

July 2, 2020

Via email to the Department of the Treasury at: [govsecreg@fiscal.treasury.gov](mailto:govsecreg@fiscal.treasury.gov)  
Subject: TREAS–DO–2020–0007

**Re: Notice and Request for information of the Department of the Treasury regarding the Development and Potential Issuance of Treasury Floating Rate Notes (“FRNs”) Indexed to the Secured Overnight Financing Rate (“SOFR”) (“Notice”)**

The Floating Rate Notes Working Group of the Alternative Reference Rates Committee (“ARRC FRN Working Group”) appreciates the opportunity to respond to the Treasury’s Notice. The ARRC FRN Working Group responses (“Responses”) to select questions in the Notice are set forth below. For your convenience, the Responses have been placed in the order in which the selected questions were presented, and the text of each question is presented in italics before the associated Response. Capitalized terms used herein and not defined have the meanings set forth in the Notice.

**About the ARRC**

The ARRC is a group of private-market participants convened by the Federal Reserve Board and Federal Reserve Bank of New York (“FRBNY”) in cooperation with the Consumer Financial Protection Bureau, the Federal Deposit Insurance Corporation, the Federal Housing Finance Agency, the Office of Financial Research, the Office of the Comptroller of the Currency, the Commodity Futures Trading Commission, the Securities and Exchange Commission and the U.S. Treasury Department. It was initially convened in 2014 to identify risk-free alternative reference rates for USD LIBOR, identify best practices for contract robustness, and create an implementation plan with metrics of success and a timeline to support an orderly adoption. The ARRC accomplished its first set of objectives and identified the SOFR as the rate that represents best practice for use in certain new USD derivatives and other financial contracts. It also published its Paced Transition Plan, with specific steps and timelines designed to encourage adoption of the SOFR. The ARRC was reconstituted in 2018 with an expanded membership to help to ensure the successful implementation of the Paced Transition Plan, address the increased risk that LIBOR may not exist beyond 2021, and serve as a forum to coordinate and track planning across cash and derivatives products and market participants currently using U.S. dollar LIBOR.

**About the ARRC FRN Working Group**

The ARRC is supported by eleven working groups tasked with specific objectives to help enable a smooth transition from U.S. dollar LIBOR. One of the objectives of the ARRC FRN Working Group is to identify the considerations relevant to using SOFR in FRN issuances. In furtherance of this goal, the ARRC FRN Working Group has published information and recommendations about SOFR FRN conventions and how the FRBNY’s daily published SOFR Index (“Index”) may be referenced in FRNs.<sup>1</sup> The ARRC FRN Working Group develops its recommendations based

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<sup>1</sup> To help market participants as they consider issuing or investing in SOFR-based FRNs, the ARRC FRN Working Group published a matrix on August 1, 2019 that identifies considerations relevant to using SOFR in FRNs, available at: [https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2019/ARRC\\_SOFR\\_FRN\\_Conventions\\_Matrix.pdf](https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2019/ARRC_SOFR_FRN_Conventions_Matrix.pdf).

On November 21, 2019, the ARRC FRN Working Group published an appendix to the conventions matrix that includes SOFR FRN term sheets and fallback language, available at: [https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2019/ARRC\\_SOFR\\_FRN\\_Matrix\\_Appendix.pdf](https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2019/ARRC_SOFR_FRN_Matrix_Appendix.pdf).

On May 6, 2020, the ARRC FRN Working Group released a statement to provide market participants with information about how the FRBNY’s published SOFR Index may be referenced in FRNs that includes structuring considerations and a term sheet, available at: [https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/Statement\\_on\\_SOFR\\_Index.pdf](https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/Statement_on_SOFR_Index.pdf).

on feedback it receives from a broad range of market participants including buy-side, sell-side, and intermediary participants in markets affected by U.S. dollar LIBOR, which have been actively engaged in the ARRC's efforts.

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**Question 3.1:** *What are the primary considerations Treasury should evaluate when structuring a Treasury SOFR-indexed FRN? How would different potential security structures affect investment decisions by market participants, including with respect to activity in derivatives markets?*

**Response:** The ARRC FRN Working Group recommends that Treasury consider the following factors when structuring an FRN:

- Secondary market liquidity and trading for various FRN structures
- Timing of payments (e.g., delayed payments are an impediment for many buy-side market participants according to a survey conducted by The Credit Roundtable<sup>2</sup>)
- Operational efficiency (e.g., fewer system enhancements required)
- Ease of calculation (e.g., systems are capable of calculating final accrued amounts before settlements are due)
- Hedge effectiveness (i.e., how closely the coupons could align with the floating leg of a SOFR-linked cleared derivative)
- Inclusion of all SOFR fixings in the calculation of payments (i.e., generally market participants wish to avoid “lockouts” as discussed below)
- Market consistency (i.e., market participants have cited consensus across FRN structures as an important factor in either issuing or buying FRNs)

Additional considerations for structuring the FRN are set forth in the ARRC FRN Working Group's Response to Question 3.8 below.

**Question 3.5:** *Should interest on Treasury SOFR-indexed FRNs be calculated based on a simple average or a compounded average of SOFR? Should Treasury consider indexing the security to an average rate based on SOFR, such as those recently published by FRBNY as administrator for SOFR? If so, what would be the optimal averaging period for a SOFR-indexed FRN?*

**Response:** The ARRC FRN Working Group recommends that Treasury issue an FRN based on a compounded average of daily SOFR rather than a simple average of daily SOFR for the following reasons:

- The compounded rate of interest more accurately reflects the time value of money than a simple average. There will be economic equivalence between the compounded rate of interest and the interest applicable for a deposit that is held in a bank account for the same period or invested and rolled daily in overnight markets.
- Use of a compounded rate aligns with the established market practice for SOFR-referencing derivatives, including the cleared overnight index swap (“OIS”) market. This may be preferable for hedging purposes.

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<sup>2</sup> The Credit Roundtable conducted a survey regarding the transition from LIBOR to SOFR that was open from January 29, 2020 to February 25, 2020. The purpose of this survey was to collect information on different conventions for using SOFR in order to help to identify a recommended compounding structure for SOFR FRNs. The results of The Credit Roundtable's survey are available at: [https://cdn.ymaws.com/thecreditroundtable.org/resource/resmgr/surveys&results/crt\\_libor\\_to\\_sofr\\_transition.pdf](https://cdn.ymaws.com/thecreditroundtable.org/resource/resmgr/surveys&results/crt_libor_to_sofr_transition.pdf).

- SONIA<sup>3</sup> FRNs are compounded, therefore using compounding for SOFR may reduce the risk of international liquidity fragmentation.
- The potential additional complexity of calculating the compounded interest rate could be mitigated by use of the FRBNY's published SOFR index ("SOFR Index"), as discussed further below.

Most SOFR FRN issuances have thus far employed an "*in arrears*" framework using SOFR rates over the applicable interest period<sup>4</sup> rather than over a prior interest period ("*in advance*"). Consistent with this existing market practice, the ARRC FRN Working Group recommends Treasury use an average of daily SOFR *in arrears* over a quarterly interest period because it reflects what actually happens to interest rates over the applicable period rather than a prior period. While it would be challenging to use the FRBNY's published SOFR averages *in arrears* given the set day counts, this could be accomplished by referencing the FRBNY's daily published SOFR Index that allows for calculation of compounded average rates over custom time periods.<sup>5</sup>

The ARRC FRN Working Group recommends that Treasury use the SOFR Index to calculate compounded SOFR for its issuance for the following reasons:

- The SOFR Index could expedite the interest calculation process by enabling market participants to take the applicable rate from the FRBNY's website and apply it to a relatively simple formula. Issuances not using the index refer to a more complex mathematical formula.
- The SOFR Index assists with consistent determinations of compounded interest calculations involving non-business days and national holidays as well as rounding conventions.
- The SOFR Index provides third parties with an accessible method to validate calculations of interest payable.
- The SOFR Index assists with secondary market trading and calculation of accrued interest to date.
- Use of the SOFR Index by Treasury could encourage new market use of the SOFR Index for products that would like a more transparent means of referencing the compounded rate "*in arrears*" and could promote liquidity through the adoption of standard market conventions for FRNs.

**Question 3.6:** *What coupon frequency should be used for a Treasury SOFR-indexed FRN? Note that the existing 13-week T-bill FRN pays coupons quarterly. Would a semi-annual, or other coupon frequency be preferred? When during the month should coupon and principal payments be made?*

**Response:** The Working Group observes that quarterly coupons are generally consistent with most existing SOFR FRNs and believes this would likely be a market-accepted coupon frequency.

**Question 3.7:** *Should the index rate for a Treasury SOFR-indexed FRN reset daily, weekly, or at some other frequency?*

<sup>3</sup> The Sterling Overnight Index Average "SONIA" is the Working Group on Sterling Risk Free Reference Rates' preferred successor for sterling LIBOR. For more information about SONIA, see <https://www.bankofengland.co.uk/markets/sonia-benchmark>.

<sup>4</sup> Interest periods in SOFR FRNs are generally defined as quarterly from, and including, an interest period end date (or, in the case of the first interest period, the interest commencement date) to, but excluding, the following interest period end date (or, in the case of the final interest period, the maturity date or, if the notes are redeemed, the redemption date).

<sup>5</sup> The FRBNY is currently publishing three daily compounded averages of SOFR: "30-day Average SOFR", "90-day Average SOFR", and "180-day Average SOFR" in addition to a daily SOFR Index. The FRBNY's 30-, 90- and 180- day Average SOFR publications are more easily used "*in advance*" of an FRN interest period at this time. This is because such averages would become misaligned with interest periods when used "*in arrears*" if the interest periods, like most FRNs, are anchored to a particular calendar day (with a business day convention), such as the 15<sup>th</sup> day of the first month of the quarter.

**Response:** The ARRC FRN Working Group recommends daily resets (on U.S. Government Securities Business Days), consistent with most existing SOFR FRNs. The SOFR Index incorporates these daily resets.

**Question 3.8:** *Should a Treasury SOFR-indexed FRN incorporate a lockout (i.e., last k rates for an interest period set at SOFR k days before the period ends), a lookback or “lag” (i.e., for every day in the interest period, use SOFR from k days earlier), or a payment delay (i.e., coupon and principal payments made k days after the end of the interest period) in its structure? If so, what values would be appropriate for each attribute? Please explain relevant considerations for these features.*

**Response:** The ARRC FRN Working Group provides relevant considerations and notes below regarding the lockout, lookback and payment delay.

The ARRC FRN Working Group notes the following considerations regarding a **lockout**:

- A lockout repeats certain SOFR resets at the end of each interest period, therefore a meaningful number of SOFR resets in the life of the bond are being excluded from the interest calculation.
- This could be material to the extent that SOFR is volatile (e.g. the rate spikes on or before the days that are skipped or suspended at a prior rate).
- For this reason, the ARRC FRN Working Group recommends structures that do not utilize a lockout at the end of each interest period.
- As referenced above, market participants appear to disfavor the lockout convention.

The ARRC FRN Working Group notes the following considerations regarding a **lookback**:

- In the previously mentioned survey by The Credit Roundtable, 75% of respondents, who were mostly buy-side FRN market participants, expressed a strong preference for the “lookback with observation period shift” (as described below) over a “payment delay” structure.<sup>6</sup>
- A lookback allows parties additional time to calculate accrued amounts based on the SOFR rate published for a prior day, which is especially beneficial in the event that SOFR is temporarily unavailable or must be revised.
- A structure with a lookback avoids the need for a lockout and therefore avoids the risk of locking the rate on a date when the SOFR rate is unusually volatile.
- The use of a lookback also allows parties to calculate accrued interest for secondary market trades a number of days before settlement (i.e., the day that accrued interest can be calculated depends upon the length of the lookback period).
- Using a lookback that also shifts the SOFR observation period has a number of benefits. With this structure, the period over which SOFR is observed is “backward-shifted” (e.g., with a two-business day shift, the observation period would start and end two U.S. business days prior to interest period start and end dates). The backward-shift applies to both the daily SOFR rates and the weighting of those rates, so the SOFR rate and weighting are determined based on the day of the observation period rather than the day of the interest period.<sup>7</sup> This ensures the appropriate weighting is assigned to each rate depending on its calendar day.

<sup>6</sup> The results of The Credit Roundtable Survey are available at:

[https://cdn.ymaws.com/thecreditroundtable.org/resource/resmgr/surveys&results/crt\\_libor\\_to\\_sofr\\_transition.pdf](https://cdn.ymaws.com/thecreditroundtable.org/resource/resmgr/surveys&results/crt_libor_to_sofr_transition.pdf).

<sup>7</sup> The weighting is intended to account for calendar days on which SOFR is not published and on most days, the weighting of a rate will be equal to “1,” however a daily SOFR that represents a Friday during the Observation Period will generally be given the weight

- Because a lookback with an observation shift uses all SOFR resets (*i.e.*, it is not combined with any lockouts), parties can align FRN interest accruals with uncleared hedges that have established the same SOFR observation period.
- A lookback with a shifted observation period also ensures that the SOFR applied for weekends and holidays is consistent with the repo and swap market.
- In order to utilize the FRBNY published SOFR Index with an FRN that has a lookback, the lookback must be applied *with* an observation period shift. A lookback *without* an observation shift cannot use the SOFR Index.
- The ARRC FRN Working Group published sample key terms for an FRN that utilizes the two-business day lookback with observation shift structure within its publication in support of the SOFR Index.<sup>8</sup>

The ARRC FRN Working Group notes the following considerations about a **payment delay**:

- The standard convention for derivatives referencing SOFR (the OIS convention) is a two-day payment delay, therefore an FRN with a payment day could align with cleared derivatives referencing SOFR, although parties could execute an over-the-counter swap with another convention.
- Accrued interest for secondary market trades with a payment delay cannot be determined prior to settlement. This could be addressed by implementing a separate convention (*e.g.*, a lockout), for secondary trading, however, this would mean that there is a different approach for accrued interest when trading compared to actual accrued interest earned by holding the notes.
- While it could be possible to use the SOFR Index with a payment delay structure, implementation is less straightforward because the last coupon period generally includes a lockout. Interest calculated for a period including a lockout cannot be calculated using the SOFR Index, but instead requires the long-form formula.

**Question 3.9:** *In light of FRBNY’s data contingency procedures for the publication of SOFR, what contingency measures should Treasury consider incorporating into the terms of a SOFR-indexed FRN if SOFR, or an average rate based on SOFR, is temporarily unavailable or revised?*

**Response:** The ARRC FRN Working Group notes that generally FRNs provide that if the daily SOFR rate specified does not appear on a temporary basis, the SOFR published in respect of the first preceding day for which the rate was published should be applied. If the SOFR Index is not published on a temporary basis but the daily SOFR overnight rates continue to be published, the ARRC FRN Working Group suggests that the compounding formula be used to calculate the compounded rate over the relevant observation period. The ARRC FRN Working Group also notes the importance of including robust fallback provisions in the event that SOFR is permanently discontinued. An example of such permanent transition fallback provisions for SOFR are set forth in the ARRC FRN Working Group’s publication titled, “Statement on Use of the SOFR Index.”<sup>9</sup>

**Question 5.1:** *What proportion of likely investors is currently operationally ready to purchase Treasury SOFR-indexed FRNs? For those investors that are not ready, what are the main impediments? How much lead time and investment would be required for additional investors to*

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of “3” (to account for Saturday and Sunday) and a daily SOFR representing the day before a holiday during the Observation Period will also be given a weight greater than 1.

<sup>8</sup> See the Appendix to the “Statement on Use of the SOFR Index” at: [https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/Statement\\_on\\_SOFR\\_Index.pdf](https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/Statement_on_SOFR_Index.pdf).

<sup>9</sup> The fallback provisions are available in Appendix B at: [https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/Statement\\_on\\_SOFR\\_Index.pdf](https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/Statement_on_SOFR_Index.pdf).



*become operationally ready to purchase Treasury SOFR-indexed FRNs? Would any of the security structure choices mentioned in Section 3 above affect the operational readiness of likely investors?*

**Response:** According to The Credit Roundtable's previously referenced survey, about 86% of respondents, mostly buy-side market participants, indicated a willingness to purchase a Treasury SOFR FRN if available in the next few years.<sup>10</sup> While some market participants may not be operationally ready for use of SOFR in FRNs, this survey response implies that many are planning to be ready. The ARRC FRN Working Group believes that the issuance of Treasury FRNs indexed to SOFR could help accelerate external vendor offerings and the internal system readiness of financial institutions to book SOFR-index securities. SOFR readiness by a small number of key vendors will be critical for many market participants.

**Question 5.2:** *To what extent would Treasury's issuance of SOFR-indexed FRNs advance the overall market transition away from U.S. dollar LIBOR? How would different market segments (e.g., FRNs, derivatives, business loans, consumer products) be affected by Treasury's decision to issue SOFR-indexed FRNs? What effect would Treasury's issuance of SOFR-indexed FRNs have on the overall market transition away from LIBOR beyond that caused by current issuance of SOFR-indexed FRNs by other issuers? Please provide specific details of the cause and effect relationships you expect.*

**Response:** A Treasury SOFR-indexed FRN could set a positive example for others to follow suit and reinforce the message that LIBOR is ending. Market participants have expressed a desire for standard structures to support a deeper market and to avoid multiple system enhancements. The FRN market may look to this Treasury issuance as an example, and it could therefore help create consensus around the appropriate structure that should be used for future SOFR FRN issuance. Nevertheless, even if the Treasury does not begin issuing SOFR linked notes at this time, we believe that the market for SOFR-linked FRNs will continue to develop as we move closer to the cessation of LIBOR and as market participants develop the necessary system enhancements.

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## Disclosure

This response has been prepared by the ARRC FRN Working Group for the purpose of highlighting to the Department of the Treasury the potential use of SOFR and existing market conventions. It is provided for informational purposes only and does not constitute a comprehensive outline of all relevant considerations. This statement is not intended in any way to mandate, prescribe or limit the ways in which SOFR may be used in new issuances. The extent to which any market participant decides to implement or adopt any recommendations, practices, or considerations discussed in this response is completely voluntary. Market participants, including those serving on the ARRC FRN Working Group, should make their own independent evaluation and decision about whether and how SOFR should be used in new issuances. Accordingly, nothing herein is intended to be binding on any market participant or give rise to any legal rights or obligations of the ARRC, each of which will decide for itself whether and to what extent to submit individual comments to the Department of the Treasury in response to the Notice.

<sup>10</sup> The results of The Credit Roundtable Survey are available at: [https://cdn.ymaws.com/thecreditroundtable.org/resource/resmgr/surveys&results/crt\\_libor\\_to\\_sofr\\_transition.pdf](https://cdn.ymaws.com/thecreditroundtable.org/resource/resmgr/surveys&results/crt_libor_to_sofr_transition.pdf).

## ALTERNATIVE REFERENCE RATES COMMITTEE

The ARRC appreciates your consideration of these comments and welcomes the opportunity to discuss further. If you have any questions about this matter, please contact [arrc@ny.frb.org](mailto:arrc@ny.frb.org).

Very truly yours,

ARRC FRN Working Group