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Nathaniel Wuerffel
Senior Vice President
Federal Reserve Bank of New York
33 Liberty St, New York
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Via electronic email

**RE: Notification of forthcoming official launch of Across-the-curve credit spread
indices: AXI, FXI, SOFRx and SOFRy**

Dear Mr. Wuerffel,

I am writing to you in connection with your involvement with the CSG workshops where across-the-curve credit spread indices^{1,2} were first introduced by Stanford University Professor Darrell Duffie³ and Australian National University Professor Antje Berndt and to notify you of the forthcoming official launch of USD Across-the-Curve Credit Spread Indices (“AXI”) and USD Financial Conditions Credit Spread Indices (“FXI”)⁴.

On May 12, 2022, the Loan Syndications and Trading Association (“LSTA”) published a note stating that the U.S. market would benefit from a Credit Spread Adjustment (“CSA”) convention⁵. The same note states that the lack of a clear market convention for CSAs means that fallback language that pushes agents to use the “evolving or then-prevailing” market convention can be challenging.

¹ Berndt, Antje and Duffie, James Darrell and Zhu, Yichao, Across-the-Curve Credit Spread Indices (July 23, 2020). Stanford University Graduate School of Business Research Paper No. 3884, Available at: <https://www.gsb.stanford.edu/faculty-research/working-papers/across-curve-credit-spread-indices>

² Additional information about across-the-curve credit spreads is available at SOFR.org/AXI

³ Duffie is the Dean Witter Distinguished Professor of Finance at Stanford Graduate School of Business and Chaired the [Market Participants Group](#) in 2014 which was established by the Financial Stability Board (FSB). Duffie is not involved in the operationalization of AXI or FXI and has no financial interest related to AXI, FXI, SOFR Academy, or Invesco.

⁴ FXI is an extension of AXI which widens the coverage as to include transactions from non-bank financial institutions and non-financial corporates. FXI is approximately 500% more robust than AXI and is highly correlated with AXI especially over recent years (Berndt, Duffie & Zhu, 2020).

⁵ See LSTA publication - LIBOR TRANSITION: LESSONS FROM ACROSS THE OCEAN <https://www.lsta.org/news-resources/libor-transition-lessons-from-across-the-ocean/>

Given that the shift in activity away from LIBOR to the Secured Overnight Financing Rate (“**SOFR**”) has become well established as demonstrated by the development of sustained deep and liquid SOFR markets⁶, we believe that we are now approaching an appropriate time to introduce a robustly defined credit sensitive supplement to SOFR in response to market demand.

This is consistent with the framework proposed by the group of U.S. regional banking organizations in their September 2019 letter⁷ to regulators in which they expressed their support for SOFR in addition to a “credit sensitive rate element”, and with the original intention of the Credit Sensitivity Group (“**CSG**”) workshops⁸.

The benchmarks will be published by recognized benchmark administrator Invesco Indexing LLC (“**Invesco**”) which is owned by American investment management firm Invesco Ltd (NYSE: IVZ). The AXI Index is developed, maintained and overseen through a governance framework established in alignment with International Organization of Securities Commissions (“**IOSCO**”) Principles for Financial Benchmarks.

Under the 2022 AXI Master License Agreement (“**MLA**”), data license fees are being waived for market regulators, central banks, and multilateral development banks. Further, fees are being waived for market data vendors / data redistributors. AXI and FXI will be published each business day on a T+1 basis at approximately 9am New York City time. Financial institutions who have demonstrated interest in AXI include U.S. Regional banks, multiple Global Systemically Important Banks (“**G-SIBs**”) and liquidity providers.

In addition, ‘all-in’ benchmark rates will be calculated and published where across-the-curve credit spreads are combined with variations of SOFR that are published and administered by the NY Fed⁹. A benchmark comprised of a variation of SOFR plus AXI is referred to as ‘**SOFRx**’. A benchmark comprised of a variation of SOFR plus FXI is referred to as ‘**SOFRy**’.

On Friday, May 27th, 2022, the International Swaps and Derivatives Association (“**ISDA**”) expanded their Interest Rate Derivatives Definitions Floating Rate Matrix to include new Floating Rate Options (“**FRO**”) for both USD-AXI Term and USD-FXI Term. Further, ISDA has added provisions so that market participants can use AXI or FXI with any other FRO in one swap eliminating the need for two swaps to hedge SOFRx or SOFRy positions. AXI and FXI are designed such that the pool of underlying transactions is sufficiently deep for use in derivatives market applications (Berndt, Duffie & Zhu, 2020).

Regarding Term SOFR usage in conjunction with Term AXI or Term FXI, hedging transactions will be facilitated bilaterally by new ISDA confirmation templates. Discussions are underway with CME Group Benchmark Administration (“**CBA**”) with a view to license CME Term SOFR to produce ‘all-in’ Term SOFRx and Term SOFRy benchmarks based on CME Term SOFR. If an agreement is reached, we would expect that transactions referencing

⁶ https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2022/ARRC_Readout_May_2022

⁷ See letter from U.S. Regional banking organizations, available at:

<https://www.newyorkfed.org/medialibrary/media/newsevents/events/markets/2020/credit-sensitivity-letters.pdf>

⁸ Neither AXI nor FXI are associated with, endorsed, or sponsored by the New York Fed.

⁹ Any republication of SOFR and any ‘all-in’ rates based on SOFR rates administered by the NY Fed will be published in accordance with the NY Fed’s [terms of use](#)

Term SOFRx and Term SOFRy will be restricted in their scope of use consistent with the ARRC's Best Practice Recommendations Related to Scope of Use of the Term Rate,¹⁰ including the definition of an end-user. These restrictions would be codified in a separate MLA and a process would be set up with CBA to ensure that any licensee of Term SOFRx and Term SOFRy benchmarks held an existing CME Term SOFR license¹¹.

The development and operationalization of AXI and FXI was not rushed. A significant amount of work has gone into the operationalization of AXI and FXI over the past year. Contributing to this effort were leading financial academics from the Massachusetts Institute of Technology, New York University, The University of California, Berkeley, and the University of Oxford. Further, feedback and input from financial institutions, end users, and relevant trade associations helped shape the final product design.

LIBOR is no longer close to being representative of banks' actual costs of funds (Bowman, Scotti and Vojtech, 2020). In the event that banks choose to include a variable bank credit spread component to their floating-rate loan terms to hedge changes in their funding costs, AXI and FXI are representative and robustly determined choices because they depend on a broad set of debt issuances with maturities ranging from short term to multiple years. Whenever a loan is indexed to AXI or FXI, it would also reference SOFR. So, their use does not imply less frequent references to SOFR.

We have previously outlined¹² the benefits for the U.S. of an independently calculated CSA produced in a regulated environment which include enhanced market transparency and the promotion of financial inclusion and fairness.

We welcome any feedback or questions you might have, as well as a discussion at your convenience. Thank you kindly for your consideration of this update.

Yours sincerely,



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¹⁰ https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2021/ARRC_Scope_of_Use.pdf

¹¹ A message from the CME Group: Any prospective user of AXI or FXI that would intend to also use CME Term SOFR in developing an interest rate for Cash Market Financial Products or OTC Derivative Products would require a license with CME Group for use of CME Term SOFR.

¹² See SOFR Academy, January 2022, Insight: *Solving the SOFR credit-spread problem: The path forward for leading banks* <https://sofracademy.com/solving-the-sofr-credit-spread-problem-the-path-forward-for-leading-banks-2/>