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December 16, 2024

Via electronic email

Rob Nichols
President and Chief Executive Officer
American Bankers Association
1120 Connecticut Ave., NW
Washington, DC 20036

Implementation of IOSCO-aligned credit spread reference benchmarks for SOFR which promote Banks' ability to provide credit and support U.S. economic activity

Dear President Nichols,

We appreciate the critical role the American Bankers Association (ABA) plays in representing and supporting the diverse interests of American banks, particularly in ensuring they remain competitive and resilient in an ever-evolving financial landscape.

I am the CEO of SOFR Academy, Inc.[1] (SOFR Academy), a U.S-based economic education and market information provider. Our mission is to enhance the efficiency, transparency, and stability of financial markets, a goal that aligns closely with the ABA's advocacy for sound banking practices and policies that enable financial institutions to thrive.

I write in connection with a September 2019 letter[2] from a collection of ten U.S. Regional banks requesting the development of a credit sensitive supplement for the Secured Overnight Financing Rate (SOFR). These banks stated that a supplement for SOFR would enable them to avoid

[1] The Firm's panel of advisors includes former U.S. Treasury Secretary Lawrence H. Summers and academics from Harvard University, Tsinghua University, the University of California Berkeley, New York University, the University of Oxford and London Business School, as well as experienced financial services professionals. SOFR Academy is a member of the American Economic Association (AEA), the Loan Syndications and Trading Association (LSTA), the International Swaps and Derivatives Association (ISDA), the Bankers Association for Finance and Trade (BAFT) which is a wholly owned subsidiary of the American Bankers Association (ABA), the U.S. Chamber of Commerce (USCC) and the Bretton Woods Committee (BWC). SOFR Academy's backers include 8VC founded by Joe Lonsdale, and former Goldman Sachs partner Robert Litterman who developed the Black–Litterman model together with Fischer Black in 1990. For more information, please visit www.SOFR.org.
[2] This letter is available at the NY Fed website and is also included in the appendix for convenience.

mismatches between their assets and liabilities in times of stress and promote their ability to provide credit to American businesses and communities, in both good economic times and periods of market turmoil. This statement has been validated through independent research using Federal Reserve data.[3]

In response, our firm has invested more than 3.5 years to develop, refine and launch the USD Across-the-Curve Credit Spread Index (AXI) and its extension the USD Financial Conditions Credit Spread Index (FXI) to satisfy this request.

AXI is a fully transaction-based measure of the recent cost of wholesale unsecured debt funding for publicly listed US bank holding companies and commercial banks. It is the weighted average of credit spreads for unsecured debt instruments with maturities ranging from overnight to five years, with weights that reflect both transaction and issuance volumes. The primary underlying input data source is obtained from the Financial Industry Regulatory Authority's Trade Reporting and Compliance Engine which is a mandatory post-trade transparency requirement. This long-term bond component is complemented by the short-term component using data from the Depository Trust & Clearing Corporation. No transactions from private markets or unregulated proprietary exchanges / platforms are used. FXI is constructed through the same methodology as AXI, however the scope is widened to include non-bank financial issuers and US corporate debt. AXI and FXI are generally highly correlated.

AXI and FXI are based on work by leading banking and finance academics from the Stanford Graduate School of Business and the Australian National University.[4] Instead of seeking to incrementally improve upon LIBOR, this academic team elected to break the problem down into core truths and fundamentally redesign a credit sensitive element from first principles based on their deep understanding of credit markets and the evolution of large bank funding composition. In doing so, they designed something unique.[5] None of the concerns expressed by regulators in connection with other credit sensitive proposals apply to AXI or FXI, and the introduction of these new credit spreads will not impact SOFR market liquidity.

AXI and FXI are calculated, published and administered by Invesco Indexing LLC, an independent index provider owned by global asset management firm Invesco Ltd. The group is legally, technologically, and physically separate from other business units of Invesco, including the various global investment centers. AXI and FXI are calculated and published each business day at approximately 9AM ET, using the prior day's transaction data.

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[3] Bank Funding Risk, Reference Rates, and Credit Supply by Harry R. Cooperman, Darrell Duffie, Stephan Luck, Zachry Z. Wang, and Yilin Yang NBER Working Paper No. 30907 February 2023, revised December 2023
[4] Antje Berndt, Darrell Duffie, and Yichao Zhu, "Across-the-Curve Credit Spread Indices," Financial Markets, Institutions and Instruments, Volume 32 (2023), pages 115-130.
[5] In 2013-2014, Duffie Chaired the Market Participants Group, charged by the Financial Stability Board with recommending reforms to Libor, Euribor, and other interest-rate benchmarks. Duffie has no affiliation with SOFR Academy.

The indices are accessible via Bloomberg (tickers: AXIIUNS & FXIXUNS) and LSEG Data & Analytics (RICs: .IIAXI & .IIFXI). There are a wide range of informational resources available, for example the AXI & FXI Brochure and links within.[6]

IBM Promontory,[7] previously known as Promontory Financial Group, was engaged to perform an independent limited assurance review of AXI and FXI's degree of implementation of relevant International Organization of Securities Commissions (IOSCO) Principles for Financial Benchmarks (Principles). IBM Promontory is a leading consulting firm operating at the intersection of strategy, risk management, technology, and regulation. Their review considered IOSCO's messages and findings from September 2021 and July 2023, as well as potential "inverted pyramid" risk. As previously confirmed in a public statement, neither AXI nor FXI were included in the scope of IOSCO's July 2023 review. IBM Promontory concluded that relevant Principles are fully implemented for AXI and FXI. In addition to IBM Promontory's dedicated review, the Benchmark Administrator completed independent assurance reviews against IOSCO Principles, conducted by PricewaterhouseCoopers LLP in 2022, 2023 and 2024. AXI and FXI are published and administered in compliance with the IOSCO Principles.

We have invested multiple years in moving from concept to operational reality, taking into account valuable input from various stakeholders. Indeed, our approach has included extensive consultation and engagement with industry associations, market participants, public sector representatives, and other relevant stakeholders. It is critical that these banks, which are at the heart of many communities, have the capacity to continue lending to American businesses through times of stress.

The introduction of IOSCO-aligned credit spread benchmarks such as AXI and FXI aligns with ABA's commitment to supporting sound banking practices and promoting policies that enable banks to lend to American businesses during all economic cycles. The introduction of AXI and FXI will also help ensure American banks are competing on a level playing field with bank counterparts in jurisdictions such as China and Europe, which continue to enjoy the benefits of a credit sensitive element.

We anticipate that in early 2025, a multilateral industry discussion will be hosted by a representative of the law firm Sullivan & Cromwell LLP, who was also a participant in the Credit Sensitivity Group Workshops convened by the Federal Reserve Bank of New York, where the concepts of AXI and FXI were first introduced.[8] The purpose of this discussion is to foster a shared understanding among market participants regarding the application of AXI and FXI in U.S. commercial lending and derivatives markets, as well as to address any market infrastructure considerations. We expect representatives from certain relevant U.S. official sector agencies to observe this discussion.

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[6] AXI & FXI Brochure is available here and the User's Guide to AXI & FXI is available here.
[7] https://www.ibm.com/case-studies/sofr
[8] https://www.newyorkfed.org/newsevents/events/markets/2020/0225-2020

The thoughtful and measured development and introduction of AXI and FXI into U.S. commercial lending markets will make the banking system and, in turn, the U.S. economy more resilient during times of economic stress.

We would be glad to discuss this further with you and your staff. Thank you for your attention to this important topic.

With sincere regards,

Marcus A. Burnett
CEO, SOFR Academy, Inc.
marcus@sofr.org

September 23, 2019

Via Electronic Mail

The Honorable Randal K. Quarles
Vice Chairman of Supervision
Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue, NW
Washington DC, 20551

The Honorable Joseph Otting
Comptroller of the Currency
Office of the Comptroller of the Currency
400 7th Street, SW
Washington, D.C. 20219

The Honorable Jelena McWilliams
Chair
Federal Deposit Insurance Corporation
550 17th Street, NW
Washington, D.C. 20552

Dear Vice Chairman Quarles, Comptroller Otting, and Chair McWilliams:

We are regional banking organizations that primarily focus on providing traditional retail and commercial banking products and services. Our institutions are significant providers of loans to Main Street and the real economy. Our traditional retail and commercial bank business models focus on the banking and financial services needs of American consumers, small and mid-size businesses, and state and municipal governments.

We wholeheartedly support the efforts of the official sector and the Alternative Reference Rates Committee to facilitate an orderly transition away from the London Interbank Offered Rate (LIBOR) to the Secured Overnight Financing Rate (SOFR). We believe SOFR can and should be the liquid reference rate for the significant majority of derivatives and debt products that currently reference LIBOR.

However, we believe that SOFR, on a stand-alone basis, is not well suited to be a benchmark for lending products and have concerns that this transition will adversely affect credit availability. LIBOR reflects unsecured inter-bank borrowing rates and accordingly contains a credit risk premium. During periods of economic stress, credit spreads on bank debt and other wholesale bank borrowings tend to increase, raising banks' cost of funds. Historically, during these periods, the spreads between LIBOR and other risk-free short-term borrowing rates widened reflecting a higher credit risk premium demanded by debt investors. Because bank loans are benchmarked to LIBOR, bank lending and borrowing rates moved in concert with each other.

SOFR is a credit risk-free benchmark reflecting rates on overnight borrowings secured by U.S. Treasury securities. During times of economic stress, SOFR (unlike LIBOR) will likely decrease disproportionately relative to other market rates as investors seek the safe haven of U.S. Treasury securities. In that event, the return on banks' SOFR-linked loans would decline, while banks' unhedged cost of funds would increase, thus creating a significant mismatch between bank assets (loans) and liabilities (borrowings). Moreover, banks' SOFR-linked lending commitments to their commercial customers will likely exacerbate this mismatch. Specifically, borrowers may find the availability of low cost credit in the form of SOFR-linked credit lines committed prior to the market stress very attractive and borrowers may draw-down those lines to "hoard" liquidity.

The natural consequence of these forces will either be a reduction in the willingness of lenders to provide credit in a SOFR-only environment, particularly during periods of economic stress, and/or an increase in credit pricing through the cycle. In a SOFR-only environment, lenders may reduce lending even in a stable economic environment, because of the inherent uncertainty regarding how to appropriately price lines of credit committed in stable times that might be drawn during times of economic stress. Moreover, in economically stressed times, these forces could increase pro-cyclicality, put pressure on lenders' liquidity, and generally exacerbate stress in the economy.

We believe a sensible and practical way to address these risks is to create a SOFR-based lending framework that includes a credit risk premium.[1] That framework could consist of a dynamic spread that reflects changes in banks' cost of funds over forward-looking term periods and is added on a periodic basis to SOFR-based rates. With more closely aligned borrowing and lending rates, banks will be more willing and able to extend credit during both good times and bad. Including credit sensitivity as part of the framework is the most straight forward approach to achieve this alignment, as it enjoys the benefits of using SOFR as a robust underlying rate and does not require complex hedging strategies which are ill-suited for smaller Main Street lenders and community banks with less complex balance sheets.

We believe this lending benchmark framework is practical and achievable. The vast majority of borrowers are already familiar with this approach to rates in the lending markets as many loans currently are tied to credit sensitive benchmarks like LIBOR, the prime rate, and COFI (cost of funds index). We also note that in addition to those rates, multiple other rates (e.g., CMT (constant maturity treasury rate) and MTA (monthly treasury average)) are used in lending markets, and that rate types in lending markets are diverse. Accordingly, participants in those markets do not have an expectation that interest rate frameworks will be monolithic (e.g., participants do not expect a SOFR-only environment).[2] In addition, availability of a credit sensitive rate element would facilitate and likely accelerate the orderly transition from LIBOR given broad market acceptance of credit sensitive rates.

We want to make you aware of our support for SOFR and our desire to explore inclusion of a credit sensitive rate element in the lending markets as a supplement to SOFR. We seek your support in creating a private market participant industry working group, which would include the active participation of the Federal Reserve and other official sector participants, to determine

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[1] Duffie/Stein discuss importance of credit sensitive benchmark:

Duffie, Darrell and Stein, Jeremy C. (2015), "Reforming LIBOR and Other Financial Market Benchmarks", *Journal of Economic Perspectives*, Volume 29, Number 2, Spring 2015, pp. 191-212. https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.29.2.191

[2] Conclusion that monolithic credit-risk free rate structures fail to address all market needs and further noting possibility that credit-sensitive rates will co-exist with credit-risk free rates in a post-LIBOR world:

Schrimpf, Andreas and Sushko, Vladyslav (2019), "Beyond LIBOR: a primer on the new reference rates", *BIS Quarterly Review*, March 2019, pp 29-52. https://www.bis.org/publ/qtrpdf/r_qt1903e.pdf how best to do this. We believe inclusion of a credit risk premium is essential to addressing the concerns outlined above and will make the banking system and, in turn, the U.S. economy more resilient during times of economic stress and facilitate the transition of lending markets from LIBOR.

Sincerely,

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Board of Governors of the Federal Reserve System
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January 23, 2020

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Matthew Tyler
Corporate Treasurer
Zions Bancorporation, National Association

Dear Messrs. Marshall, Lindenauer, Leonard, Trohan, Smithy, Feil, Herzog, Warman, King, and Tyler:

Thank you for your letter dated as of September 23, 2019, supporting the efforts of the official sector and the Alternative Reference Rates Committee to facilitate an orderly transition away from the London Interbank Offered Rate to the Secured Overnight Financing Rate (SOFR). Your letter suggests exploring the inclusion of a credit sensitive rate element in the lending markets as a supplement to SOFR. Attached is an appendix that establishes a plan for exploring such a supplement to SOFR.

Staff from our agencies will be in touch soon to discuss next steps.

Sincerely,

Randal K. Quarles
Vice Chair for Supervision
Board of Governors of the
Federal Reserve System

Joseph Otting
Comptroller
Office of the Comptroller of the Currency

Jelena McWilliams
Chairman
Federal Deposit Insurance Corporation

Appendix: Plan for LIBOR Transition Credit Sensitivity Group

1. **A Credit Sensitivity Group (CSG) would be convened to respond to the concerns of many US banks that SOFR – while appropriate for derivatives and securities products – may not be a sufficient reference rate for loan products.**
   - The CSG's work would proceed in two phases. In phase one the official sector would convene the CSG to conduct a series of working sessions among banks of all sizes and borrowers of different types, with the goal of understanding the lending needs of these banks and their borrowers and how a robust credit sensitive rate/spread for loans could be developed to address them.
     - These meetings would include discussions with individual institutions as well as broader working sessions and public forums.
     - The intent will be for the CSG to focus on the issues surrounding a credit sensitive rate/spread that could be added to SOFR, but not to become an "alternative ARRC."
     - The outcome of these discussions would be public, with publically available minutes and possibly a white paper issued at an appropriate point.
     - The secretariat of the CSG would be from the NY Fed to emphasize continuity with the existing transition process, but it would be separate from the existing ARRC.
     - As with the ARRC, relevant agencies such as the Treasury, OCC, and FDIC would have ex officio roles in the CSG process.
   - In Phase two, the CSG would work to recommend a specific credit sensitive rate/spread and determine how to address implementation issues. At this stage, the CSG would likely adopt a formal membership and governance structure as it moves to execution of a concrete plan.

2. **Simultaneously, the official sector would engage the regional banks and their customers in the work of the ARRC through membership and joint ARRC / official sector outreach to the regional and community banks.**