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
Summer SOFR Series – Approaching the Transition

- David Bowman, Senior Advisor at the Board of Governors of the Federal Reserve
- Tom Deas, Chairman, National Association of Corporate Treasurers
- Roy Choudhury, Managing Director and Partner, Boston Consulting Group
- Jack Hattem, Managing Director, BlackRock
- Gary Horbacz, Principal, Structured Products Team, PGIM
- Susan Hughes, SVP LIBOR Transition Office, Wells Fargo
- Ben Kaufman, Research & Policy Analyst, Student Borrower Protection Center
- Adam Schneider, Partner, Head of LIBOR Platform, Retail and Digital Banking, Oliver Wyman
- Alexey Surkov, Partner, LIBOR Transition Services Co-Leader, Deloitte & Touche LLP
8 Key Recommendations for End Users

1. Identify and assess the impact of **LIBOR exposures** (on and off-balance sheet) including but not limited to, floating rate notes, loans, investments, & derivatives.

2. Review legacy contracts to understand mutual **rights, obligations, and roles** of different parties (borrower, lender, administrative and calculation agent) and fallback language (trigger, fallback rate, spread) in the event of LIBOR cessation.

3. Assess the impact of LIBOR transition on **valuation, accounting, tax, financial disclosures and hedging strategy**, and need for actions to mitigate the impact.

4. Engage with **financial services providers** to proactively discuss transition strategy for legacy LIBOR transactions and when SOFR-based products will be available.

5. Be prepared for outreach from financial services providers and mobilize internal or external legal counsel to address **amendments or transition of legacy contracts** (including, adherence to ISDA protocol) with weak fallback language.

6. Understand the **key differences between LIBOR and SOFR** (term vs. overnight; unsecured vs. secured; and benchmark administrator) and how SOFR is likely to behave differently through an economic cycle.

7. Review the guidance on **SOFR-usage and conventions** for interest calculation for SOFR-based contracts and assess impact on cash flows and operational readiness.

8. Engage with external data and systems providers to ensure operational readiness to transition away from LIBOR to SOFR.
External Systems Working Group mobilized to coordinate infrastructure readiness across financial market participants and external vendors.

Co-ordinated a survey of systems providers to assess state of readiness:
- Vendors have a good understanding of LIBOR Transition and its impact on their products and offerings; and
- Vendors reporting Work on required changes are in different stages of development - significant progress expected in 2020.
- Some vendors highlighted dependencies on the ARRC and financial market participants (e.g. product conventions)

Conducted a number of deep-dive workshops focused on Securitization, Floating Rate Notes, Buy-side, and Consumer Products.

Additional workshop planned for non-financial corporates.
ARRC Operations & Infrastructure Working Group
Internal Systems and Processes

• ARRC’s Internal Systems & Processes Sub-Working Group focuses on internal transition readiness across key systems, processes, modes, data, policies, and procedures. It includes over 100 members representing regulators, banks, insurance firms, investment managers, exchanges, consulting and advisory firms, and other stakeholders.

• The group developed ARRC Internal Systems and Processes: Transition Aid for SOFR Adoption
  - Covers transition activities across 10 categories and 50 selected sub-categories
  - Transition steps and activities for market participants to consider
  - Upstream and downstream systems and processes that may be affected
  - Dependencies that may influence the timing and sequence of transition activities

• Group’s current and future focus areas include the following topics:
  - Are your internal system updates on track? - internal system readiness checklist
  - Are you ready for vendor system changes? - post-vendor internal readiness guidelines
  - Keeping up with the ARRC? - commentary on how other ARRC recommendations may affect internal systems & processes and related transition workstreams

• To join the sub-group or learn more, please contact ARRC Secretariat at arrc@ny.frb.org
To the extent not already utilized, 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 2020.

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 6 months prior to the date that a replacement rate would become effective.

Additional recommendations around transitions timelines and internal programs will be elaborated in the following 2 slides.

The ARRC has recently released their recommendations on the best practices for completing the transition from LIBOR.
The ARRC has Set Target Dates for Ending New LIBOR Issuance

### Estimated USD LIBOR Market Footprint by Asset Class

<table>
<thead>
<tr>
<th>Over-the-Counter Derivatives</th>
<th>Volume (Trillions USD)</th>
<th>ARRC Target Date to End New LIBOR Issuance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate swaps</td>
<td>81</td>
<td>June 2021</td>
</tr>
<tr>
<td>Forward rate agreements</td>
<td>34</td>
<td>June 2021</td>
</tr>
<tr>
<td>Interest rate options</td>
<td>12</td>
<td>June 2021</td>
</tr>
<tr>
<td>Cross currency swaps</td>
<td>18</td>
<td>June 2021</td>
</tr>
<tr>
<td>Exchange Traded Derivatives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest rate options</td>
<td>34</td>
<td>June 2021</td>
</tr>
<tr>
<td>Interest rate futures</td>
<td>11</td>
<td>June 2021</td>
</tr>
<tr>
<td>Business Loans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syndicated loans</td>
<td>1.5</td>
<td>June 2021</td>
</tr>
<tr>
<td>Nonsyndicated business loans</td>
<td>0.8</td>
<td>June 2021</td>
</tr>
<tr>
<td>Nonsyndicated CRE/Commercial mortgages</td>
<td>1.1</td>
<td>June 2021</td>
</tr>
<tr>
<td>Consumer Loans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail mortgages</td>
<td>1.2</td>
<td>Sept 2020</td>
</tr>
<tr>
<td>Other Consumer loans</td>
<td>0.1</td>
<td>---</td>
</tr>
<tr>
<td>Bonds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floating/Variable Rate Notes</td>
<td>1.8</td>
<td>Dec 2020</td>
</tr>
<tr>
<td>Securitizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortgage -backed Securities (incl. CMOs)</td>
<td>1.0</td>
<td>June 2021</td>
</tr>
<tr>
<td>Collateralized loan obligations</td>
<td>0.4</td>
<td>Sept 2021</td>
</tr>
<tr>
<td>Asset-backed securities</td>
<td>0.2</td>
<td>June 2021</td>
</tr>
<tr>
<td>Collateralized debt obligations</td>
<td>0.2</td>
<td>June 2021</td>
</tr>
</tbody>
</table>

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; ARRC recommends no new LIBOR ARM applications after Sept 31, 2020.
## Program Organization and Management
- LIBOR Transition Office (LTO) organized and resourced
- Business and function workstreams mobilized with whom is on point well defined
- Watching US legislation to see if program needs will change

## Workstream Mobilization
- Exposure assessments produced regularly (quarterly/monthly)
- Workplans and organization for each workstream in place

## Back Book Remediation
- Contract review and fallback inventory well underway or complete
- Client renegotiation plans developed
- CCP move to SOFR discounting implementation in process

## De-risking LIBOR Issuances
- Plan to end LIBOR issuances on best practice timelines
- New issuances have easy-to-implement fallback language
- Operational risk, client transition risk, conduct risk understood and managed

## ARR Product Pricing
- New products under development including building a deep understanding of pricing
- Technical build-out on track for early 2021

## Operations & Technology
- Comprehensive view of impacts and required capabilities
- Complete plan developed; updates underway; begun implementing priority systems

## Models and Tools
- Impacted models identified and redevelopment scheduled in 2021 (CCAR 12/31/20)

## Managing Financials
- Scenarios defined, financial assessments for fallbacks / new products in development
- Ready to evaluate implications on funding, hedging, FTP, and stress tests
LIBOR Exposures ($200 Trillion) – Most Sources of Exposure are Important for Corporates

- Loans, $8.3 Trillion
- OTC IR Swaps, $81 Trillion
- OTC FRAs, $34 Trillion
- Exchange Traded IR Options, $34 Billion
- Exchange Traded IR Forwards, $11 Billion
- OTC Currency Swaps, $18 Billion
- OTC IR Options, $12 Billion

Source – ARRC Second Report
March 2018
Corporate Uses of LIBOR

• Financial Transactions with Banks and other Financial Institution Counterparties
  • Revolving Credit Lines (including CP back-up lines; also multi-currency lines in USD, EUR, GBP)
  • Term Loans / FRNs / Asset Securitizations
  • Derivatives

• Transactions with Affiliates within the Corporate Group and for External Reporting
  • Inter-affiliate / intra-group loans (used for daily cash concentration)
  • Employee Benefit Payments (to adjust for payment delays)
  • Accounting (FV Calcs, Lease Valuations, Capitalization of Interest, Derivatives)

• Commercial Transactions with Non-financial Counterparties: Suppliers & Customers
  • Asset Purchase and Sale Agreements (Adjustment for changing closing date, earnout calculations)
  • Supply Agreements (Adjustments for volume variances, late payments)
  • Long-term Capital Goods Purchases (Milestone timing adjustments)
Specific Transition Management Recommendations for Corporate Treasurers

• **Amend Existing Financial Transactions with SOFR Fallback Provisions**
  • Corporate Treasury needs to work with its bank group and derivative counterparties to amend existing transactions to include fallback language and prepare for SOFR-based new transactions after June 30, 2021.

• **Amend Existing Intercompany Transactions and Internal Accounting Procedures for SOFR**
  • Update inter-company loans and derivative transactions to SOFR, and obtain required approvals, especially for foreign subsidiaries:
    • Foreign Exchange Control Authorities (SAFE, etc.)
    • Central Banks (Banco Central do Brasil, etc.)
  • Prepare SOFR-based Sarbanes-Oxley compliant reviews of valuations and fair-value calculations for financial statements

• **Put Together a Cross-Functional Team (Treasury, Legal, Procurement, Sales Admin, etc.)**
  • Identify and amend commercial transactions with suppliers and customers
Corporate Concerns about Taxes, Regulations, and Accounting during the Transition

• In managing the transition from LIBOR to SOFR, contracts will have to be amended so as not to trip issues such as:
  • Changing an agreed interest rate in a loan greater than a *de minimis* amount can trigger federal income tax recognition as the old LIBOR-based loan is deemed to have been redeemed and replaced with a new SOFR loan. (See IRC §1001)
  • Non-financial end-users can elect not to margin and centrally clear their derivatives positions if they are hedging an underlying commercial risk. If an interest rate swap is amended out of sequence with the underlying loan, the end-user exception may no longer apply.
  • End-users may also link a derivative with an underlying exposure to obtain hedge accounting treatment, deferring income recognition on the hedge to integrate it with the income treatment on the underlying exposure.

• The ARRC has highlighted these and similar transition issues to the relevant government and accounting organizations and obtained safe-harbors.
Credit Agreement Considerations

• Credit agreement pricing grids are based on LIBOR plus a ratings-based credit spread
• Same IBOR spread now in multi-currency agreements for USD, EUR, GBP
• LIBOR includes an inter-bank lending spread while SOFR and the other IBOR replacements (such as ESTER for euro or SONIA for sterling) are secured or unsecured risk-free overnight rates
• LIBOR spreads have exhibited volatility
• The typical corporate borrower with no SOFR securities issued has no current market check on what its SOFR spread should be, making repricing its credit agreements to SOFR challenging
• Negotiating an appropriate credit spread adjustment across multiple currencies and maturities will be a challenge
• We could also use Simple Daily SOFR in Arrears with a negotiated spread adjustment much like we now use Prime for same-day Base Rate Borrowings in syndicated credit agreements.
Potential Competitive Pricing Solution to Determine Corporate SOFR Credit Spreads

• Credit agreements in the 1980s and 90s often had a competitive bid pricing option:
  • Borrowers could request competitive bids from existing members of their revolving credit bank group, but banks’ participation in any bidding was optional on their part
  • Borrowers requested terms of either 1, 2, 3, or 6 months
  • Banks bid amounts at a spread over LIBOR
  • Borrowers accepted bids from lowest to highest with the total amount accepted the borrower’s choice

• SOFR spreads could be determined by reincorporating this process into new corporate credit agreements.
## Consumer Products Transition Process

### Are you a stakeholder?

**Understand your role in the transition process**
- Many stakeholders will be actively involved in the transition process.
- Some stakeholders, such as Borrowers or Asset-Backed Securities (ABS) Investors, will not have to undertake any activities to effect the transition; nonetheless, they should be aware of its impact.

**Be Prepared**
- Do not underestimate the importance of and time needed for careful and diligent planning.
- Know your contracts, your exposure, and your risks.
- Be informed and be ready to engage with other stakeholders.
- Be prepared to execute the transition on time.

\[ \text{Target Date} \ 12/31/2021 \]

### Impacted Stakeholders

- Borrowers (the "Consumer")
- Note Holders (the owners of the consumer loans)
- Loan Servicers
- Vendors
- ABS Issuers
- ABS Certificate Administrators
- ABS Trustees
- Investors in ABS

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Resources and Tools to Prepare for the Transition Process

The ARRC Consumer Products Working Group has collaborated to develop **LIBOR ARM and Student Loan Transition Resource Guides** *(coming soon)* that outline, among other things, voluntary steps impacted stakeholders may consider in preparing for the transition:

- Creating an Inventory of LIBOR Product Exposure
- Reviewing Contracts
- Developing a Transition Plan
- Managing Transition Activities
- Choosing a Replacement Index
- Managing Communications

These Resource Guides are consistent with other ARRC published materials that support transition planning and execution, including:

- [ARRC Buy-Side/Asset Owner Checklist](#)
- [ARRC Internal Systems and Processes: Transition Aid for SOFR Adoption](#)
General Consumer Product Transition Timeline
Key milestones and suggested readiness timeframes to support LIBOR transition

This timeline highlights some key industry milestones (announced or anticipated) and offers suggested timeframes for engaging in certain activities related to LIBOR transition; however, stakeholders may choose to complete their transition activities outside of the suggested windows of time based upon their firm’s unique analysis, decisions and contractual terms.
Consumer products and the transition

Background: student loan exposure

- **$80 billion** in variable-rate private student loans (PSL) referencing LIBOR\(^1\)

- **3.3 million** borrowers impacted\(^2\)

- Even before COVID, student loans delinquency rates exceeded mortgage delinquency rates at the peak of the housing crisis\(^3\)

- An interest rate increase of as little as **0.5%** could cause private student loan default rates to double in certain borrower segments\(^4\)

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Student loan borrowers are at risk

“If the 3-month LIBOR Index is no longer available, we will substitute an index that is comparable, in our sole opinion, and we may adjust the Margin so that the resulting variable interest rate is consistent with the variable interest rate described in this paragraph.”¹

+ **Mandatory arbitration/class-action waivers**²

+ Well-documented history of borrowers being denied access to promised alternative repayment options when loans become unaffordable³

+ Extreme market opacity

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The path forward
Despite activity from the ARRC, much of industry has substantial work ahead.

Where we are

Some “[i]ndustry participants have failed to answer such basic questions as what index they will adopt to replace LIBOR, when they will transition to it, and how they will ensure that borrowers remain protected and informed throughout the process.”

Where we need to be

“[T]he choice of the replacement benchmark, spread adjustment to the replacement benchmark, succession timing, and mechanics should be easily comprehensible in order to be effectively communicated to stakeholders in advance of the transition away from LIBOR, and should seek to minimize expected value transfer based on observable, objective rules determined in advance.”


Principles for the transition

• Stop lending in LIBOR
• Clear, early consumer communications
• Transition to spread-adjusted SOFR
• Minimize value transfer throughout
• Protect borrowers
The transition from LIBOR to SOFR is one that borrowers of consumer financial products neither caused nor requested. These borrowers do not engage in wholesale unsecured interbank term lending in London. They do not currently have teams analyzing whether SOFR may expose them to basis risk. And most importantly, they did not manipulate LIBOR to boost profits on derivatives trades. Yet, it is exactly these borrowers who may be punished because some of the largest financial institutions in the world did.”

“We believe that spread-adjusted SOFR, as determined using the ARRC’s proposed methodology, is the best replacement for LIBOR for cash products.”

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