LIBOR Transition: From Sprint to Marathon*

But keep that 5:00 pace going…

Speakers
Meredith Coffey, LSTA – *Moderator*
Jason Granet, Goldman Sachs
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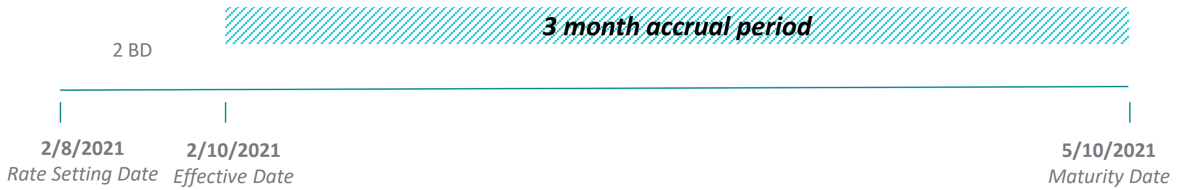
Tom Wipf, Morgan Stanley, ARRC Chairperson

Topics

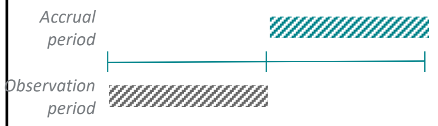
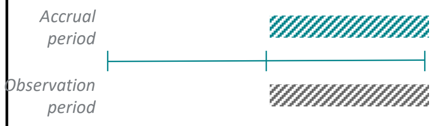
- Brief Recap of SOFRs…and Why You Shouldn’t Assume Term SOFR is an Option
- LIBOR Cessation Timelines: What We Know Will Happen…and When
- How LIBOR Transition May Play Out for Syndicated Loans and CLOs
- Basis Risk: What You Should (and Shouldn’t) Care About

Level Setting: LIBOR vs SOFR Methodologies

- USD LIBOR is a forward-looking term rate that is published in 7 tenors (overnight, 1 week and 1, 2, 3, 6 and 12 months)
  - LIBOR is published by ICE Benchmark Administrator. The rate used is published 2 business days prior to its effective date. Below is an example accrual period showing 3m USD LIBOR with effective date 2/10/2021:



- SOFR is an overnight rate published each day by the New York Fed. Financial products generally use an *average* of SOFR (not a single day's rate), though the methodology by which that average is calculated and applied may differ. The US loan market has not come to a consensus around which SOFR is most appropriate, though primary options are the following:

	Methodology	Description	Diagram	Pros	Cons	Current Use Cases
1	**SOFR Compounded in Advance**	Previous period's average of daily SOFR rates is used to accrue interest in the current period		• Rate known at beginning of period • Robust rate based on ~$1Tn daily repo transactions	• Not reflective of current interest rate environment	• Adjustable rate mortgages
2	**SOFR Compounded or Simple in Arrears**	Current period's daily SOFR rates are used to accrue interest in the current period		• Reflective of current interest rate environment • Robust rate based on ~$1Tn daily repo transactions	• Rate not known until end of period	• Floating rate notes • Interest rate derivatives
3	**Forward Looking Term SOFR**	Forward looking rate based on SOFR futures market, set in advance and accruing during the current period		• Rate set in advance, similar to LIBOR • Reflective of forward expectations of interest rates	• Does not currently exist • Based on SOFR futures contracts, unlikely to be as robust as SOFR itself	• N/A (rate does not yet exist)

Key LIBOR Cessation Dates & Actions

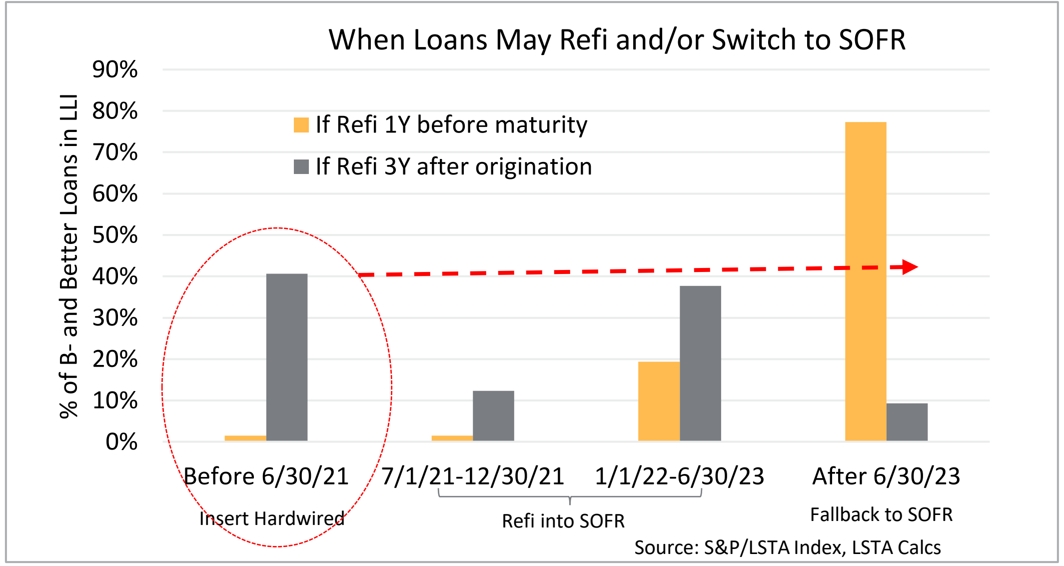
LIBOR Cessation Timeline & Syndicated USD Loans (as of 2.8.21)

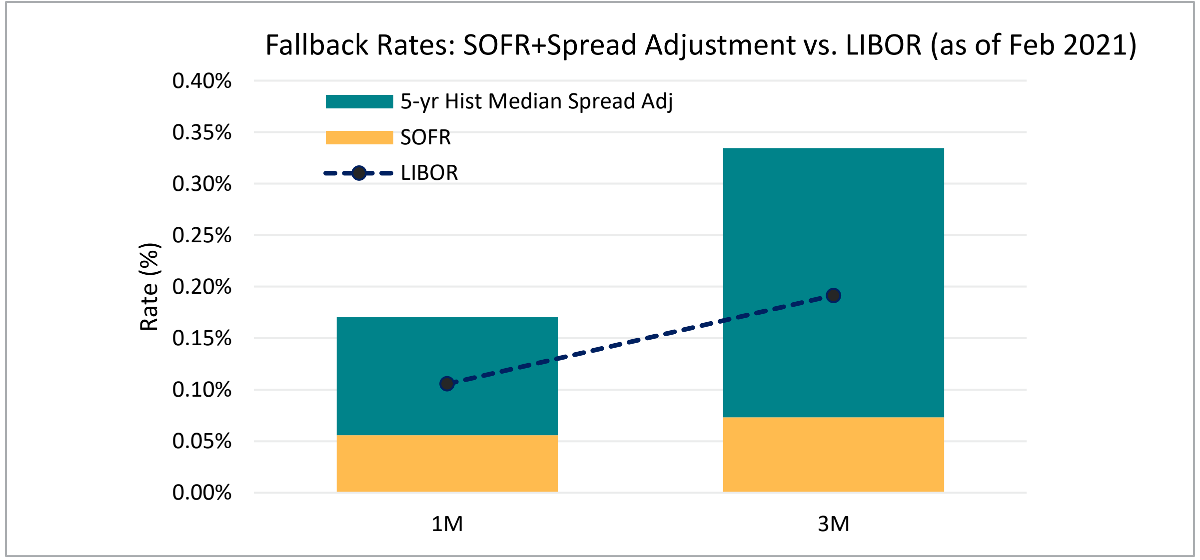
- **Now**: US Banking Supervisors indicated that banks should use hardwired fallbacks
- **Imminently**: IBA/FCA Announcements on LIBOR Cessation and/or Non-Representativeness are expected
  - LIBOR fallback spread adjustments will be set, *but* LIBOR transition will not begin
- **6.30.21**: ARRC *Recommended* Date for Ceasing LIBOR-based Loan Originations
- **12.31.21**:
  - Non-US LIBOR settings expected to cease and non-USD LIBOR contracts expected to transition to replacement rates
  - 1 Week and 2 Month USD LIBOR settings expected to cease
  - Banking Agencies say USD LIBOR may no longer be used for origination after this date (*presumably binding*)
  - Banks may not be in a position to offer derivative risk hedges to lending arrangements
- **6.30.23**: Remaining USD LIBOR settings cease
  - Outstanding legacy contracts must transition to replacement rate by 6.30.23

How Transition May Play Out for Loans & CLOs

LIBOR Cessation Timeline & Syndicated USD Loans (as of 2.8.21)

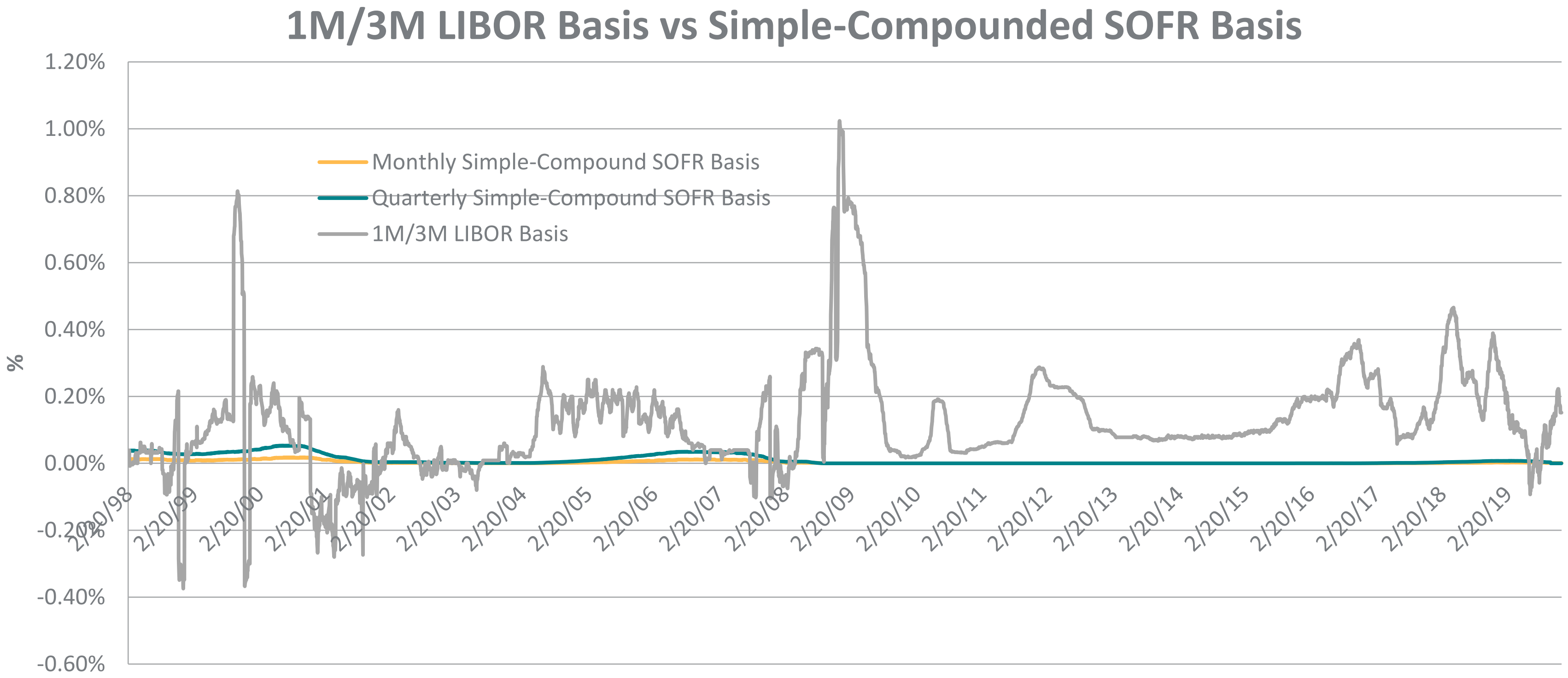
- How do loans transition to a replacement rate?
- Borrowers suggest that they will refinance into a replacement rate *before* 6/30/23 to “control their fate”
    - This would reduce LIBOR remediation risk substantially
    - Watch the economics!
    - ARRC recommended “spread adjustment” is 5-year historical median difference between LIBOR and SOFR
    - Because rates are so low, the 5-year historical median is *higher* than the current spot LIBOR-SOFR differential
    - Borrowers may want to embed a “lower than median” spread adjustment when refinancing into SOFR to keep all-in rate constant
    - When rates normalize, lenders may see a reduced all-in rate





Basis You Should Care About…
…And Basis You Shouldn't Care About

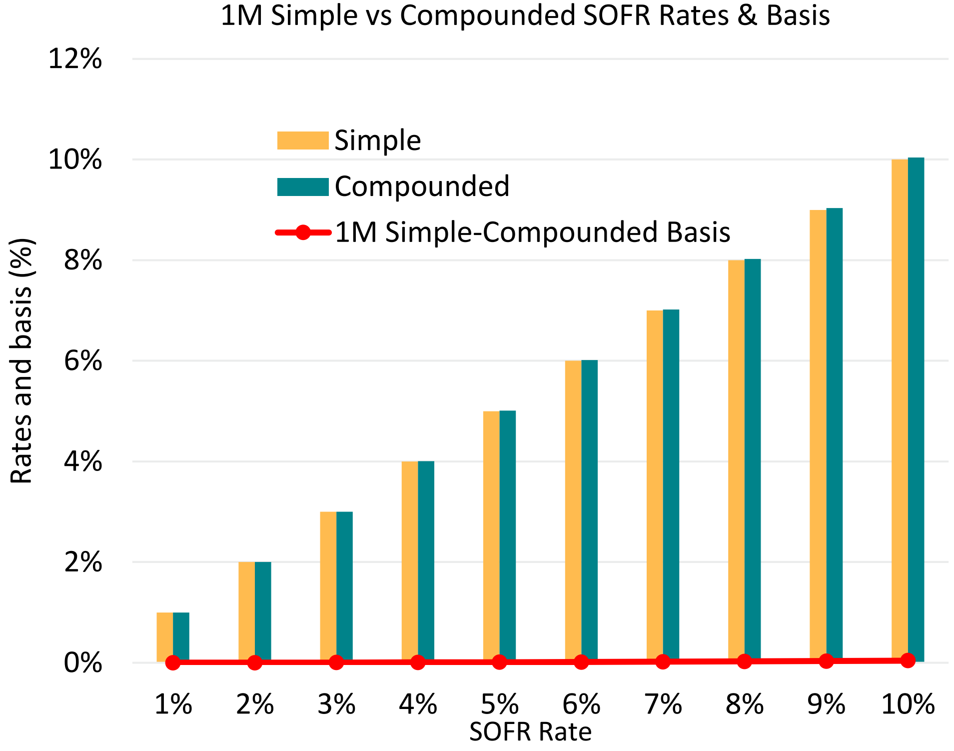
1M/3M LIBOR Basis Has Been Problematic for CLOs; Simple-Compounded SOFR Basis Doesn't Have Similar Risks

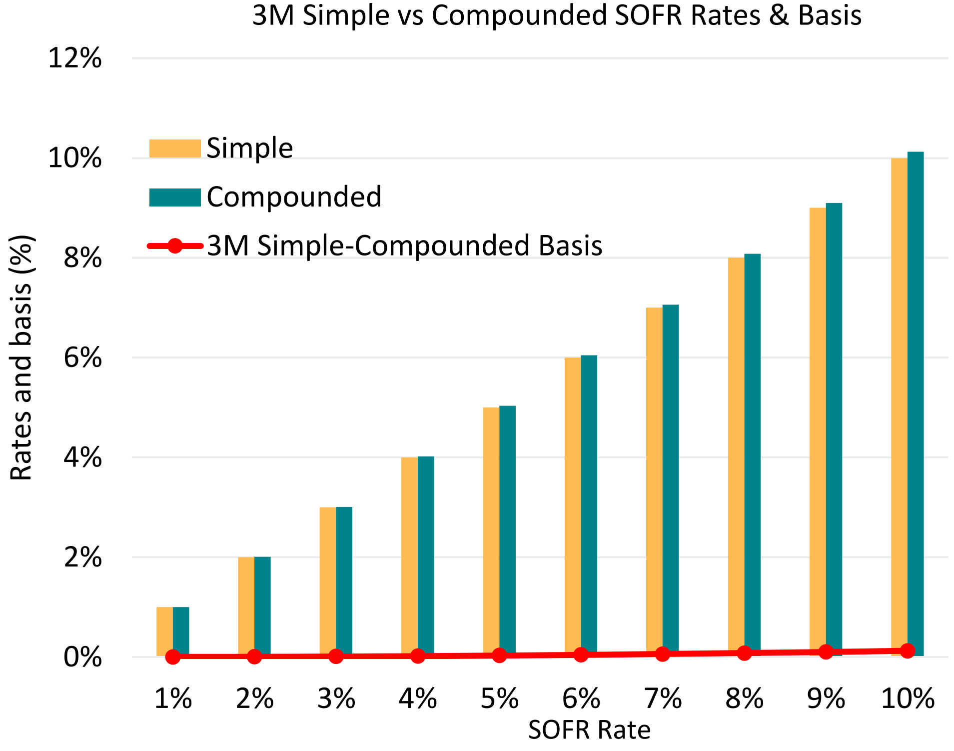


- 1M/3M LIBOR basis was as high as 40 bps in recent years
- Oversimplified math: 40 bps * 10x leverage is 4 percentage points of return
- Average basis for 3M Simple/Compound SOFR is 1 bp
- Oversimplified math: 1 bp * 10x leverage is 10 bps

Source: ARRC, St Louis Fed, LSTA

Simple-Compounded SOFR Basis Remains Low Even in Very High Rate Environment





- Even when risk free interest rates hit 10%, basis is modest
- This is because you are using an interest rate (ex. 10%), dividing by 360 to calculate a daily interest rate (0.027778% for 10%), then compounding that very small daily rate
- Because the daily rate is so small, compounding does not create a dramatically higher interest rate
- Assuming a **10% risk free interest rate**, 1M simple-compounded basis is 4 bps, 3M simple-compounded basis is 12 bps

Source: LSTA Calculations

CLOs' LIBOR-SOFR Basis Must Be Considered

- Assumptions (Using Feb 12, 2021 data)
  - 3M SOFR is 7 bps
  - 3M SOFR spread adjustment is 26 bps
  - 3M SOFR+spread spread adjustment is 33 bps
  - 3M LIBOR is 19 bps
  - SOFR+spread adjustment is 14 bps higher than LIBOR
  - *For scenario 3: 3M SOFR+ ½ spread adjustment is 20 bps*
  - ***Ignoring LIBOR floors on Assets and Liabilities***

- Scenarios
  - Scenario 1: 49% of loans are on SOFR, CLO liabilities <u>haven't</u> flipped to SOFR → ***Result: Higher than expected equity income because SOFR+spread adjustment (33 bps on assets) is higher than LIBOR (19 bps on liabilities)***
  - Scenario 2: 51% of loans are on SOFR, CLO liabilities <u>have</u> flipped to SOFR → ***Result: Lower than expected equity income because LIBOR (19 bps on assets) is lower than SOFR+spread adjustment (33 bps on liabilities)***
  - Scenario 3: 51% of loans are on SOFR (but borrowers negotiate a <u>13 bps</u> spread adjustment), CLO liabilities <u>have</u> flipped to SOFR → ***Result: Significantly lower than expected equity income because LIBOR (19 bps on assets) and SOFR+1/2 spread adjustment (20 bps on assets) is much lower than SOFR+spread adjustment (33 bps on liabilities)***

Source: LSTA Calculations

Q&A & Takeaways