Brattle Report

REVIEW OF PROPOSED TECHNICAL ADJUSTMENTS TO FALLBACK FORMULAS FOR THE INTERCONTINENTAL EXCHANGE ("ICE") SWAP RATES

PREPARED BY

The Brattle Group

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PREPARED FOR

The International Swaps and Derivatives Association ("ISDA")

Brattle

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Executive Summary

1. ICE Swap Rates represent the mid-market fixed rate for fixed-for-floating interest rate swaps across several tenors that are linked to certain IBOR rates, including U.S. dollar ("USD") LIBOR and British pound ("GBP") LIBOR.

2. Following a series of market consultations, ISDA's Supplement 70 and the associated protocol became effective on January 25, 2021.[1] Supplement 70 and the associated protocol specify the fallback rates for derivatives that explicitly reference IBORs. Derivative contracts that reference the ICE Swap Rates are not covered by ISDA's Supplement 70 to the 2006 ISDA Definitions and the associated protocol.

3. To address fallbacks for derivatives that rely on ICE Swaps Rates, the Working Group on Sterling Risk-Free Reference Rates in the United Kingdom (the "UK Working Group"), and the Alternative Reference Rates Committee in the United States ("ARRC"), published two white papers in the first quarter of 2021 (the "UK Whitepaper" and "US Whitepaper", collectively the "Whitepapers").[2] The Whitepapers propose certain technical adjustments to fallback formulas for the ICE Swaps Rates to make them consistent with the framework of the fallbacks for IBOR derivatives ("IBOR Fallbacks") published in Supplement 70 to the 2006 ISDA Definitions and the associated protocol.

4. This report assesses the fallback formulas for ICE Swap Rates introduced in the two Whitepapers, and evaluates the adjustments presented in such formulas and whether they result in economic changes other than those necessary to account for differences in day count convention and payment frequency between the ICE Swap Rates and the IBOR Fallbacks.[3] While this report assesses the fallback formulas for ICE Swap Rates as presented in the Whitepapers, it is outside the scope of this report to assess the selection of any rate or to endorse a fallback rate methodology and associated adjustments. In

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[1] On October 23, 2020, following a series of consultations with market participants, ISDA launched the IBOR Fallbacks Supplement (Supplement 70) to the 2006 ISDA Definitions and the ISDA 2020 IBOR Fallbacks Protocol. On January 25, 2021, the supplement and the amendments made by the protocol took effect. All new derivatives contracts entered into on or after January 25, 2021 that incorporate the 2006 ISDA Definitions and reference one of the covered IBORs will contain the new fallbacks. Derivatives contracts that existed prior to January 25, 2021 will incorporate the new fallbacks if both counterparties have adhered to the protocol or otherwise bilaterally agreed to include the new fallbacks in their contracts. The protocol will remains open for adherence after January 25, 2021.

[2] "Transition in Sterling Non-Linear Derivatives referencing GBP LIBOR ICE Swap Rate (ISR)," Working Group on Sterling Risk-Free Reference Rates, February 2021, and "Suggested Fallback Formula for the USD LIBOR ICE Swap Rate," Alternative Reference Rates Committee (ARRC), March 2021.

[3] The US Whitepaper refers to these as adjustments. *See*, *e.g.*, US Whitepaper, p. 4 ("The differences in the formulas come from USD and GBP LIBOR swaps having different day count conventions payment frequencies and therefore requiring different adjustments."). The UK Whitepaper refers to these as convexity adjustments. *See*, *e.g.*, UK Whitepaper, ¶ 7 ("…the convexity adjustment calculation to compensate for the varying payment frequencies between the fixed and floating legs of the GBP SONIA ISRs and the GBP LIBOR ISRs.").

particular, ISDA, ISDA's counsel, and Brattle had no role in developing or selecting the fallback methodology for the ICE Swap Rates.

5. The suggested fallback formulas reflect the notion that a replacement rate for ICE Swap Rates can be constructed from the following three components:

    a. A swap rate for which the floating-leg rate of the relevant swap transactions is based on the reference risk-free rate used in the IBOR Fallbacks.

    b. The fixed spread adjustment in the IBOR Fallbacks as determined in Supplement 70 to the 2006 ISDA Definitions and published by Bloomberg Index Services Limited ("BISL").[4]

    c. Adjustments to account for differences in day count convention and in payment frequency.

6. Overall, Brattle's review of the suggested fallback formulas for the ICE Swap Rates finds that the adjustments as proposed in the Whitepapers are necessary to apply additional precision to the spread adjustment calculation to account for difference in day count convention and difference in payment frequency between the ICE Swap Rates and the IBOR Fallbacks. These adjustments do not appear to result in economic changes other than those necessary to apply additional precision to the spread adjustment, and make it consistent with the framework for the IBOR Fallbacks in Supplement 70.

I. Introduction

7. ICE Swap Rates, published by ICE Benchmark Administration ("IBA"), represent the mid-market fixed rate for fixed-for-floating interest rate swaps for a set of tenors and benchmark rates in various currencies.[5]

8. For the U.S. Dollar, the most commonly used version of the ICE Swap Rates ("USD LIBOR ISR") is published around 11 am Eastern time and represents the fixed rate in a fixed-for-floating interest rate swap with the floating leg referencing 3-month USD LIBOR.[6]

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[4] Following an announcement by the UK's Financial Conduct Authority on the future cessation and loss of representativeness of the LIBOR benchmarks, ISDA announced that March 5, 2021 is the spread adjustment fixing date for all LIBOR Tenors across all LIBOR currencies. "ISDA Statement on UK FCA LIBOR Announcement," ISDA, March 5, 2021.

[5] *See, e.g.,* US Whitepaper, p.1 ("The ICE Swap Rates, formerly known as ISDAFIX and sometimes referred to as the CMS (constant-maturity swap) rates, represents the mid-market fixed rate for fixed/float interest rate swaps for a set of tenors at a specified time of the day."), and "About ICE Swap Rate," ICE, accessed April 1, 2021, https://www.theice.com/iba/ice-swap-rate ("The ICE Swap Rate represents the mid-price for interest rate swaps (the fixed leg) and swap spreads (the applicable mid-price minus a corresponding specified government bond yield), in various specified currencies and tenors and at particular specified times of the day.").

[6] IBA also publishes another USD swap rate around 3pm Eastern time, which also represents the fixed rate in a fixed-for-floating interest rate swap with the floating leg referencing 3-month USD LIBOR.

9. The fallback rate for 3-month USD LIBOR under the IBOR Fallbacks is based on the Secured Overnight Financing Rate ("SOFR") compounded in arrears over the applicable 3-month period plus a fixed spread adjustment.[7] It is expected that once the liquidity of swaps referencing SOFR increases on electronic trading venues, the IBA or other vendors will start publishing a swap rate representing swaps based on SOFR ("SOFR SR").[8,9]

10. For the British pound, IBA publishes around 11 am Eastern time the swap rate ("GBP LIBOR ISR") for a fixed-for-floating interest rate swap, where the floating leg references either 3-month GBP LIBOR (when the tenor is one year) or 6-month GBP LIBOR (when the tenor is longer than one year).

11. The fallback rate for 3-month GBP LIBOR under the IBOR Fallbacks is based on the Sterling Overnight Interbank Average Rate ("SONIA") compounded in arrears over the applicable 3-month period plus a fixed spread adjustment.[10] The fallback for 6-month GBP LIBOR is calculated in the same manner over a 6-month period, but the fixed spread adjustment term is different because it is based on historical data related to 6-month GBP LIBOR instead of 3-month GBP LIBOR.[11]

12. The IBA started publishing the GBP SONIA ICE Swap Rate ("SONIA ISR") as a 'beta' rate on October 2, 2020 and as a 'live' benchmark on December 15, 2020.[12] The SONIA ISR represents the fixed rate in a standard fixed-for-floating interest rate swap with the floating leg referencing SONIA compounded in arrears for twelve months.[13]

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[7] US Whitepaper, p.5 ("…the fallback for 3m LIBOR in ISDA Supplement 70 is SOFR compounded in arrears plus a fixed spread adjustment…").

[8] US Whitepaper, p.2 ("It is expected that once SOFR swap liquidity increases on electronic trading venues, the IBA or other vendors will start publishing a SOFR version of these Swap Rates. In this paper, we will refer to the 1100 USD LIBOR ICE Swap Rate as the 'LIBOR ISR' and to the expected SOFR Swap Rate as the 'SOFR SR'.").

[9] For example, on April 21, 2021 the CME Group announced that it is publishing CME Term SOFR Reference Rates for 1-month, 3-month and 6-month tenors. "CME Group Announces Launch of CME Term SOFR Reference Rates," CME Group, April 21, 2021, accessed April 26, 2021, https://www.cmegroup.com/media-room/press-releases/2021/4/21/cme_group_announceslaunchofcmetermsofrreferencerates.html.

[10] The fixed spread adjustment is calculated based on the median of a set of historical differences between the 3-month GBP LIBOR and the SONIA rate compounded in arrears that corresponds to a 3-month tenor over a five-year period. "ISDA Publishes Results of Consultation on Final Parameters for Benchmark Fallback Adjustments," ISDA, November 15, 2019, accessed April 26, 2021, https://www.isda.org/2019/11/15/isda-publishes-results-of-consultation-on-final-parameters-for-benchmark-fallback-adjustments/. "Summary of Responses to the ISDA Consultation on Final Parameters for the Spread and Term Adjustments," The Brattle Group, November 15, 2019, accessed April 26, 2021, http://assets.isda.org/media/3e16cdd2/d1b3283f-pdf/.

[11] The fixed spread adjustment is calculated based on the median of a set of historical differences between the 6-month GBP LIBOR and the SONIA rate compounded in arrears that corresponds to a 6-month tenor over a five-year period. "ISDA Publishes Results of Consultation on Final Parameters for Benchmark Fallback Adjustments," ISDA, November 15, 2019, accessed April 26, 2021, https://www.isda.org/2019/11/15/isda-publishes-results-of-consultation-on-final-parameters-for-benchmark-fallback-adjustments/. "Summary of Responses to the ISDA Consultation on Final Parameters for the Spread and Term Adjustments," The Brattle Group, November 15, 2019, accessed April 26, 2021, http://assets.isda.org/media/3e16cdd2/d1b3283f-pdf/.

[12] UK Whitepaper, ¶ 4. US Whitepaper, footnote 2.

[13] "ICE Swap Rate," ICE, accessed April 25, 2021, https://www.theice.com/iba/ice-swap-rate.

13. This report refers to fixed-for-floating interest rate swaps that reference LIBOR rates in the floating leg as "LIBOR Swaps," and refers to those that reference SOFR or SONIA compounded in arrears in the floating leg as "RFR Swaps." Table 1 summarizes the different rates referenced in LIBOR Swaps and RFR Swaps.

TABLE 1: LIBOR SWAPS AND RFR SWAPS

		USD	GBP (Tenor = 1 Yr)	GBP (Tenor > 1 Yr)
LIBOR Swaps	Fixed Leg	LIBOR ISR	LIBOR ISR	LIBOR ISR
	Floating Leg	3m LIBOR	3m LIBOR	6m LIBOR
RFR Swaps	Fixed Leg	SOFR SR	SONIA ISR	SONIA ISR
	Floating Leg	SOFR Compounded in Arrears	SONIA Compounded in Arrears	SONIA Compounded in Arrears

Source: "ICE Swap Rate," ICE, accessed April 1, 2021, https://www.theice.com/iba/ice-swap-rate, and US Whitepaper, p.5.

14. Contracts referencing USD LIBOR ISRs or GBP LIBOR ISRs (collectively, "LIBOR ISRs")—and therefore indirectly linked to USD or GBP LIBOR rates—are not covered by the IBOR Fallbacks in Supplement 70 to the 2006 ISDA Definitions or prior fallback language recommended by the ARRC or the UK Working Group. Given that the fallback for USD LIBOR and GBP LIBOR is SOFR and SONIA compounded in arrears plus a fixed spread adjustment, respectively, it may appear that applying the same fixed spread adjustment to the SOFR SR or SONIA ISR (collectively, "RFR SRs") would be sufficient when determining the fallback for LIBOR ISRs.

15. However, such an approach does not account for the difference in day count convention or the difference in payment frequency between the LIBOR Swaps and RFR Swaps that are represented by the LIBOR ISRs and the RFR SRs, respectively. The ARRC and the UK Working Group have recently published suggested fallback formulas for USD LIBOR ISR and GBP LIBOR ISR, respectively. Both sets of formulas— derived in a similar manner—account for the difference in day count convention and the difference in payment frequency. This report reviews these suggested fallback formulas.

16. Brattle has been asked to assess whether the adjustments to these formulas, as postulated in the Whitepapers, is a fair and reasonable way to address the issues presented by differences in day count convention and in payment frequency between the LIBOR Swaps and the RFR Swaps. Brattle has not been asked to assess whether those recommendations and other opinions or recommendations made by the ARRC and the UK Working Group in the Whitepapers are appropriate.

II. Review of the Suggested Fallback Formulas for USD LIBOR ISR and GBP LIBOR ISR

17. In developing a fallback formula for the USD LIBOR ISR, the ARRC relied on the following three key principles:[14]

    a. Consistency with the fallback for LIBOR rates used in the IBOR Fallbacks in Supplement 70 to the 2006 ISDA Definitions;

    b. Avoidance of value transfers and of disincentives to adopt the suggested fallback formula; and

    c. Simplicity and transparency by using a closed-form formula with the SOFR SR as the only variable input.

    The suggested fallback formula for the GBP LIBOR ISR indicates that the UK Working Group relied on similar principles.

18. Conceptually, a replacement for LIBOR ISR can be constructed from the following three components:

    a. The RFR SR for the same currency and same tenor.

    b. The fixed spread adjustment, published by Bloomberg and applicable to USD LIBOR and GBP LIBOR fallbacks in Supplement 70 to the 2006 ISDA Definitions.

    c. Adjustments to account for the difference in day count convention and for the difference in payment frequency between the fixed and floating legs of LIBOR Swaps and RFR Swaps.

19. This section first reviews differences in day count conventions and payment frequencies and then reviews the fallback formulas for USD LIBOR ISR suggested by the ARRC, and the fallback formula for GBP LIBOR ISR suggested by the UK Working Group.

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[14] US Whitepaper, p.5.

A. Day Count Convention and Payment Frequencies in LIBOR Swaps and RFR Swaps

20. Table 2 summarizes the day count convention used in LIBOR Swaps and RFR Swaps. USD LIBOR Swaps use the 30/360 convention in the fixed leg and the ACT/360 convention in the floating leg.[15] USD RFR Swaps (which reference SOFR compounded in arrears in the floating leg) use the ACT/360 convention in both the fixed leg and the floating leg.[16]

21. On the other hand, there is no difference in day count convention between GBP LIBOR Swaps and GBP RFR Swaps (which reference SONIA compounded in arrears in the floating leg), as both use the ACT/365 convention in both the fixed leg and the floating leg.[17]

TABLE 2: DAY COUNT CONVENTION OF LIBOR SWAPS AND RFR SWAPS

		USD	GBP (Tenor = 1 Yr)	GBP (Tenor > 1 Yr)
LIBOR Swaps	Fixed Leg	30/360	ACT/365	ACT/365
	Floating Leg	ACT/360	ACT/365	ACT/365
RFR Swaps	Fixed Leg	ACT/360	ACT/365	ACT/365
	Floating Leg	ACT/360	ACT/365	ACT/365

Source: "ICE Swap Rate," ICE, accessed April 1, 2021, https://www.theice.com/iba/ice-swap-rate; UK Whitepaper, ¶ 9; and US Whitepaper, p.4.

22. Table 3 summarizes the payment frequency of LIBOR Swaps and RFR Swaps. The fixed leg in USD LIBOR Swaps pays semi-annually and the floating leg pays quarterly. Both the fixed leg and the floating leg in USD RFR Swaps pay annually.[18]

23. For GBP LIBOR Swaps, payment frequency depends on the tenor. When tenor is one year, the fixed leg in GBP LIBOR Swaps pays annually and the floating leg pays quarterly. When tenor is longer than one

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[15] The 30/360 convention assumes 30 days per month and 360 days per year when carrying out interest payment calculations. The ACT/360 convention assumes 360 days per year. The interest earned during part of a year is calculated by dividing the actual number of elapsed days by 360 and multiplying by the rate. *See*, *e.g.*, John C. Hull, *Options, Futures, and Other Derivatives, 8th Edition*, (Prentice Hall, 2012), 129-130.

[16] US Whitepaper, p.2 ("We will also make the following assumptions in laying out the suggested formula below: … The convention for the swaps whose levels are used to compute the SOFR SR will be annual payment with an ACT/360 day count convention on both the fixed and the floating leg").

[17] The ACT/365 convention assumes 365 days per year. The interest earned during part of a year is calculated by dividing the actual number of elapsed days by 365 and multiplying by the rate. *See*, *e.g.*, "LIBOR: Frequently Asked Questions," ICE, accessed April 26, 2021, https://www.theice.com/publicdocs/IBA_LIBOR_FAQ.pdf.

[18] US Whitepaper, p.2 ("We will also make the following assumptions in laying out the suggested formula below: … The convention for the swaps whose levels are used to compute the SOFR SR will be annual payment with an ACT/360 day count convention on both the fixed and the floating leg").

year, both the fixed leg and the floating leg in GBP LIBOR Swaps pay semi-annually. Finally, both the fixed leg and the floating leg in GBP RFR Swaps pay annually.

TABLE 3: PAYMENT FREQUENCY OF LIBOR SWAPS AND RFR SWAPS

		USD	GBP (Tenor = 1 Yr)	GBP (Tenor > 1 Yr)
LIBOR Swaps	Fixed Leg	Semi-annual	Annual	Semi-annual
	Floating Leg	Quarterly	Quarterly	Semi-annual
RFR Swaps	Fixed Leg	Annual	Annual	Annual
	Floating Leg	Annual	Annual	Annual

Source: "ICE Swap Rate," ICE, accessed April 1, 2021, https://www.theice.com/iba/ice-swap-rate; UK Whitepaper, ¶ 9; and US Whitepaper, p.4.

24. After reviewing the formulas suggested by the ARRC and the UK Working Group, Brattle did not identify any circumstances that would suggest a meaningful value transfer from adopting the suggested fallback approach. The next two subsections review those suggested fallback formulas.

B.   The Suggested Fallback Formula for USD LIBOR ISR

25. The fallback for USD LIBOR ISR suggested by the ARRC is calculated as[19]

$$\frac{365.25}{360} \times [2 \times (\sqrt{1 + SOFR\ SR} - 1) + s_{3m} \times \frac{1}{2} \times (\sqrt[4]{1 + SOFR\ SR} + 1)] \qquad (1)$$

where $SOFR\ SR$ is defined as above and s_{3m} is the fixed spread adjustment for 3-month USD LIBOR determined as in Supplement 70 to the 2006 ISDA Definitions.

26. The mathematical derivation of Formula (1) is discussed in detail in the US Whitepaper.[20] Intuitively, the term $\frac{365.25}{360}$ is an approximation for the ACT/360 convention, as there are on average 365.25 actual days in a calendar year after accounting for leap years.[21]

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[19] US Whitepaper, p.5. In addition, this suggested formula assumes that, among other things, the SOFR SR is computed based on the ACT/360 day count convention with an annual payment frequency on both the fixed and the floating leg. *See* US Whitepaper, p. 2 ("We will also make the following assumptions in laying out the suggested formula below: … The convention for the swaps whose levels are used to compute the SOFR SR will be annual payment with an ACT/360 day count convention on both the fixed and the floating leg"). *See* also US Whitepaper, p. 6 ("This formula is not intended to be used if the SOFR SR is computed at a different time or is based on a swap with a different day count convention or a different payment frequency than assumed in this document.").

[20] US Whitepaper, pp.5-8.

[21] US Whitepaper, p.6 ("…total of 365.25 days per year on average after accounting for leap years…").

27. Applying the term $\frac{365.25}{360}$ to the first term inside the square bracket in Formula (1) yields $\frac{365.25}{360} \times 2 \times (\sqrt{1 + SOFR\ SR} - 1)$. It represents the SOFR SR component of the fallback for USD LIBOR ISR. It also accounts for the difference in the day count convention and payment frequency between the fixed leg in a USD LIBOR Swap (which pays semi-annually on the 30/360 convention) and the fixed leg in a USD RFR Swap (which pays annually on the ACT/360 convention).[22]

28. Applying the term $\frac{365.25}{360}$ to the second term inside the square bracket in Formula (1) yields $\frac{365.25}{360} \times s_{3m} \times \frac{1}{2} \times (\sqrt[4]{1 + SOFR\ SR} + 1)$. It represents the fixed spread adjustment component of the fallback for 3-month USD LIBOR. It also accounts for the difference in the day count convention and payment frequency between the fixed leg in a USD LIBOR Swap (which pays semi-annually on the 30/360 convention) and the floating leg in a USD LIBOR Swap (which pays quarterly on the ACT/360 convention).[23]

29. The fallback formula suggested by the ARRC as in Formula (1) is a fair and reasonable way to address the differences in day count convention and payment frequency. These adjustments appear necessary for technical reasons to avoid value transfer and disincentives in adopting the suggested fallback formula.

C. The Suggested Fallback Formula for GBP LIBOR ISR

30. The fallback for GBP LIBOR ISR suggested by the UK Working Group is calculated as:[24]

$$
\begin{cases}
SONIA\ ISR + s_{3m} \times \dfrac{(\sqrt[4]{1 + SONIA\ ISR} + 1)(\sqrt{1 + SONIA\ ISR} + 1)}{4} & if\ tenor = 1\ year \\
2 \times \left(\sqrt{1 + SONIA\ ISR} - 1\right) + s_{6m} & if\ tenor > 1\ year
\end{cases}
\tag{2}
$$

where $SONIA\ ISR$ is defined as above, and s_{3m} and s_{6m} are the fixed spread adjustment for 3-month and 6-month GBP LIBOR under the IBOR Fallbacks in Supplement 70 to the 2006 ISDA Definitions, respectively.

31. The mathematical derivation of Formula (2) is discussed in detail in the UK Whitepaper.[25] As discussed above, there is no difference in day count convention between GBP LIBOR Swaps and GBP RFR Swaps. Therefore, the fallback formula only needs to adjust for the difference in payment frequency. In addition, the suggested fallback formula is different depending on whether the tenor is one year or longer than one year.

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[22] US Whitepaper, pp.7-8.
[23] US Whitepaper, pp.7-8.
[24] UK Whitepaper, ¶ 8.
[25] UK Whitepaper, ¶¶ 7-20.

32. When the tenor is one year, the first term in Formula (2) is simply the SONIA ISR without any adjustment. This is because, unlike in the case of USD swaps discussed above, there is no difference in the payment frequency between the fixed leg in a GBP LIBOR Swap and the fixed leg in a GBP RFR Swap (they both pay annually). The second term represents the fixed spread adjustment component of the fallback for 3-month GBP LIBOR. It also accounts for the difference in payment frequency between the fixed leg in a GBP LIBOR Swap (which pays annually) and the floating leg in a GBP LIBOR Swap (which pays quarterly).

33. When the tenor is longer than one year, the first term in Formula (2) represents the SONIA ISR component of the fallback for GBP LIBOR ISR. It also accounts for the difference in the payment frequency between the fixed leg in a GBP LIBOR Swap (which pays semi-annually) and the fixed leg in a GBP RFR Swap (which pays annually). The second term represents the fixed spread adjustment component of the fallback for 6-month GBP LIBOR. Since there is no difference in the payment frequency between the fixed leg and the floating leg in a GBP LIBOR Swap (both of which pay semi-annually), no further adjustment is needed.

34. The fallback formula suggested by the UK Working Group as in Formula (2) is a fair and reasonable way to address the difference in payment frequency. These adjustments appear necessary for technical reasons to avoid value transfer and disincentives in adopting the suggested fallback formula.

D. Potential Implementation Considerations

35. As discussed above, the Whitepapers focus on the technical adjustments to the fallback formulas for the USD LIBOR ISR and the GBP LIBOR ISR. A potential implementation consideration of the suggested fallback formulas—although outside the scope of the Whitepapers—is regarding the rounding (e.g., level of accuracy) of calculated values for the USD LIBOR ISR and GBP LIBOR ISR fallbacks. Currently, all the ICE Swap Rates (including the USD LIBOR ISR, the GBP LIBOR ISR, and the newly introduced SONIA ISR) are rounded to three decimal places for publication.[26] The terms related to the fixed spread adjustments in Formula (1) for USD LIBOR are published by BISL and are rounded to five decimal places.[27] Given that the higher level of precision of the two necessary inputs (SOFR SR and the USD LIBOR fixed spread adjustments) is five decimal places, it is reasonable that an implementation of the suggested fallback formula for USD LIBOR ISR and its potential publication would also be based on five decimal places. For GBP LIBOR, the terms related to the fixed spread adjustments in Formula (2) are published by BISL and

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[26] *See*, *e.g.*, "Calculation of ICE Swap Rate from Tradeable Quotes," ICE, accessed May 3, 2021, https://www.theice.com/publicdocs/ICE_Swap_Rate_Full_Calculation_Methodology.pdf.

[27] *See*, *e.g.*, "IBOR Fallback Rate Adjustments Rule Book," Bloomberg, April 22, 2020 (last updated October 8, 2020), accessed May 4, 2021, https://data.bloomberglp.com/professional/sites/10/IBOR-Fallback-Rate-Adjustments-Rule-Book.pdf; and "IBOR Fallbacks Technical Note - Spread Fixing Event for LIBOR," Bloomberg, March 5, 2021, accessed May 3, 2021, https://assets.bbhub.io/professional/sites/10/IBOR-Fallbacks-LIBOR-Cessation_Announcement_20210305.pdf.

are rounded to four decimal places.[28] Given that the higher level of precision of the two necessary inputs (SONIA ISR and the GBP LIBOR fixed spread adjustments) is four decimal places, it is reasonable that an implementation of the suggested fallback formula for GBP LIBOR ISR and its potential publication would also be based on four decimal places. In other words, it is reasonable to round the USD LIBOR ISR and GBP LIBOR ISR calculated fallbacks to five decimal places and four decimal places, respectively, in a potential implementation.

III. Conclusion

36. ICE Swap Rates represent the mid-market fixed rate for fixed-for-floating interest rate swaps across several tenors that are linked to certain IBOR rates, including the USD LIBOR and the GBP LIBOR. ISDA's Supplement 70 and the associated protocol do not cover derivative contracts that reference the ICE Swap Rates. To address fallbacks for derivatives that rely on ICE Swaps Rates, the UK Working Group and the ARRC each published a Whitepaper for GBP ICE Swap Rates and for USD ICE Swap Rates, respectively, in the first quarter of 2021. These Whitepapers propose certain technical adjustments to fallback formulas for the ICE Swap Rates to make them consistent with the framework of IBOR Fallbacks published in Supplement 70 to the 2006 ISDA Definitions and the associated protocol. The adjustments found in the two Whitepapers are a fair and reasonable way to account for differences in day count conventions and payment frequencies between the transactions referenced in the LIBOR ISRs and the RFR SRs, and result in applying additional precision to the spread adjustment calculation. These adjustments are consistent with the framework of IBOR Fallbacks in Supplement 70 to the 2006 ISDA Definitions. Brattle did not identify any circumstances that would suggest a meaningful value transfer from adopting the suggested fallback approach for the USD LIBOR ISR and GBP LIBOR ISR.

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[28] *See, e.g.*, "IBOR Fallback Rate Adjustments Rule Book," Bloomberg, April 22, 2020 (last updated October 8, 2020), accessed May 4, 2021, https://data.bloomberglp.com/professional/sites/10/IBOR-Fallback-Rate-Adjustments-Rule-Book.pdf; and "IBOR Fallbacks Technical Note - Spread Fixing Event for LIBOR," Bloomberg, March 5, 2021, accessed May 3, 2021, https://assets.bbhub.io/professional/sites/10/IBOR-Fallbacks-LIBOR-Cessation_Announcement_20210305.pdf.