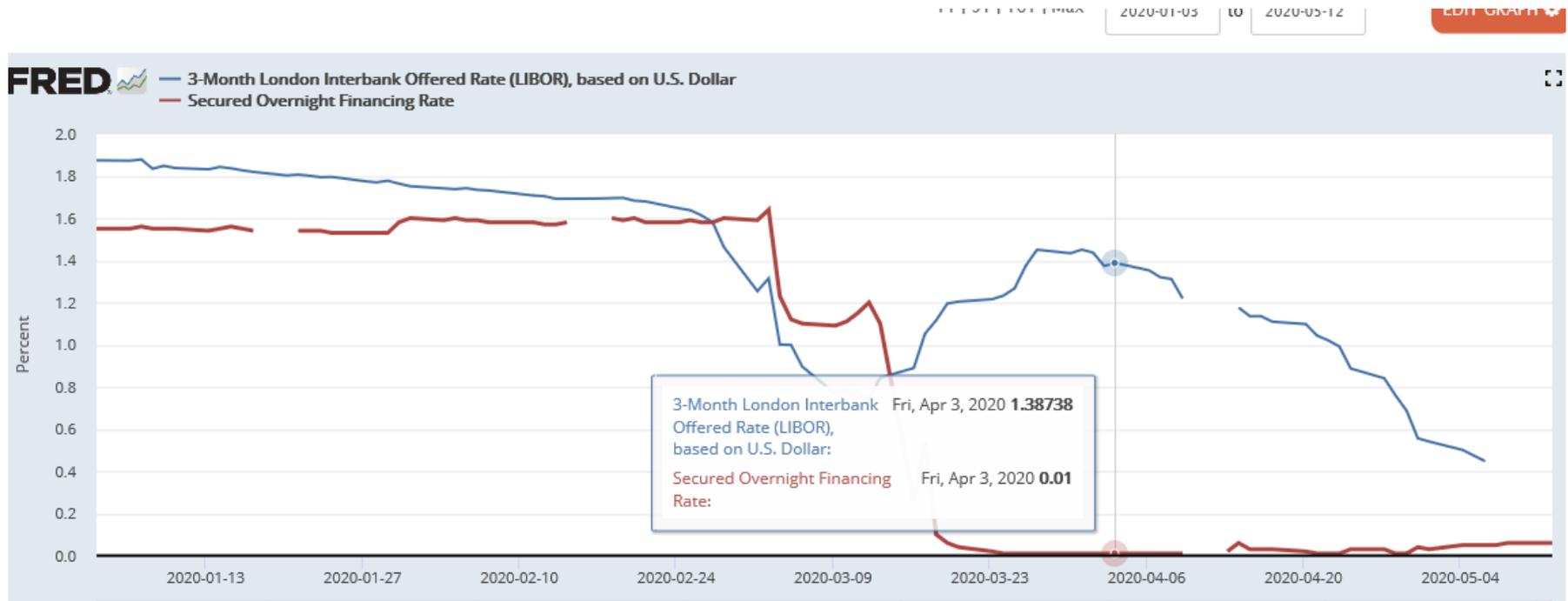
- Forward Approach
- Historic Mean/Median Approach
- Spot-Spread Approach



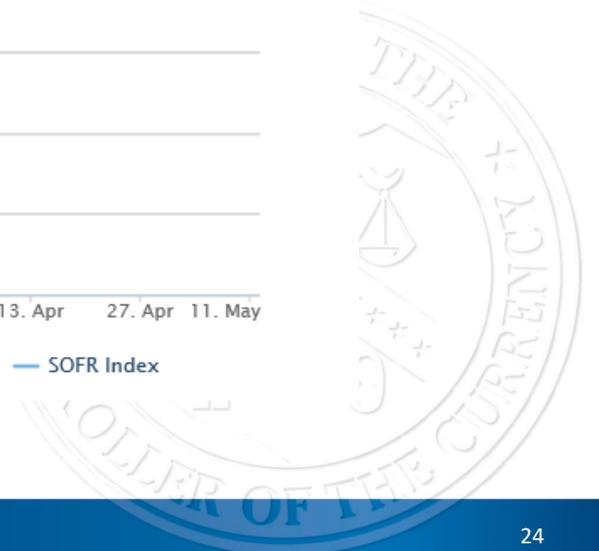
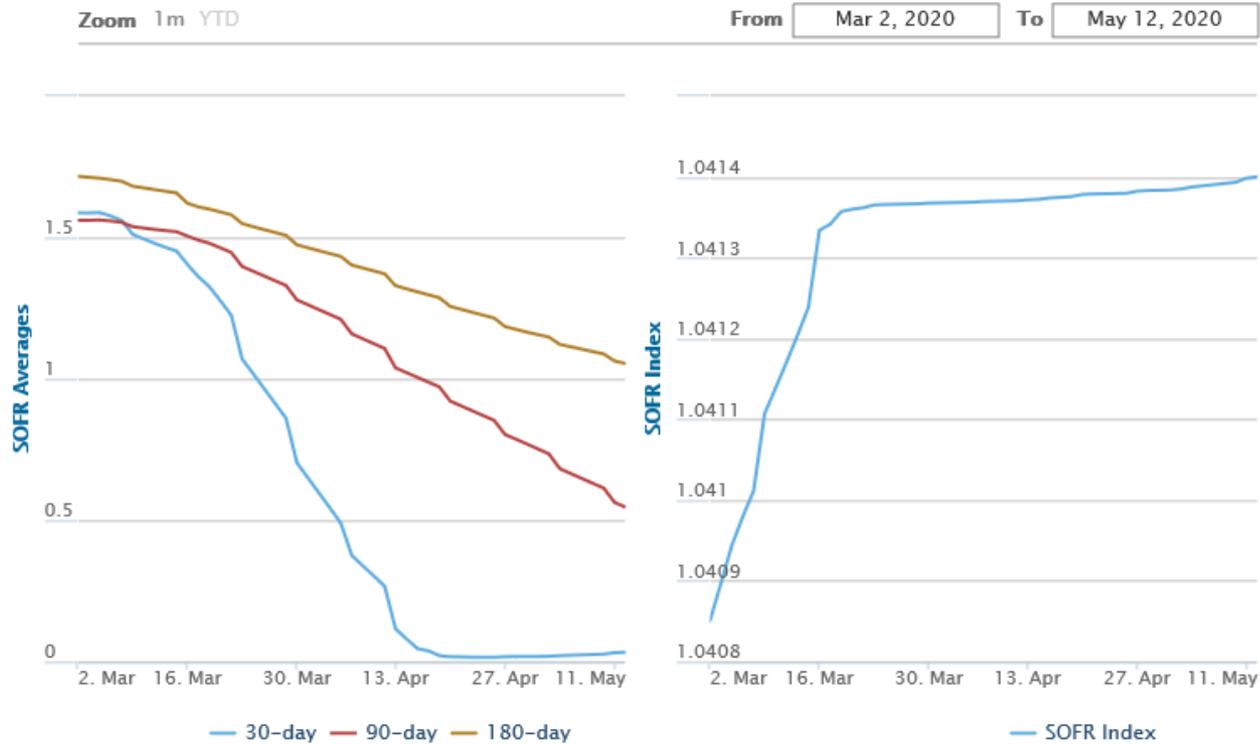
Comparison of Libor and SOFR



As of May 11, SOFR o/n 0.06; FF 0.25; Libor 1m 0.20; Libor 3m 0.43



NY Fed started publishing SOFR Average and a SOFR Index on March 2nd.

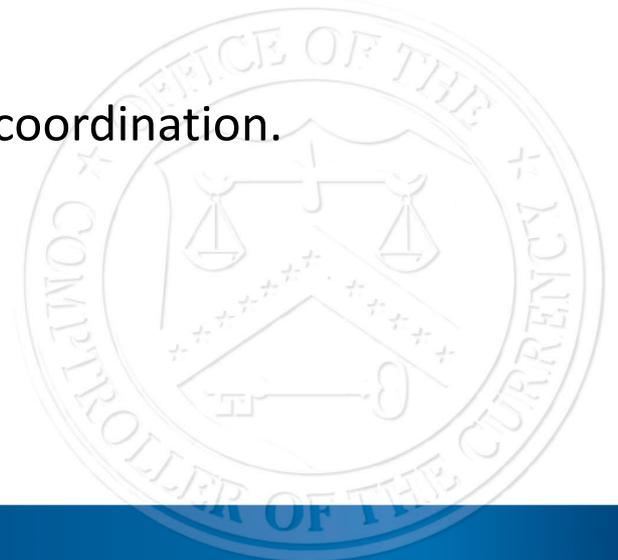


Background – ARRC’s Paced Transition Plan

	Step	Anticipated Date of Completion	Actual Date
1.	Infrastructure for futures and/or OIS trading in the new rate is put in place by ARRC members	2018 H2	✓ ARRC members already trading futures and OIS
2.	Trading begins in futures and/or bilateral, uncleared, OIS that reference SOFR.	by end 2018	✓ CME began SOFR Futures on May 7, 2018; ICE to launch on October 22, 2018
3.	Trading begins in cleared OIS that reference SOFR in the current (EFFR) PAI and discounting environment	2019 Q1	✓ LCH offered SOFR OIS and basis swap clearing on July 18, 2018; CME began clearing OTC SOFR swaps on October 1, 2018
4.	CCPs begin allowing market participants a choice between clearing new or modified swap contracts (swaps paying floating legs benchmarked to EFFR, LIBOR, and SOFR) into the current PAI/discounting environment or one that uses SOFR for PAI and discounting.	2020 Q1	✓ CME began clearing swaps using SOFR PAI/discounting on October 1, 2018
5.	CCPs no longer accept new swap contracts for clearing with EFFR as PAI and discounting except for the purpose of closing out or reducing outstanding risk in legacy contracts that use EFFR as PAI and discount rate. Existing contracts using EFFR as PAI and the discount rate continue to exist in the same pool, but would roll off over time as they mature or are closed out.	2021 Q2	LCH has announced that it expects to move SOFR PAI/discounting on both new and legacy swaps during the second half of <u>2020</u>
6.	Creation of a term reference rate based on SOFR-derivatives markets once liquidity has developed sufficiently to produce a robust rate.	by end of 2021	

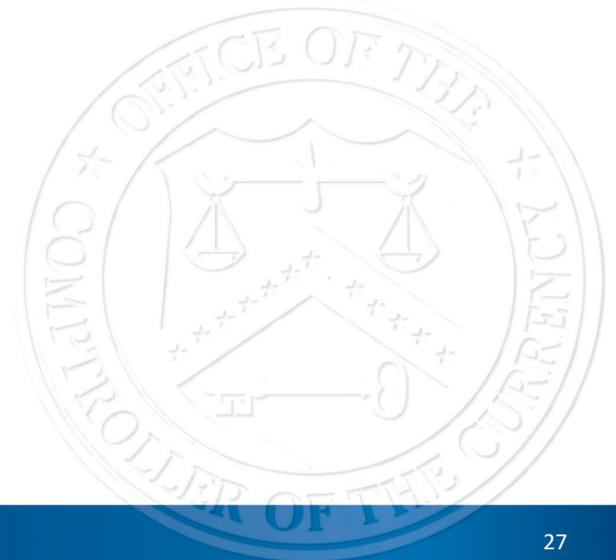


- ❑ Supporting SOFR use and liquidity
- ❑ Encouraging the development and strengthening of market infrastructure and operations to support SOFR
- ❑ Creating and encouraging the use of robust contractual fallbacks
- ❑ Developing materials to support consumer education and outreach efforts
- ❑ Increasing clarity on key legal, tax, accounting, and regulatory matters
- ❑ Advancing outreach, education, and global coordination.



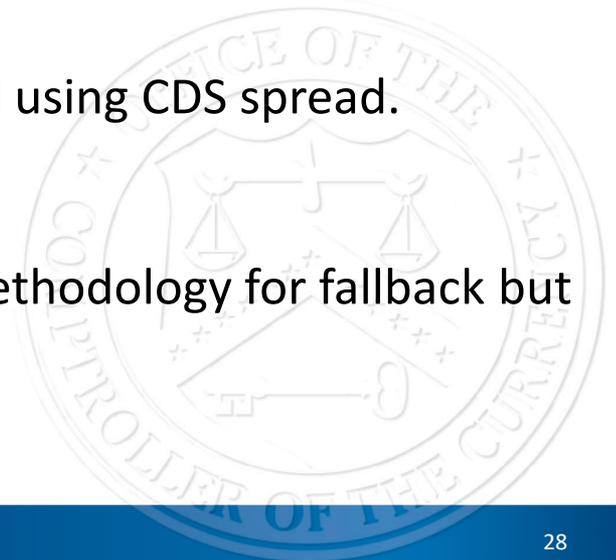
- ❑ As previously discussed, SOFR is a secured rate unlike Libor which had a credit risk component.
 - Market participants question the lack of a credit spread in SOFR and how that would impact operations.

- ❑ Banks expressed the need for credit spread inclusion through a variety of forums including letters to regulators.
 - The letter highlighted concerns with the lack of credit spread in SOFR.
 - Signatories included a variety of banks and solutions



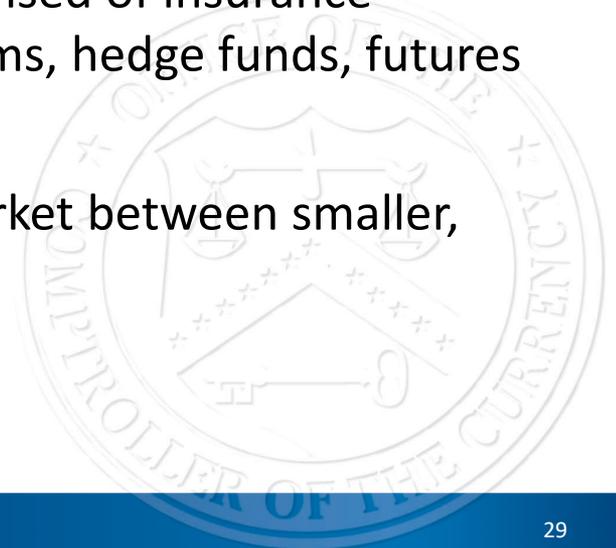
Several parties are implementing actions meant to help identify SOFR's missing credit spread.

- The FRBNY established the Credit Spread Group (CSG), a group that is separate from the ARRC. CSG is a public/private committee using quantitative analysis to identify a potential spread adjustment to include with SOFR.
- Markit is developing a credit spread pricing tool using CDS spread.
- ARRC and ISDA proposed spread adjustment methodology for fallback but does not solve the credit spread issue.



Ameribor is an index of overnight unsecured lending taking place across the CBOE platform American Financial Exchange (AFX).

- ❑ In 2015, Richard Sandor created the AFX, which allows banks and financial institutions to lend and borrow from one another at interest rates benchmarked by its own index, Ameribor.
- ❑ Currently the AFX has more than 189 members across the U.S. that includes 146 banks and 43 non - banks comprised of insurance companies, broker-dealers, private equity firms, hedge funds, futures commission merchants, and asset managers.
- ❑ It is mainly concerned with the interbank market between smaller, regional US banks.

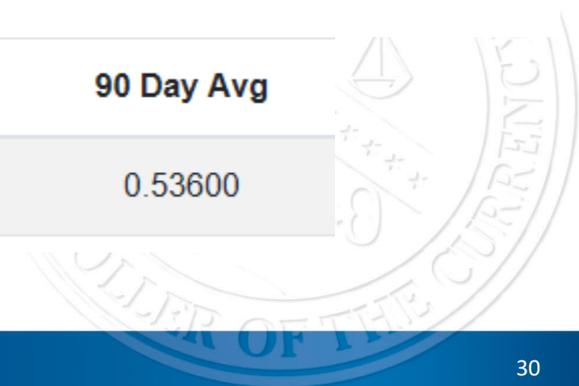


AMERIBOR® RATES

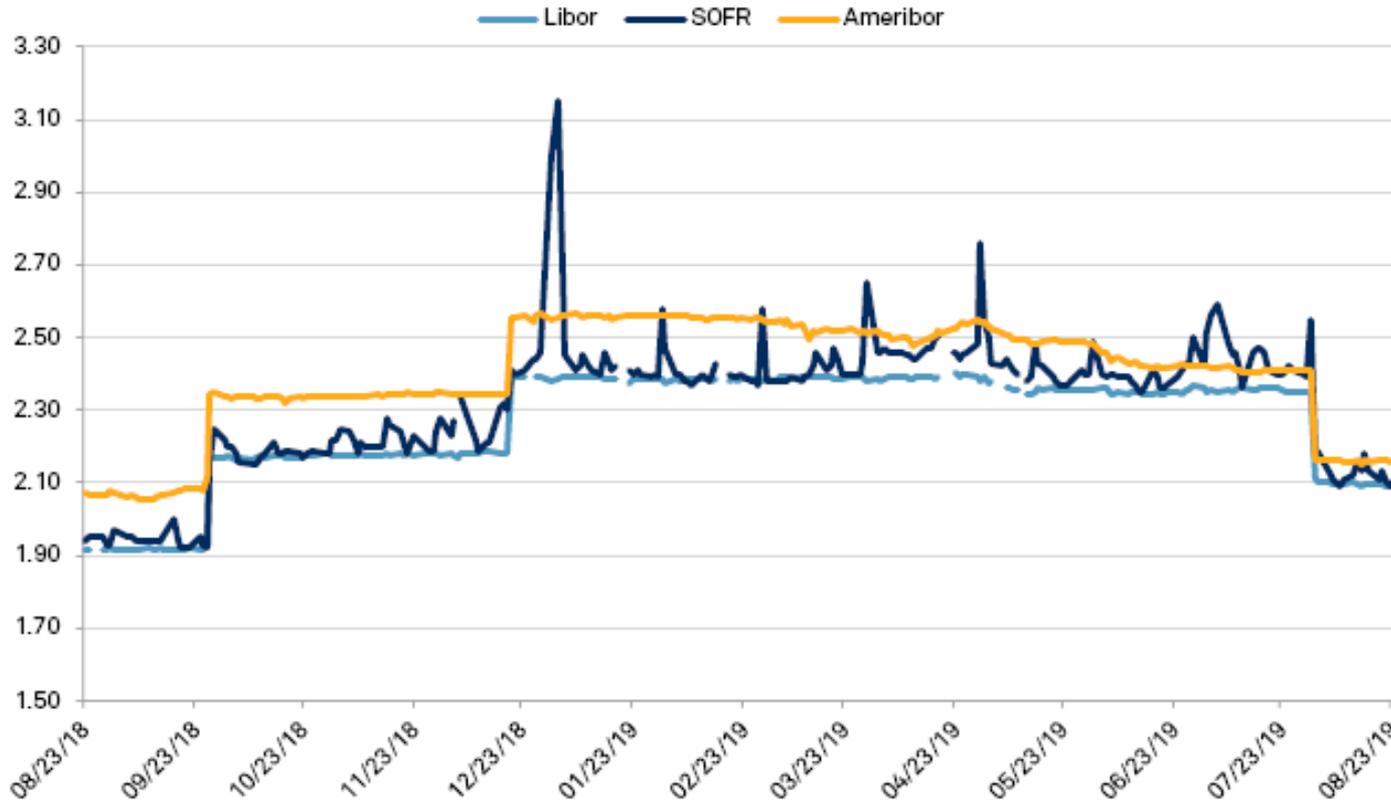
July 2016 - Current



Date	Overnight Rate	30 Day Avg	90 Day Avg
5/17/2020	0.13439	0.14735	0.53600



Overnight index rates over last year (%)



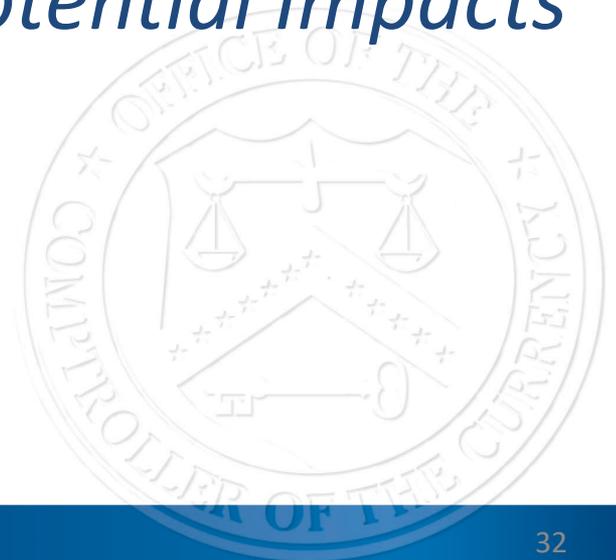
Data compiled Aug. 27, 2019.

Libor = London interbank offered rate; SOFR = secured overnight financing rate; Ameribor = American interbank offered rate

Data shown from Aug. 23, 2018, through Aug. 23, 2019, and includes only U.S. dollar rates.

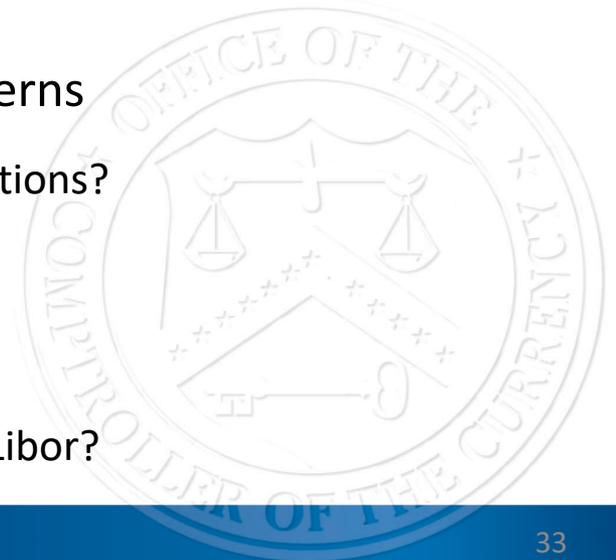
Libor Cessation

Potential Impacts

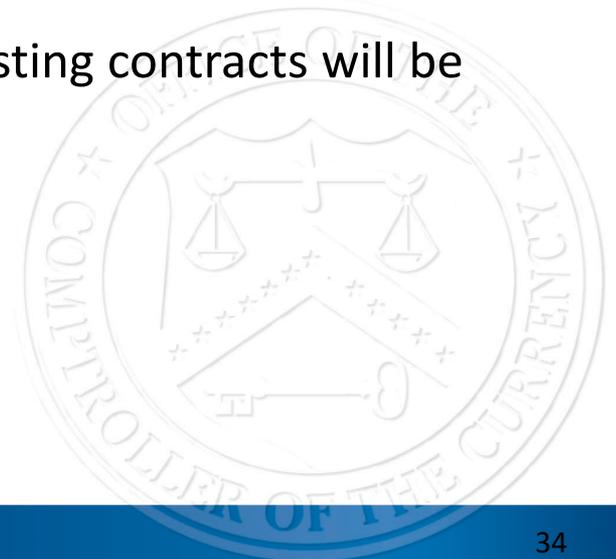
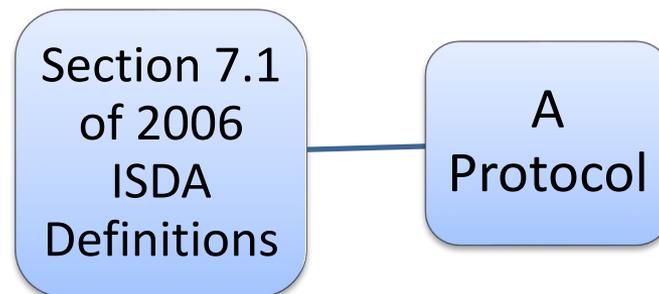


Primary issues related to Libor's cessation include:

- ❑ Contractual Fallback language (derivatives, loans and securities)
 - What are “fallbacks”? Why is a robust fallback needed?
 - What are in the contracts currently?
- ❑ System and Operational impacts
 - What about systems/operations impacts?
 - How are third-parties involved?
- ❑ Consumer Compliance and Reputation risk concerns
 - What are the implications of current consumer regulations?
 - Reg Z – how is it clearly conveyed to customers?
- ❑ Credit Spread
 - How do we account for the credit risk component in Libor?



- ❑ Existing derivative contracts are not sufficiently robust to handle permanent discontinuance of Libor
 - Contractual fallback language states that if Libor is not available, parties must solicit quotes from major London banks (essentially create their own LIBOR).
 - Originally contemplated for short period of unavailability
- ❑ International Swaps and Derivatives Association (ISDA) has established working groups to define and implement a fallback methodology if Libor ceases to exist.
- ❑ The fallback of new derivative contracts and existing contracts will be addressed by:



Legal Language for Cash Products Referencing Libor

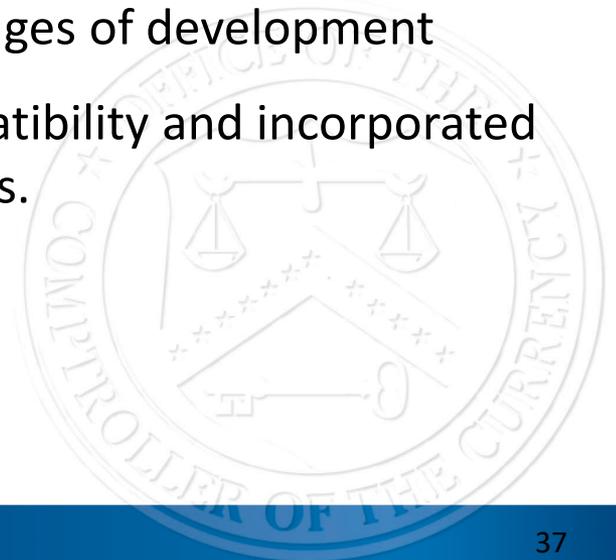
Product*	Typical Fallback Contract Language
Floating rate notes	Direct the calculation agent to first poll a sample of banks (similar to the ISDA fallback language) and then convert to fixed-rate at the last published value of LIBOR if quotes are not received.
Securitizations	<p>Agency mortgage-backed securities allow Fannie Mae and Freddie Mac to name a successor rate if LIBOR is permanently discontinued.</p> <p>Other securitizations would require a poll of banks and then convert to fixed-rate at the last published value of LIBOR if quotes are not received.</p>
Business loans	Appears to name the Prime Rate or the Effective Federal Funds Rate plus a spread as the fallback if LIBOR is discontinued.
Retail mortgages	Gives the noteholder the ultimate authority to name a successor rate if LIBOR was permanently discontinued, although it is unclear if the spread can be adjusted.
<i>*Most legacy contracts will mature before 2021, but new contracts are being written daily.</i>	
Other consumer products	May be more varied but thus far seem to have similar flexibility as retail mortgages.

Asset Management also has operational risk associated with fallback language.

- Trustees don't want the liability of making the decision on the reference rate change.
- Reference rate changes also present reputational risk through the heightened risk of litigation costs.
- Ginnie Mae announced updates to multiclass securities guide related to possible cessation of USD Libor. This announcement provided the following:
 - Guidance to the fallback language of their new multiclass securities issuance
 - Guidance concerning trustees with GNMA stepping in for securities issued after 3/1/2020

The ARRC published the results of their vendor survey on May 7, 2020. Key takeaways from the survey included:

- Overall, responding vendors described themselves as having good awareness of the Libor transition and noted that they have assessed the potential effects on their products and services.
- Almost all vendors said that they have a good understanding of the key enhancements needed.
- Vendors reported work on applications at all stages of development
- Most vendors have considered backward compatibility and incorporated transition work into upcoming release schedules.



Availability of services will be impacted if Libor ceases to be reported and there is no reference rate sufficiently addressed in contract fallback language.

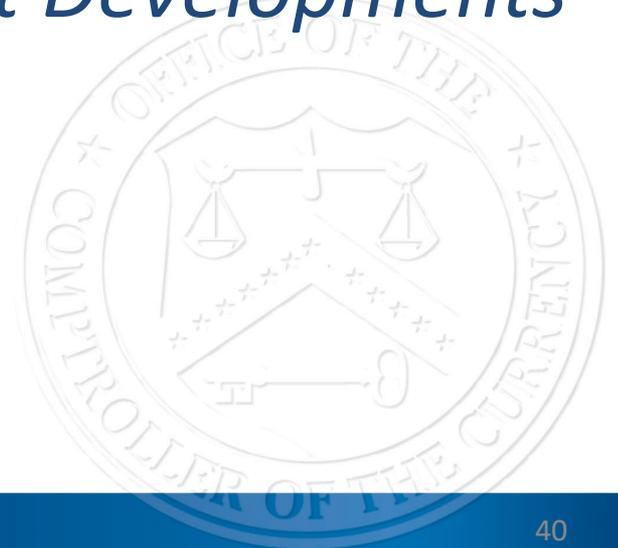
- ❑ Customers may be harmed if banks include in the fallback language a reference rate that increases costs to the customers.
 - Example: Reg Z and customer notification and replacement index selection requirements for adjustable rate loans that reference Libor.
- ❑ Potential for disrupted services and/or customer harm also represents reputation risk given the heightened risk for litigation costs.
- ❑ CFPB working on guidance for industry on regulatory requirements within its purview that are effected by the Libor transition.
 - Preparing an NPRM for regulatory changes and FAQs for existing requirements that will not change for the transition.

Bank earnings may be impacted from adjustments to the valuation of existing contracts depending on the selection of a new rate, spread adjustment, and other factors such as the discount rate.

- SOFR is a secured rate unlike Libor which has a credit risk component.
- Market participants have expressed the need for credit spread and question the lack of a credit spread in SOFR and how that would impact operations.
- Some participants have communicated preference for Ameribor, an unsecured rate.
- Several parties are implementing actions meant to help identify SOFR's missing credit spread
 - FRBNY establishing the Credit Spread Group to identify a potential spread adjustment to include with SOFR.

Libor Cessation

Recent Market Developments



Recent Market Developments – ARRC Recommended Fallback for Cash Products

Floating Rate Notes
Syndicated Business
Loans
Bilateral Loans
Securitizations
Mortgages
Student Loans

Trigger Event

Statement by ICE, the FCA, the Fed, or a bankruptcy administrator that publication of the rate has ceased or will cease permanently or indefinitely actually ends, if later than the announcement date;
FCA announcement that the rate is no longer representative

Benchmark Replacement Waterfall

1. Term SOFR + Adjustment
2. Compounded SOFR + Adjustment
3. Relevant Governmental Body* Selected Rate + Adjustment
4. ISDA Fallback Rate + Adjustment
5. Issuer or its Designee Selected Rate + Adjustment

Adjustment Waterfall

1. ARRC Selected Adjustment
2. ISDA Fallback Adjustment
3. Issuer or its Designee Selected Adjustment

Section 7.1 of 2006 ISDA Definitions

- ❑ Amended and restated floating rate options will generally include:
 - The existing price source information
 - A statement identifying the objective triggers for a ‘permanent cessation’ that would activate the selected fallbacks
 - A description of the fallback that would apply upon the occurrence of that trigger, which will be the adjusted RFR plus the spread adjustment
- ❑ ISDA will also publish a **Protocol** to facilitate inclusion of the amended definitions (i.e. the definitions with fallbacks) into existing derivative transactions that were entered into prior to publication of the relevant Supplement
 - Will apply to existing derivatives transactions that incorporate the 2006, the 2000, or the 1991 ISDA Definitions

Section
7.1 of
2006 ISDA
Definitions

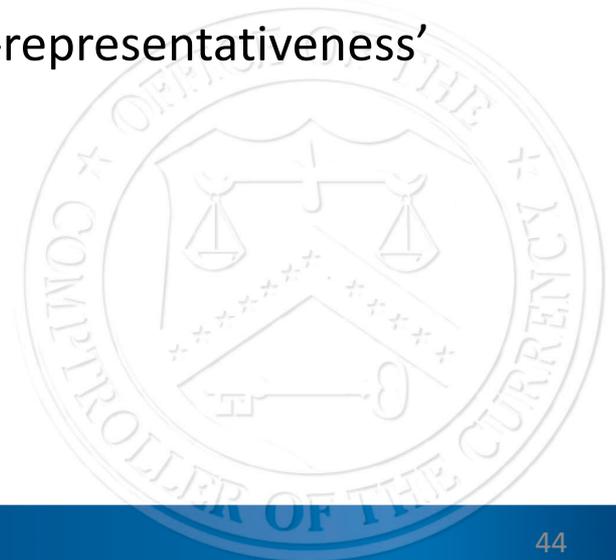
A
Protocol

Approaches to term and credit spread calculations

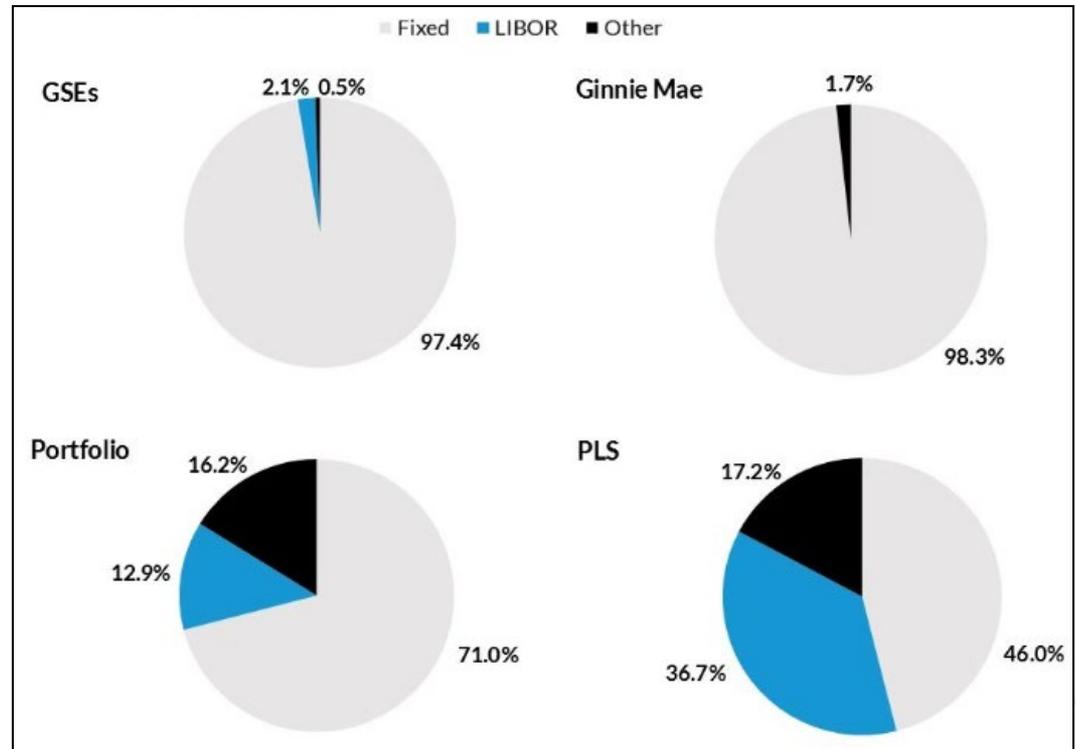
- ❑ **Compounded Setting in Arrears Rate:** relevant risk free rate (RFR) observed over relevant IBOR tenor & compounded daily during that period
 - Backward shift of approximately 2 banking days will apply
- ❑ **Five-Year Historical Median Approach** to the spread adjustment:
 - Based on the median spread between the IBOR in the relevant tenor and the adjusted RFR over each corresponding tenor (so the spread will differ across different IBOR tenors).
 - Calculated over the five-year period prior to the relevant announcement or publication triggering the fallback provisions (but will not take effect until fallback rates actually apply, if a later date).
 - Will remain constant upon trigger.
 - No transition period.

ISDA Announced the preliminary results of consultation on pre-cessation fallbacks for Libor.

- ❑ Initial results indicate a significant majority of respondents are in favor of **including both pre-cessation** and permanent cessation fallbacks as standard language in the amended 2006 ISDA Definitions for Libor.
- ❑ Respondents also in favor of a single protocol for including the updated definitions in legacy trades.
- ❑ The pre-cessation fallbacks are based on a ‘non-representativeness’ determination.



- ❑ Fannie and Freddie will adopt ARRC's recommended fallback in their new ARM products.
- ❑ According to LSTA, syndicated loans are facing operational challenges to accommodate compounded SOFR due to the difference in current market convention.



Operational Subgroup

- ❑ **May:** ARRC released the following documents:
 - Vendor Readiness Survey Results (more details on the next slide)
 - Best Practices for Vendors' Transition to SOFR.

Spread Adjustment

- ❑ **April:** ARRC announced recommendation for spread adjustment methodology.
- ❑ **May:** ARRC issued supplementary consultation on spread adjustment methodology.

Consumer Product WG

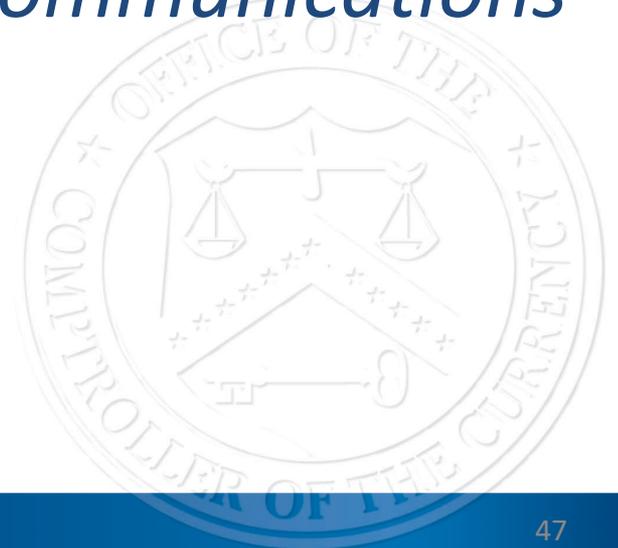
- ❑ **Feb:** FHFA announced that the GSEs will stop accepting LIBOR based ARMs by the end of 2020, and plan to begin accepting ARMs based on SOFR in 2020.
- ❑ **March:** Published Student loan fallback consultation.

Legal Update

- ❑ **March:** ARRC released USD Libor contract proposal for NY State Legislation

Libor Cessation

Supervisory Communications



- ❑ On March 16, 2020, **FHFA** extended the deadline for the FHLBanks to cease entering into Libor based instruments that mature after December 31, 2021.
 - Deadline extended to June 30, 2020 from its original date of March 31, 2020.
 - Extension does not cover investments and option embedded products.
- ❑ **CFPB** is working on providing guidance for industry on regulatory requirements within its purview that are effected by the Libor transition.
 - Preparing an NPRM for regulatory change and FAQs for existing requirements that will not be changing for the Libor transition.
- ❑ **Ginnie Mae** announced updates to multiclass securities guide related to possible USD Libor cessation. Announcement provided guidance regarding:
 - the fallback language of their new multiclass securities issuance
 - trustees with GNMA stepping in for securities issued after 3/1/2020

☐ Main Street Lending Facilities:

- Initially, loans to be SOFR based
- Banks highlighted using SOFR as the reference rate for the Main Street Lending program is a significant issue
- Loans now based on Libor + 3% rather than SOFR

☐ Other Fed programs using SOFR:

- TALF: CLO support, as currently proposed, will be priced at 150 bps over the 30-day average SOFR

Main Street Lending Program Loan Options	New Loans	Priority Loans	Expanded Loans
Term	4 years	4 years	4 years
Minimum Loan Size	\$500,000	\$500,000	\$10,000,000
Maximum Loan Size*	The lesser of \$25M or an amount that, when added to outstanding and undrawn available debt, does not exceed 4.0x adjusted 2019 EBITDA	The lesser of \$25M or an amount that, when added to outstanding and undrawn available debt, does not exceed 6.0x adjusted 2019 EBITDA	The lesser of \$200M, 35% of existing outstanding and undrawn available debt, or an amount that, when added to outstanding and undrawn available debt, does not exceed 6.0x adjusted 2019 EBITDA
Risk Retention	5%	15%	5%
Payment (year one deferred for all)	Years 2-4: 33.33% each year	Years 2-4: 15%, 15%, 70%	Years 2-4: 15%, 15%, 70%
Rate	LIBOR + 3%	LIBOR + 3%	LIBOR + 3%

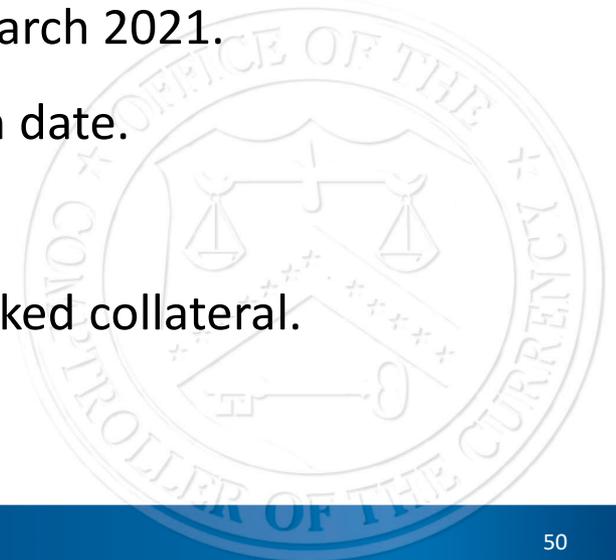


FCA & PRA

- ❑ After suspending reporting requirements and cancelling some meetings due to Covid-19, the FCA and the Prudential Regulation Authority announced they will “resume full supervisory engagement” on Libor transition from June 1.
- ❑ The FCA has extended some interim milestones
 - For example, a plan to end sterling Libor-linked lending at the end of September was pushed back six months to March 2021.
 - FCA is holding firm on the end-2021 cessation date.

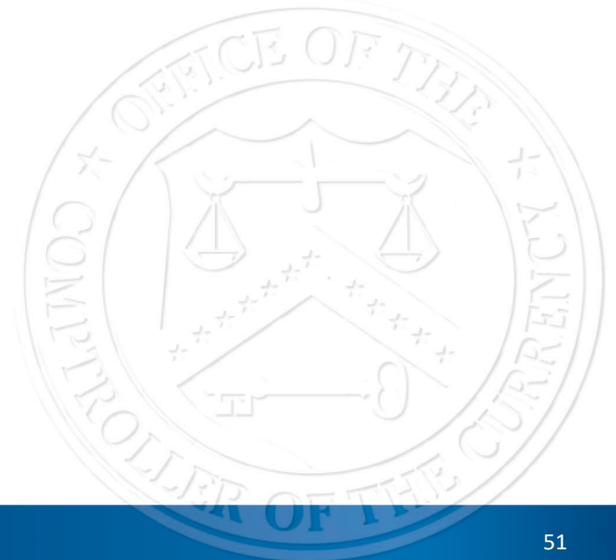
BOE

- ❑ BOE announced a haircut add-on to all LIBOR linked collateral.



- FSB-BCBS Libor Transition Questionnaire

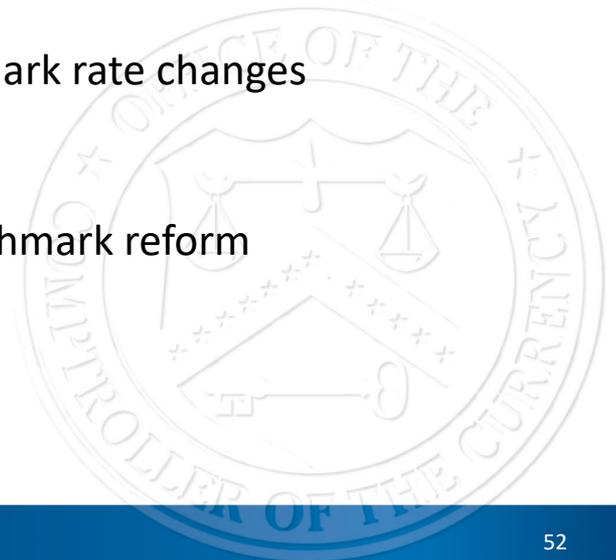
- Basel Framework frequently asked questions (May 2020)
 - Capital
 - Market Risk
 - Liquidity
 - Counterparty Credit Risk
 - Operational Risk



International Accounting Standards Board (IASB)

- ❑ The IASB proposes amendments to International Financial Reporting Standards (IFRS):
 - apply only temporarily, during the period of benchmark reform
 - relate only to changes which are a direct consequence of the reform and implemented on an economically equivalent basis.

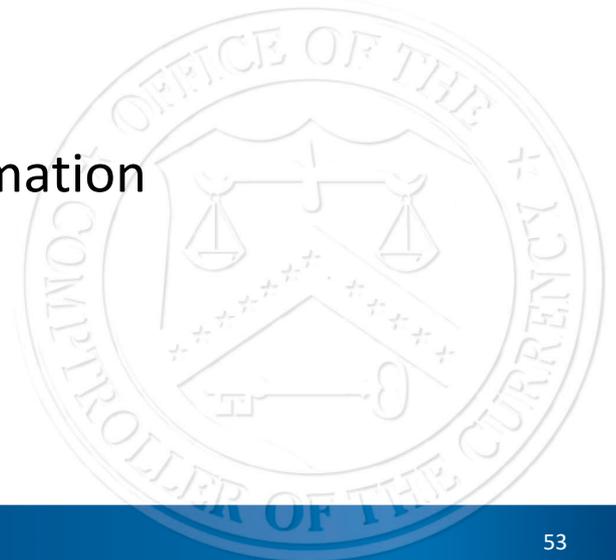
- ❑ Key amendments:
 - practical expedient to simplify accounting for benchmark rate changes
 - clarification on discontinued use of hedge accounting
 - disclosure of new risks arising from interest rate benchmark reform



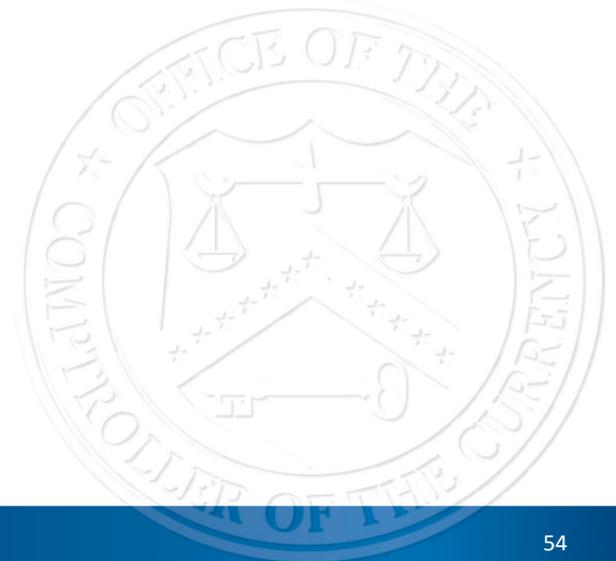
- ❑ OCC Bulletin 2017-43, “New, Modified, or Expanded Bank Products and Services: Risk Management Principles”
 - <https://www.occ.treas.gov/news-issuances/bulletins/2017/bulletin-2017-43.html>

- ❑ SARP – Fall 2018, Fall 2019 and current draft

- ❑ Data collection – examiners collecting information



Questions and Comments?



- ❑ Final report of IOSCO Principles for Financial Benchmarks was published in July 2013.
- ❑ ARRC was formed in November 2014 and ARRC selected SOFR in June 2017.
- ❑ In April 2018, NY Fed started publishing SOFR rate.
- ❑ In 2018, CME and LCH launched SOFR contracts (futures and swaps).
- ❑ In 2019-2020, ARRC recommended Fallback Language for various cash products.
- ❑ In September 2019, regional banks expressed the need for credit spread in letters to the regulators.
- ❑ October 8, 2019, IRS published a NPR to alleviate implications for re-indexing. Comment period closed on November 25, 2019. While the rules remain unfinalized, the IRS is attempting to remove re-indexing from being a taxable event.

- ❑ In February 2020, FHFA Announces Fannie Mae and Freddie Mac will cease acquisition of LIBOR ARMs before December 31, 2020.
- ❑ In March 2020, ARRC releases a Proposal for New York State Legislation for USD Libor.
- ❑ AARC Releases Responses to Vendor Readiness Issued January 31, 2020, Survey (May 7, 2020)
- ❑ In March 2020, FHFA extended the deadline for the FHLBanks to cease entering into LIBOR based instruments that mature after December 31, 2021 to June 30, 2020 from its original date of March 31, 2020.
- ❑ In May 2020, ISDA published results of its consultation on precessation triggers.

