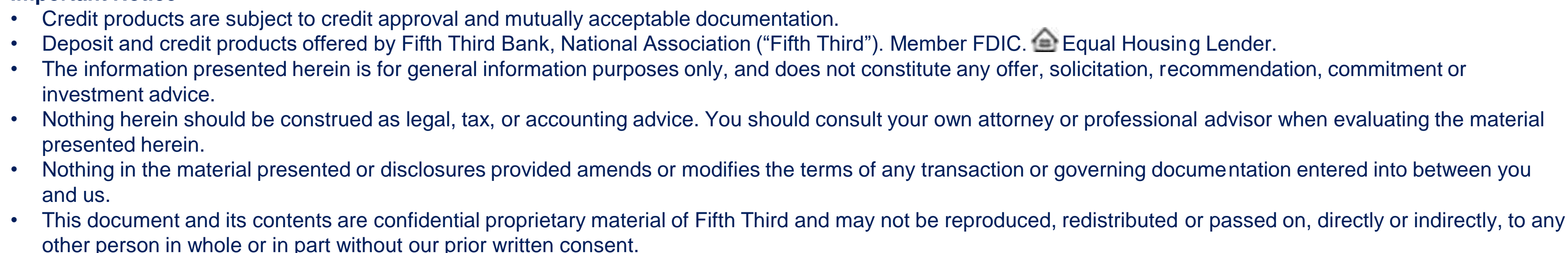
FIFTH THIRD BANK

LIBOR Transition: Endgame

September 28, 2021

Important Disclaimer



Important Notice

- Credit products are subject to credit approval and mutually acceptable documentation.
- Deposit and credit products offered by Fifth Third Bank, National Association (“Fifth Third”). Member FDIC. Equal Housing Lender.
- The information presented herein is for general information purposes only, and does not constitute any offer, solicitation, recommendation, commitment or investment advice.
- Nothing herein should be construed as legal, tax, or accounting advice. You should consult your own attorney or professional advisor when evaluating the material presented herein.
- Nothing in the material presented or disclosures provided amends or modifies the terms of any transaction or governing documentation entered into between you and us.
- This document and its contents are confidential proprietary material of Fifth Third and may not be reproduced, redistributed or passed on, directly or indirectly, to any other person in whole or in part without our prior written consent.

The information contained in this document has been compiled by Fifth Third and includes material that may have been obtained from information provided by various sources believed to be reliable and discussions with management but has not been verified or audited. Except in the general context of evaluating our capabilities, no reliance may be placed for any purposes whatsoever on the contents of this document or on its completeness. No representation or warranty, express or implied, is given and no responsibility or liability is or will be accepted by or on behalf of Fifth Third or by any of its subsidiaries, members, employees, agents or any other person as to the accuracy, completeness or correctness of the information contained in this document or any other oral information made available, and any such liability is expressly disclaimed.

About Fifth Third Capital Markets

Fifth Third Capital Markets is the marketing name under which Fifth Third and its subsidiary, Fifth Third Securities, Inc., provide certain securities and investment banking products and services. Fifth Third Capital Markets is a wholly owned subsidiary of Fifth Third Bank, National Association offering investment banking++, debt capital markets+, bond capital markets++, equity capital markets++, financial risk management+, and fixed income sales and trading++. Fifth Third provides access to investments and investment services through various subsidiaries, including Fifth Third Securities. Coker Capital Advisors is a division of Fifth Third Securities. Fifth Third Securities is the trade name used by Fifth Third Securities, Inc., member FINRA/SIPC, a registered broker-dealer and registered investment advisor registered with the U.S. Securities and Exchange Commission (SEC). Registration does not imply a certain level of skill or training. Securities and investments offered through Fifth Third Securities, Inc.:

- **Are Not FDIC Insured**
- **Offer No Bank Guarantee**
- **May Lose Value**
- **Are Not Insured by any Federal Government Agency**
- **Are Not a Deposit**

† Services and activities offered through Fifth Third Bank, National Association.
†† Services and activities offered through Fifth Third Securities, Inc.
Unless otherwise agreed, financial risk management products—including interest rate, commodities and foreign exchange swaps and derivatives—are offered by Fifth Third Bank, National Association, a provisionally registered Swap Dealer with the Commodity Futures Trading Commission (“CFTC”) and member of the National Futures Association. The term “swap” also includes foreign exchange forwards and foreign exchange swaps which are subject to certain requirements of the Commodity Exchange Act and the CFTC.

Participants

Bob Tull: Moderator

Global Head of Financial Risk Solutions, Fifth Third Financial Risk Management

As Managing Director & Global Head of the Financial Risk Solutions Group, Bob leads the trading and delivery of risk management products (interest rates, commodities, and foreign exchange derivatives) to corporate and institutional clients throughout North America, Europe, and Asia. He joined Fifth Third in 2000. Bob has over 25 years of capital markets & risk management experience. He is a member of the Bank of International Settlement's Market Participant Group and a member of the New York Federal Reserve's Foreign Exchange Committee and was appointed to the Working Group on U.S. RMB Trading and Clearing. Bob has a BA in Economics from The College of Wooster and MBA from Baldwin-Wallace University.

Rich Duggan: Panelist

Senior Vice President, Fifth Third Wholesale Loan Administration Manager

Rich leads a team involved in a wide range of projects impacting Fifth Third's commercial loan portfolio including, most recently, the efforts associated with the transition of the commercial loan portfolio from LIBOR to alternative reference rates. Rich has been in the Commercial Finance and Banking Industry for 32 years, the past 25 years at Fifth Third Bank. Rich is a CPA and holds a Bachelor of Business Administration degree in Accounting from the University of Notre Dame.

Tom Ritter: Panelist

National Sales Manager – Interest Rate Derivatives, Fifth Third Financial Risk Management

As Managing Director & National Sales Manager of the Interest Rate Derivatives Group, Tom leads the delivery of interest rate risk management products to both commercial and corporate clients. He joined Fifth Third in 2000 and has over 18 years of capital markets & risk management experience. Prior to joining Fifth Third, Tom worked at Arthur Andersen. Tom holds a BS in Accounting and Finance from Miami University.

Laura Schad Estes: Panelist

Executive Director, Fifth Third Financial Risk Management

Ms. Estes joined Fifth Third in 2019 to originate and structure interest rate derivatives, including swaps and options for commercial clients. She has over 15 years of experience in interest rate derivative markets. Prior to joining Fifth Third, Ms. Estes worked at the Federal Reserve Bank of New York, BMO Capital Markets, and JPMorgan Chase. Ms. Estes attended Georgetown University for her undergraduate and Northwestern University (Kellogg) for her graduate degrees.

Agenda and Objectives

1. LIBOR Transition Highlights
2. SOFR Overview
3. Other Alternative Rates
4. Practical Applications for Borrowers

Why Are We Here?

- U.S. Banks are required to stop offering LIBOR-based products by December 31, 2021.
  - That date is the end date – banks can go no later than the end of this year.
  - This means no new LIBOR loans or hedges and no extension of maturity or expansion of facilities.
- Regulators and other government agencies have stated the move away from LIBOR must occur at a balanced and measured pace, and that this transition needs to begin before the required end date.

Fifth Third Bank

"The King is Dead, Long Live the King"

- LIBOR is dying and is being replaced as the primary lending index in the United States.
  - LIBOR has been the reigning giant in US dollar-based lending for the many decades.
  - Interbank lending for term periods of 1-month, 3-month and 6-months were common vehicles to fund bank balance sheets in the 80's and 90's.
  - Over time, the market evolved and interbank funding transactions that underpinned LIBOR significantly diminished. As volumes declined, the determination of LIBOR became increasingly subjective over time, rather than objective.
  - This subjectivity made the index less market based and more susceptible to manipulation, reducing its credibility on the world stage despite reforms to the process.
  - Regulatory bodies here and abroad decided it was time for a change.

- SOFR is the new king in the market
  - SOFR was officially declared the preferred replacement rate to LIBOR for US dollar lending by the Alternative Reference Rates Committee (ARRC). The new SOFR index began to be formally published in April 2018.
  - SOFR is the de facto industry standard fallback index rate in debt agreements and derivatives contracts.
  - SOFR is objectively determined on a daily basis and is underpinned by hundreds of millions of dollars in transactions daily (close to $1Trillion daily).

The Secured Overnight Financing Rate (SOFR)

Background

- SOFR is a measure of the cost of borrowing cash overnight collateralized by U.S. Treasury securities.
  - This market is commonly referred to as the “repo” (Treasury repurchase) market.
  - In a typical “repo” transaction, one party sells government securities to another party on an overnight basis and buys them back the following day at a slightly higher price. The small difference in price is the implicit overnight interest rate.
  - Repos are commonly used by banks, including central banks, and they are therefore correlated with the Federal Funds Target rate. The repo market is a very deep and liquid market, with hundreds of billions of dollars traded daily (see volume in graphic below).
- SOFR represents the broadest measure of market activity in the repo market and is produced by the Federal Reserve Bank of New York (FRBNY).

Secured Overnight Financing Rate Chart

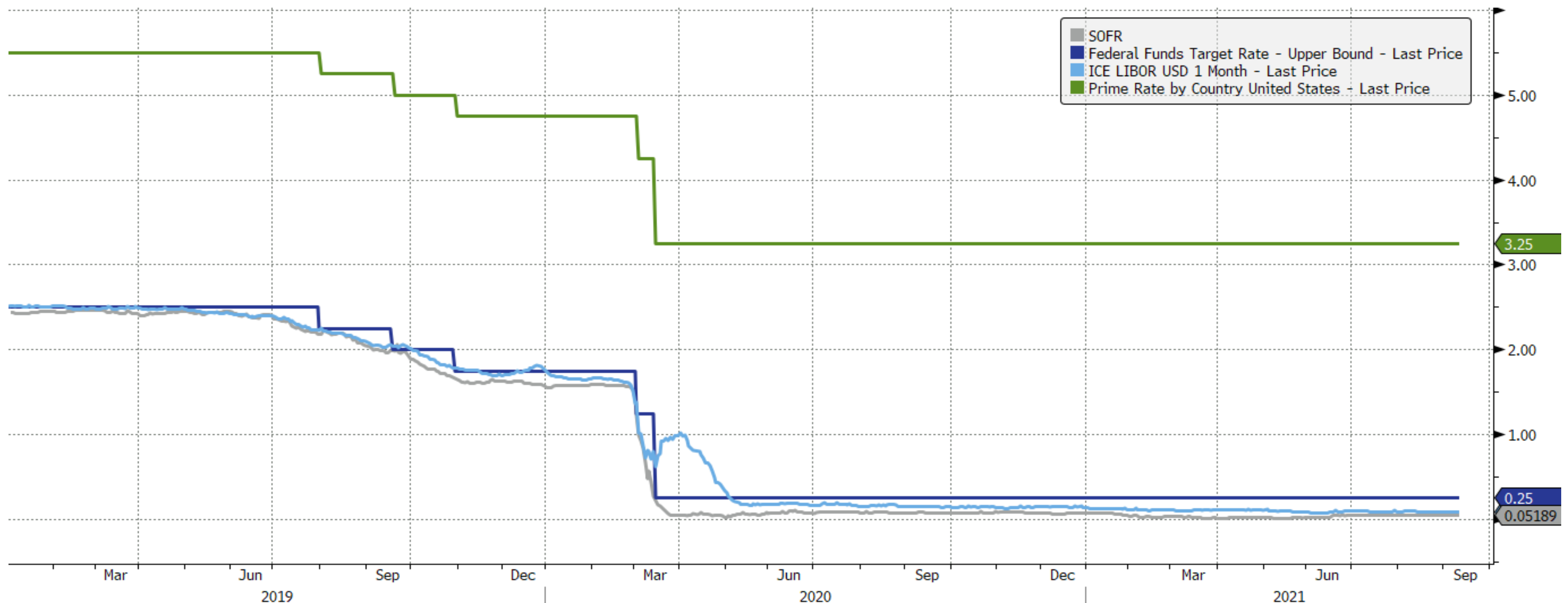
Source: Bloomberg as of September 20, 2021

The Secured Overnight Financing Rate (SOFR)

Background (continued…)

- SOFR is:
  - The recommended alternative to LIBOR by the ARRC
  - IOSCO Compliant (International Organization of Securities Commission)
  - Designated as a Benchmark Interest Rate by FASB (2018)
  - Typically trades in line with other short-term money market rates, such as the Fed Funds Rate
  - Can be used as a Daily Rate, 1-Month rate, 3-Month rate or 6-month rate
  - Can be compounded or used as a simple average
  - The standard fallback in loan agreements and interest rate derivatives contracts.

SOFR vs. Federal Funds Target Rate (Fed Funds) vs. One Month LIBOR (1M LIBOR) vs Prime

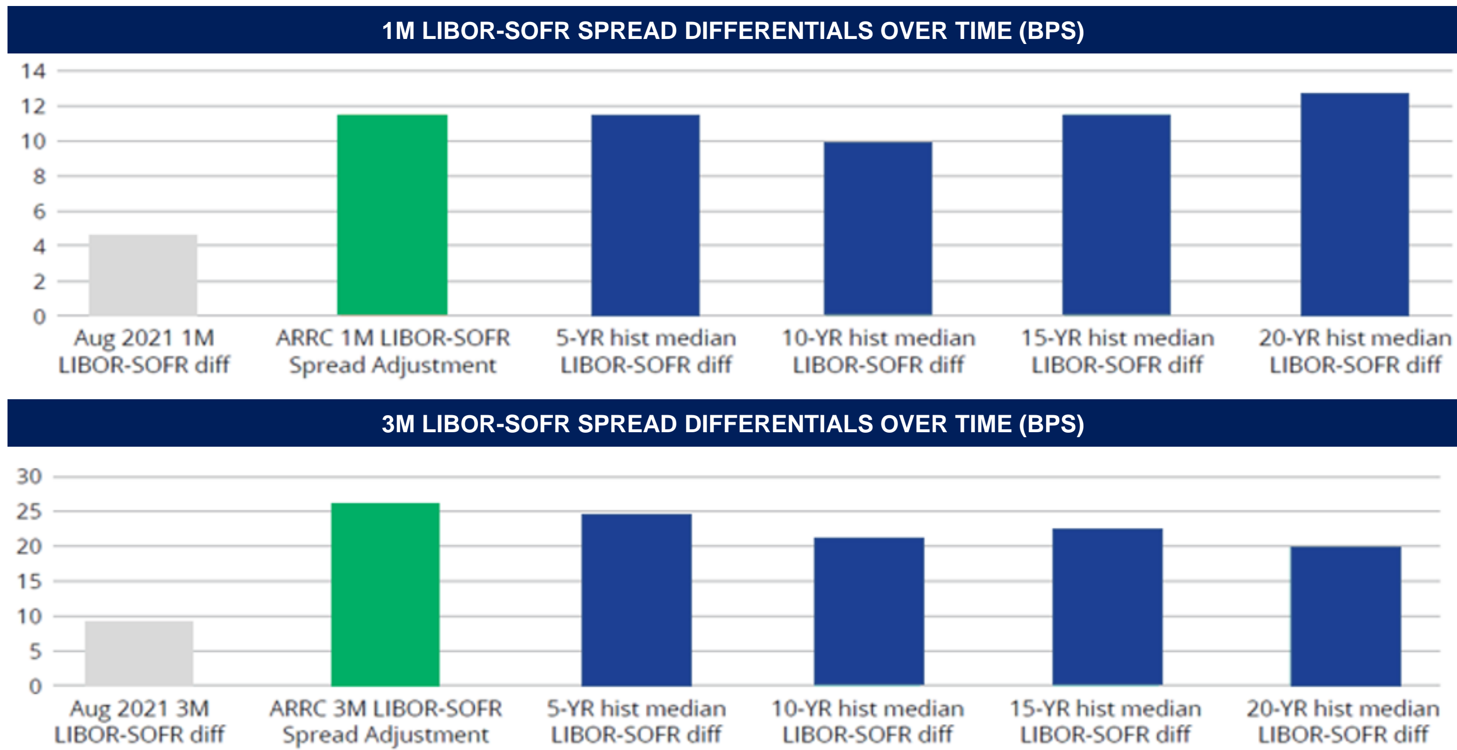


Source: Bloomberg as of September 20, 2021

Fifth Third Bank

SOFR Pricing – Historical LIBOR v SOFR Spreads

- As noted earlier, historical spreads between LIBOR and SOFR have varied slightly over long periods of time. More recently, as rates have approached zero during the pandemic, the differences between LIBOR and SOFR have tightened.
- Industry contractual fallback conventions for the "Spread Adjustment" between LIBOR and SOFR for Loans and Swaps are based on the 5Y average as of 3/5/2021 and are as follows:
  - 1-Month LIBOR falls back to SOFR + 0.11448%
  - 3-Month LIBOR falls back to SOFR + 0.26161%

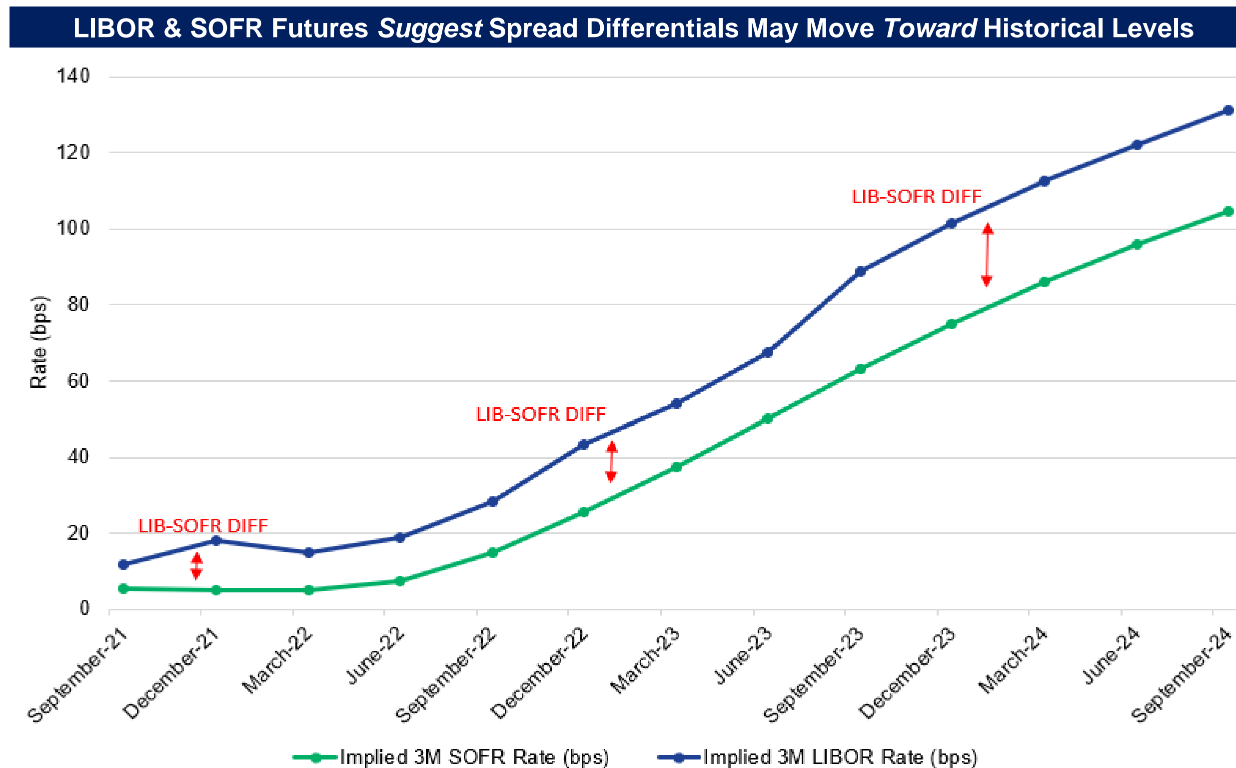


The above is sourced from LSTA published document "In Search of…'Fair' Spread Adjustments for New SOFR Loans (https://www.lsta.org/content/in-search-of-fair-spread-adjustments-for-new-sofr-loans/)

SOFR Pricing – Futures Implied LIBOR v SOFR Spreads

- Looking forward, interest rate futures contracts indicate that the market is anticipating that both LIBOR and SOFR rates will increase over the next several years.

- If as anticipated, rates move away from zero, the spread difference would likely widen and be closer to the ARRC recommended 11.448 bps and 26.161 bps spread for the 1M and 3M tenors, consistent with historical correlation.



Source: Bloomberg as of September 20, 2021

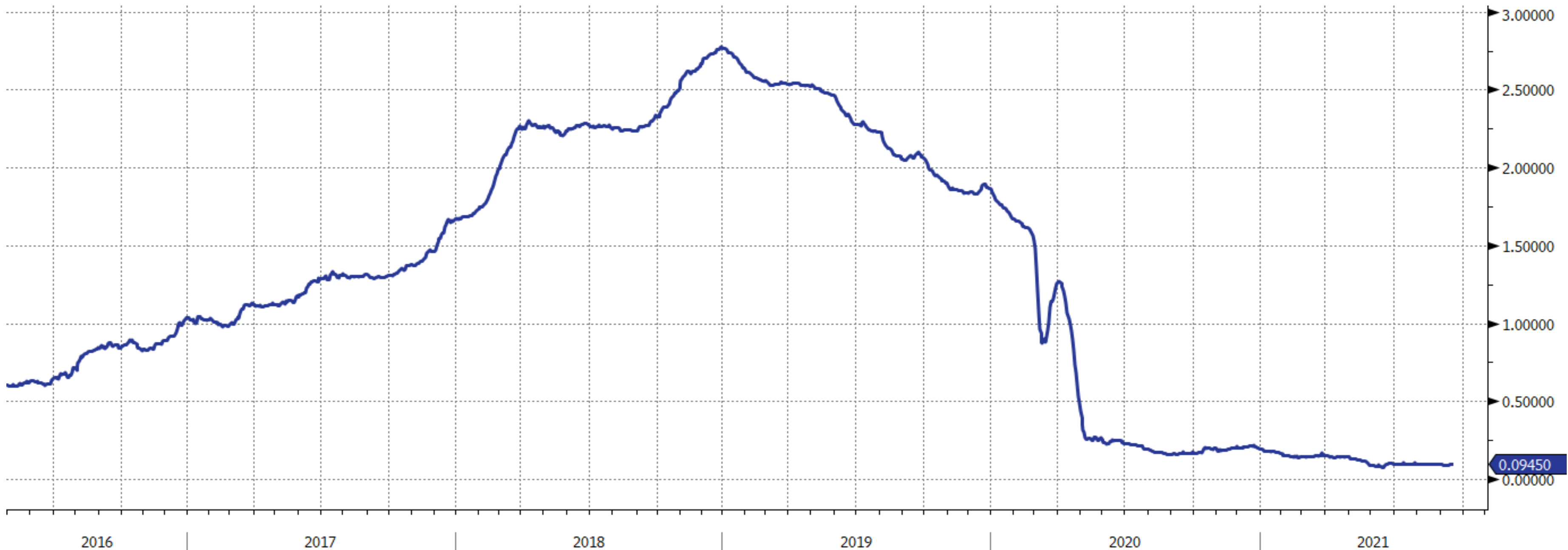
Fifth Third Bank

Bloomberg Short Term Bank Yield Index (BSBY) and Other Credit Sensitive Rates

Another party heard from…an uprising in the kingdom?

- BSBY was created to provide an alternative rate to LIBOR (though not specifically recommended by the ARRC)
  - Standalone rate that includes both a term structure and a dynamic credit-sensitive spread.
  - Calculated and published daily from consolidated, anonymized transaction data and executable quotes from primary markets in commercial paper, certificates of deposit, bank deposits and short-term corporate bonds.
  - BSBY futures were launched in Q3 2021 and derivatives clearing is expected in Q4 2021
- Regulators and IOSCO have expressed some concerns about the construction of credit-sensitive rates, including lack of market depth.
- Further, unlike SOFR:
  - ARRC has not recommended any credit-sensitive rates as an alternative to LIBOR or included such rates in its standard fallback language.
  - FASB has not yet designated any of these new credit-sensitive rates, like BSBY, as Benchmark Interest Rates.

Bloomberg 3 Month Short Term Bank Yield Index (3M BSBY)



Source: Bloomberg as of September 20, 2021

Rate Indices Differ In Their Construction

Summary Of High-Level Differences

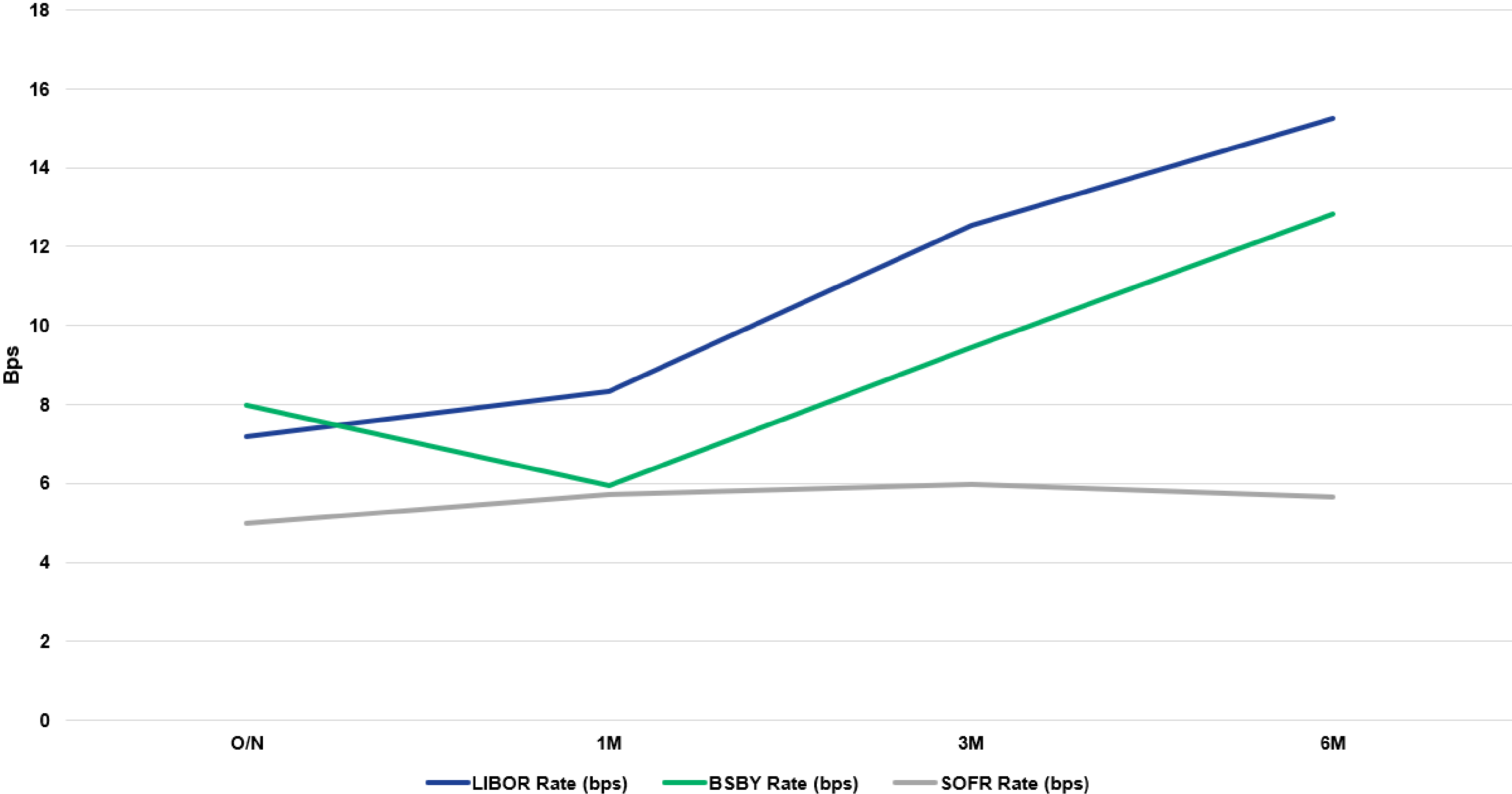
LIBOR	SOFR	BSBY	Prime
Bank to Bank Lending	Overnight Borrowings	Short-term borrowings	Bank lending rate (correlated to Fed Funds)
Unsecured	Secured with Treasuries	Unsecured	Unsecured
Bank Submissions	Transaction Based	Transaction Based	Bank Determined
O/N & Multiple Tenors	O/N & Multiple Tenors	O/N & Multiple Tenors	Overnight

Rate Construction Differences

- LIBOR settings reflect the cost of unsecured borrowings.
- Prime rates historically reflected the floating rate of interest for creditworthy commercial borrowers and includes a credit premium (as Prime typically trades at a spread of 300 basis points over the Federal Funds Target Rate)
- Overnight SOFR settings reflect the cost of overnight borrowings with underlying U.S. Treasury collateral.
- All else equal, secured funding results in lower rates than unsecured term transactions.
  - As such, SOFR should typically set lower than LIBOR due to the credit premia inherent in the LIBOR settings.
  - The pandemic has driven market rates back to the zero lower bound which has compressed short-term rates and the yield curve
- How to substitute one rate for the other is a key issue of the transition.

Sources: https://www.theice.com/iba/governance#:~:text=ICE%20Benchmark%20Administration%20(IBA)%20is,non%2Dexecutive%20and%20executive%20directors.
https://apps.newyorkfed.org/markets/autorates/sofr

Alternative Rate Reference Comparison



Source: Bloomberg as of September 20, 2021

FIFTH THIRD BANK

Practical Application of New Rates on Credit Agreements

LIBOR based lending (historically)

All-in Lending Rate = **LIBOR** + **Loan-Specific Credit Spread** ***(spread over LIBOR)***

LIBOR based lending (fallbacks)

All-in Lending Rate = **SOFR** + **Loan-Specific Credit Spread** ***(spread over LIBOR)*** + **SOFR Spread Adjustment***

* 11.448 bps for 1-Month LIBOR fallback or 26.161 bps for 3-Month LIBOR fallback

New SOFR based lending (or when amending existing loans)

All-in Lending Rate = **SOFR** + **Loan-Specific Credit Spread** ***(spread over SOFR)***

Wrap-Up and Review

- Thank you for participating in this call.

- We want to assure you this transition has our attention and that we are doing our best to make your transition away from LIBOR as easy and transparent as possible.

- For our borrowers with legacy LIBOR-based contracts that may not have adequate fallback provisions, we have a process underway to engage with you as needed.
  - Some of these agreements may be addressed in the normal course in response to credit events or periodic renewals.
  - Agreements with maturity dates that extend beyond the transition date of June 2023 may require an amendment and your Fifth Third Team will be contacting you to address those agreements in due course. There is no immediate action required on your part, unless desired by you.

- For clients with new borrowing needs, please note we will be quoting and pricing new loan agreements utilizing an alternative reference rate, such as SOFR.

- For interest rate hedging purposes, your Fifth Third Capital Markets Team and rates specialists will work with you to determine an appropriate hedge structure that aligns with the new index rates available.

- We do recommend that you become familiar with SOFR and consult your legal and accounting advisors and others as appropriate

The market is evolving. Please visit our LIBOR landing page for additional information. http://www.53.com/libor-transition

Appendix

Resources

- Fifth Third LIBOR Transition Resources:
  - https://www.53.com/libor-transition

- Federal Reserve Bank of New York SOFR Data & Info:
  - https://apps.newyorkfed.org/markets/autorates/sofr
  - https://www.newyorkfed.org/markets/reference-rates/additional-information-about-reference-rates

- Alternative Reference Rates Committee:
  - https://www.newyorkfed.org/arrc

- ISDA Resource Page:
  - https://www.isda.org/2020/05/11/benchmark-reform-and-transition-from-libor/

- CME Term SOFR:
  - https://www.cmegroup.com/market-data/cme-group-benchmark-administration/term-sofr.html

- Email LiborTransitionSupport@53.com for questions or information on dates and times for upcoming client webinars

- Contact your relationship manager/team, who will be happy to answer questions and provide any assistance you need