Virginia Bankers Association

2021 Pathways to Connect & Protect

Long and Winding Road: LIBOR's Transition

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Agenda

- A Brief History of Time—LIBOR
- And the Winner Is…SOFR?
- LIBOR vs. SOFR
- Alternatives
- Key Considerations
- SOFR Risks
- Conclusion

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London Interbank Offered Rate (LIBOR): A Brief History

- Reference rate which large banks indicate that they can borrower short-term wholesale funds from one another on an unsecured basis in the interbank market

- Credited to Greek banker Minos Zombanakis in 1969
  - $80 million syndicated loan from Manufacturer's Hanover to Shah of Iran based on reported funding costs of a set of reference banks.

- 1986—British Bankers' Association (BBA) took over to formalize the data collection and governance process
  - LIBOR fixings were calculated for the U.S. dollar, British pound and Japanese Yen
  - 15 maturity terms were reported for each currency, ranging from overnight to a 1-year term

London Interbank Offered Rate (LIBOR): A Brief History (2)

October 2013—BBA administered LIBOR and published the rate each business day, but actual collection of responses and calculations were performed by Thomas Reuters

LIBOR serves 2 primary purposes:

As a reference rate: rate financial instruments can contract upon to establish terms of agreement

- Short-term floating rate financial contracts like swaps and futures, as well as variable rate loans (ARMs) and private student loans

As a benchmark rate, reflects relative performance measure (usually for investment returns or funding costs)

- An indicator of health of financial markets

London Interbank Offered Rate (LIBOR): A Brief History (3)

Why was this a widely used marker?

Represented terms at which world's largest and most financially sound banks were able to obtain funding on a short-term basis

Served as a lower bound for the borrowing rate of other less creditworthy institutions and individuals

Typically expressed: LIBOR + x

"x" is the premium charged in basis points for each particular borrower on top of the LIBOR rate of the corresponding maturity term

Why is that important?

Banks could extend variable rate loans that guaranteed a positive net interest margin by ensuring interest rates they charge are tied to their cost of funds with a positive premium built in

London Interbank Offered Rate (LIBOR): A Brief History (4)

So, what made reference rates popular with unsecured term interbank borrowing rates?

- Became an industry standard because of early adoption by market participants
- Allowed for easier standardization of financial contracts
- Reduced complexity of terms with floating rates

LIBOR = overnight risk-free rate over the term + term premium + bank term credit risk + term liquidity risk + term risk premium

London Interbank Offered Rate (LIBOR): Financial Crisis

Pre 2007, LIBOR moved closely with other short-term interest rates (think Treasury yields and OIS rate)

August 2007—began to display greater volatility with onset of financial crisis

Rising spreads meant liquidity and credit concerns

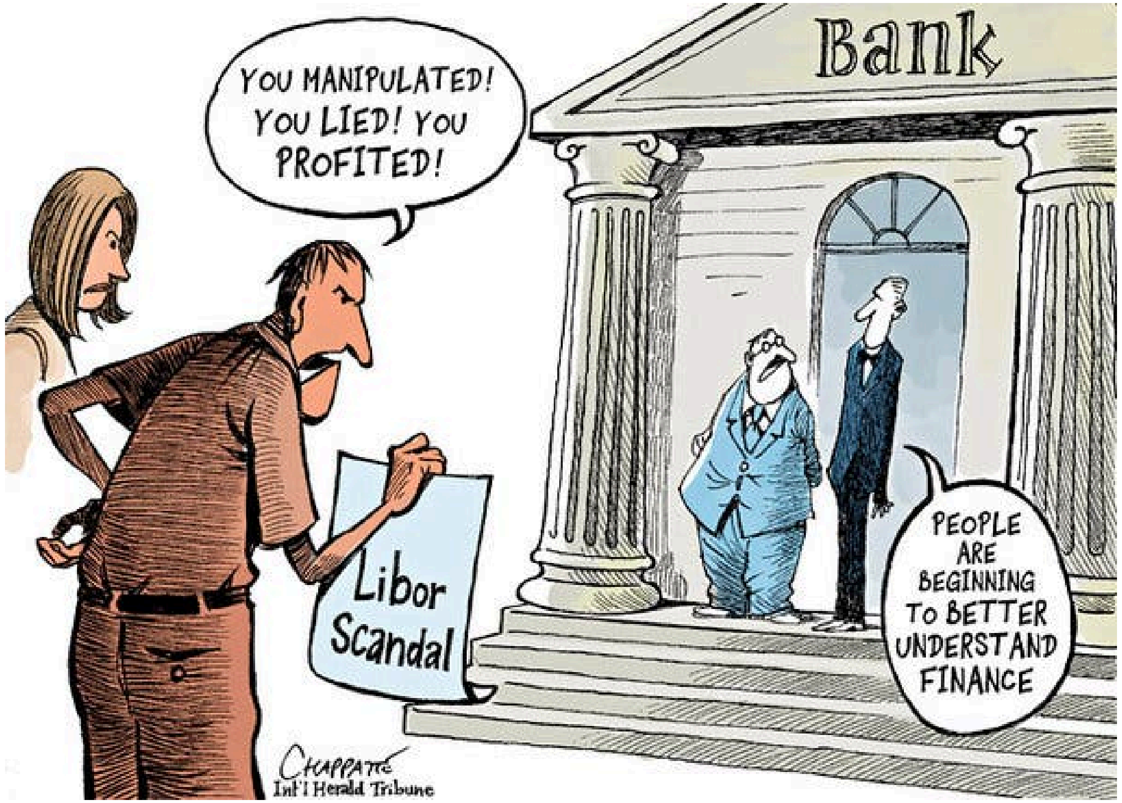
Banks were unwilling to tie up funds for long periods of time due to balance sheet uncertainty (liquidity risk)

Fear of funding instability drove banks to demand more long-term funding for liquidity purposes

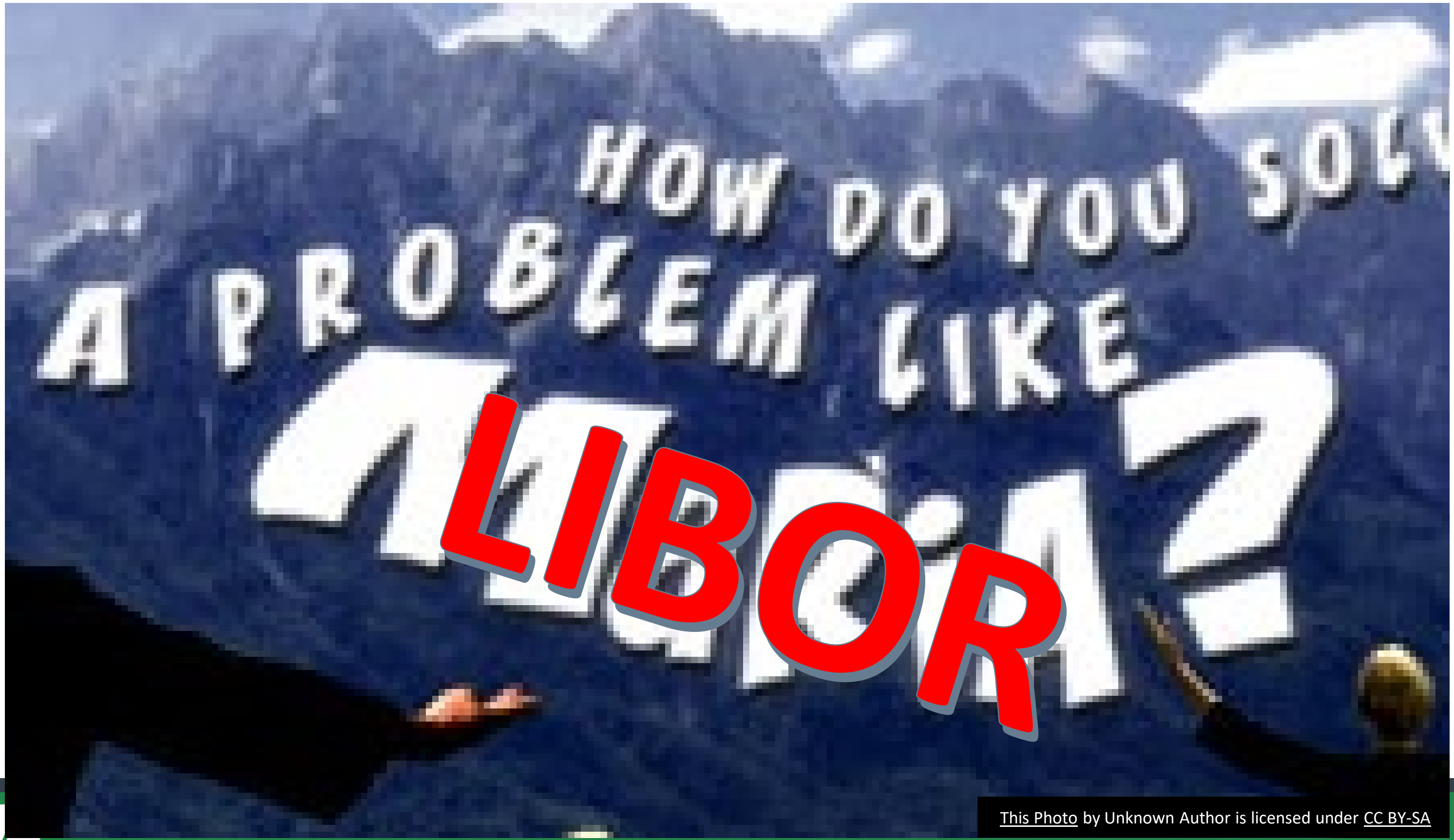
Demand on a shrinking supply of interbank funds with perception of increased credit risk from subprime sectors drove up LIBOR rates

LIBOR Scandal

- June 2012—controversy over individual panel bank submissions during height of financial crisis
  - Banks purposefully underreported borrowing costs by significant amounts to project financial strength amidst market instability
  - Bank manipulated rate to realize gains on LIBOR-based contracts
  - Rate tampering demonstrated in movements of Credit Default Swap (CDS) prices
  - Biggest named offenders: Barclays, UBS, RBS and Rabobank



How do you Solve a Problem like LIBOR?



- Reference rate reform spearheaded by the Financial Stability Board (FSB)
- Scandal brought reexamination of general structure of reference rates
- Recession brought decline to interbank activity and shift to reliance on secured funding
- Dodd-Frank brought central clearing of derivatives

Reform, Repair or Replace?

LIBOR Cessation

- **March 5, 2021**—ICE Benchmark Administration (IBA) set end date for new use of USD LIBOR
  - FRB, OCC and FDIC also issued supervisory guidance to same effect
- **IBA will cease publication of:**
  - Overnight and 1-, 3-, 6- and 12-months USD LIBOR immediately following LIBOR publication on **Friday, June 30, 2023,** and
  - All other LIBOR settings, including 1-week and 2-months USD LIBOR settings immediately following LIBOR publication on **Friday, December 31, 2021**
- International Swaps and Derivatives Association (ISDA)— **"Index Cessation Event"**
- Alternative Reference Rate Committee (ARRC)— **"Benchmark Transition Event"**

And the Winner Is…SOFR?

ARRC formally recommends Term SOFR, CME Group's forward-looking Secured Overnight Financing Rate term rates—July 29, 2021

What is SOFR?

Broad measure of the cost of borrowing cash overnight collateralized by Treasury securities

- "Overnight Financing"—references how SOFR sets rates for lenders based on rates that large financial institutions pay each other for overnight loans
- Considers actual lending transactions between institutions

Treasury bond repurchase agreements (repos)—allow banks to make overnight loans to meet liquidity and reserve requirements, using Treasurys as collateral

- Comprises weighted averages of the rates charged in these repo transactions

Includes all trades in the Board General Collateral Rate plus bilateral Treasury repurchase agreement (repo) transactions cleared through the Delivery-versus-Payment (DVP) service offered by the Fixed Income Clearing Corporation (FICC)

- Filtered to remove a portion of transactions considered "specials"—repos for specific-issue collateral, which take place at cash-lending rates below those for general collateral repos

LIBOR vs. SOFR

LIBOR

- Relies on quotes from reporting banks that are not necessarily from actual financial transactions
- Forward-looking
- Unsecured—includes a credit risk premium

SOFR

- Based on completed financial transactions
- Backward-looking—banks know what the borrowing rate is at the beginning of the period
  - Borrower will not know what they owe until the end of the loan
- Secured rate based on transactions that involve collateral (in form of Treasuries) so little to no credit risk premium put into rates
  - Expect some rates to add a credit spread to make it reflect the need for pricing in adjustable-rate products
  - Likely lower than LIBOR

Alternatives to LIBOR

SOFR is not the only new kid on the block

Other Alternatives	Description
Sterling Overnight Index Average (SONIA)	In U.K., administered by Bank of England and reflects the average rates for overnight UK Pound-denominated loans among banks and financial institutions
Federal Funds Overnight Index	What U.S. banks pay each other for unsecured loans from their reserves held at the Federal Reserve
Ameribor	Created by American Financial Exchange (AFX) and is an index based on unsecured borrowing costs of small and medium-sized banks across U.S. (Blockchain and created using a credit-weighted average of unsecured loans involved)
U.S. Prime Rate	Has been used as a benchmark for credit card, HELOCs and other APRs and is based in part on federal funds rate

Next Steps for Financial Institutions

ARRC's and NY Fed's Paced Transition Plan—includes specific steps and timelines to encourage adoption of SOFR

Transition to SOFR or an equivalent is necessary because of the potential disruption or cessation of LIBOR posing financial stability risk as well as risk to the individual firms with LIBOR exposure

ARRC recommended Best Practices for transition

Next Steps: Key Considerations

- New USD LIBOR cash products should include ARRC-recommended or substantially similar fallback language as soon as possible
- Third-party technology and operations vendors relevant to the transition should complete all necessary enhancements to support SOFR by the end of this year
- New use of USD LIBOR should stop, with timing depending on specific circumstances in each cash product market
- For contracts specifying that a party will select a replacement rate at their discretion following a LIBOR transition event, the determining party should disclose their planned selection to relevant parties at least six months prior to the date that a replacement rate would become effective

Next Steps: Key Considerations (2)

Institutions must be taking active steps to meet the timelines set out in the recommended transition milestones

Institutions need a clear internal program in place to prepare for transition away from USD LIBOR, including a rigorous assessment of exposures

- Refer to ARRC's Practical Implementation Checklist for SOFR Adoption

Institutions should be aware of additional ARRC recommendations and should incorporate additional ARRC recommended conventions into new contracts

Requires dialogue with key stakeholders to promote awareness of the transition and your preparedness for it

Next Steps: Key Considerations (3)

Key Questions to Consider for Existing Contracts

- Do you or your customers have exposure to any material contracts extending past 2021 that reference LIBOR?
- If yes, what effect will the discontinuation of LIBOR have on the operation of the contract?
- What actions can you take to mitigate risk (i.e.- proactively renegotiate with counterparties to address contractual uncertainties)?
- What alternative reference rate will replace LIBOR in existing contracts?
- To the extent derivative contracts used to hedge floating-rate investments reference LIBOR, what effect will its discontinuation have on hedging strategies?
- Does the use of an alternative (e.g.-SOFR) introduce new risks that need to be addressed?

Next Steps: Key Considerations (4)

Key Questions to Consider for New Contracts

- Have you considered referencing an alternative rate to LIBOR (e.g.-SOFR) in new contracts?
- Have you considered including fallback language regarding the reference rate to be used if, or when, LIBOR becomes unavailable?
- Review ARRC recommended fallback language for new issuances of floating rate notes, syndicated loans, bilateral business loans and securitizations
- Identify, evaluate and mitigate other potential consequences associated with LIBOR's cessation that can adversely affect your business (i.e.—ensure IT systems are able to incorporate new instruments and rates with features other than LIBOR)

Required Discussions

All need timely, comprehensive and accurate disclosure of risks and events that a reasonable investor would consider important to an investment decision (material!)

- Risk Factor Identification
- Risk Mitigation
- Management’s discussion and analysis
- Board risk oversight
- Financial statement requirements
- Information used by management and Board in assessing and monitoring how transitioning from LIBOR to alternative reference rate may affect the company

Limitations of SOFR

Only an Overnight Rate—LIBOR came in different maturities, from overnight rate ("spot rate") out to maturities of one year

- SOFR is based only the most recent data on Treasury repos (so it's a "spot rate")
- Longer term loans need to extrapolate out SOFR to longer maturities—daily compounding rate?

More volatile than LIBOR—thought that using real trades rather than bank forecasts makes SOFR less stable than LIBOR

- Could add uncertainty or risk on common trades or contracts based on risk aversion from getting a higher daily rate
- Will be affected by market activity with more activity-based fluctuations

Risks of SOFR

- Joint Statement on risks for market participants related to upcoming transition away from LIBOR
- Because SOFR is a secured lending rate that does not incorporate credit risk, market participants will need to apply a spread to it to reflect the credit risk difference
  - Although ARRC issues a market consultations—uncertainty remains
- SOFR lacks a forwarding-looking rate equivalent
- Unknown if SOFR will be widely accepted despite backing
- Shifting to an arrears calculation after knowing rates in advance requires development of new system requirements, operational processes, training and business process reengineering
- Is a "one size fits all" benchmark rate really fitting all financial institutions?

Questions?

Thank you for your participation!
We hope you found today's presentation valuable.

If you have any additional questions,
please contact Compliance Alliance.

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