REFINITIV BENCHMARK SERVICES (UK) LIMITED

USD IBOR INSTITUTIONAL CASH FALLBACKS BENCHMARK

USD IBOR CONSUMER CASH FALLBACKS (1 WEEK, 2 MONTHS) BENCHMARK

BENCHMARK STATEMENT

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1. INTRODUCTION

The USD IBOR Institutional Cash Fallbacks benchmark and the USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) benchmark (together the "Benchmarks") were launched on November 26th 2021 and January 3rd 2022 respectively to provide fallback rates for existing financial products such as adjustable bilateral business loans, floating rate notes, securitizations, syndicated loans, adjustable rate mortgages and variable rate private student loans that currently reference US dollar (USD) LIBOR. ICE LIBOR® and LIBOR® are registered trademarks of ICE Benchmark Administration Limited (IBA) and are used by Refinitiv with permission under licence by IBA.

The UK Financial Conduct Authority (FCA) has confirmed that LIBOR settings including USD LIBOR settings will either cease to be provided by any administrator or no longer be representative[1]:

- Immediately after December 31st 2021, in the case of all sterling, euro, Swiss franc and Japanese yen settings, and the 1-week and 2-month US dollar settings, and
- Immediately after June 30th 2023, in the case of the remaining US dollar settings

On March 17th 2021, the Alternative Reference Rates Committee (ARRC) announced[2] that it had selected Refinitiv to publish its recommended spread adjustments and spread-adjusted rates for cash products that transition away from USD LIBOR. The Benchmarks provide such spread adjustments and spread-adjusted rates for institutional cash products and for consumer cash products that reference the 1-week and 2-month LIBOR® tenors that ceased to be published immediately after December 31st 2021. Refinitiv will release similar rates for consumer cash products in due course for the remaining LIBOR tenors once they cease to be published immediately after June 30th 2023.

The Benchmarks are fallback rates for USD LIBOR in institutional and consumer cash products that are based on (i) SOFR[3] and SOFR averages[4] published by the Federal Reserve Bank of New York on every SIFMA business day and (ii) the average USD LIBOR® to SOFR spread calculated in accordance with the ISDA USD LIBOR® fallback rate methodology (Spread Adjustment). Following the FCA announcement regarding the cessation and non-representativeness of USD LIBOR settings, the Spread Adjustment for each USD LIBOR tenor was permanently fixed as of March 5th 2021. The USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) benchmark includes a transition period from Monday January 3rd 2022 to Friday December 30th 2022 during which the Spread Adjustment is a linearly interpolated daily spread derived using an initial spread and the final spread calculated in accordance with the ISDA USD LIBOR fallback rate methodology.

The Secured Overnight Financing Rate, SOFR, and the SOFR averages are the only dynamic input data for the USD IBOR Institutional Cash Fallbacks benchmark. SOFR is a robust trade-based overnight benchmark representing repo transactions secured with US Treasuries. It is administered by the Federal Reserve Bank of New York using a volume weighted median methodology and typically represents transactions with an aggregate volume at or in excess of USD900 billion per day as of November 2021.

[1] www.fca.org.uk/publication/documents/future-cessation-loss-representativeness-libor-benchmarks.pdf
[2] www.newyorkfed.org/medialibrary/Microsites/arrc/files/2021/20210317-press-release-Spread-Adjustment-Vendor-Refinitiv.pdf
[3] www.newyorkfed.org/markets/reference-rates/sofr
[4] www.newyorkfed.org/markets/reference-rates/sofr-averages-and-index

Increased adoption of the Benchmarks is anticipated as the non-representativeness date for the most widely used USD LIBOR tenors approaches and a spread adjusted Term SOFR version is introduced. In its Progress Report[5] published March 2021, the ARRC estimated that there is around USD5.1 trillion of cash products that currently reference USD LIBOR that will mature after June 30th 2023. This comprises USD2.3 trillion of business loans, USD0.9 trillion of consumer loans, USD0.3 trillion of bonds and USD1.6 trillion of securitizations.

The ARRC noted in its Progress Report published March 2021 that over the preceding two years, use of the ARRC's recommended fallbacks or similar language has been fairly prevalent in most new issuances of cash products. To handle legacy financial products that lack suitable fallback language for a permanent cessation of USD LIBOR, state legislators with support from the ARRC have enacted new legislation into New York law[6] and Alabama law which reduces the adverse economic outcomes associated with legacy LIBOR fallback language for contracts governed by those laws. Where the contract has no fallback or the fallback is based upon LIBOR, the new legislation provides that upon LIBOR cessation, the contract will transition to a SOFR-based rate recommended by the ARRC.Consequently, uptake of the USD IBOR Institutional Cash Fallbacks benchmark as a fallback in existing institutional cash products is developing and following June 30th 2023 after which there will be no representative USD LIBOR tenors remaining, a proportion of institutional cash products is expected to transition from USD LIBOR to the USD IBOR Institutional Cash Fallbacks benchmark.

Refinitiv Benchmark Services (UK) Limited (RBSL) is the administrator of the USD IBOR Institutional Cash Fallbacks benchmark and the USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) benchmark. The Benchmarks are subject to the UK Benchmark Regulation (BMR). RBSL has adopted policies and procedures to comply with these regulations. As of their respective launches, the USD IBOR Institutional Cash Fallbacks benchmark and the USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) benchmark are considered non-significant benchmarks for the purposes of the BMR.

The USD IBOR Institutional Cash Fallbacks benchmark comprises two types of rates: In-Advance and In-Arrears. The USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) benchmark comprises one type of rate: In-Advance.

The In-Advance USD IBOR Institutional Cash Fallbacks consist of three tenors (1-, 3- and 6-months) and are the sum of the SOFR averages (30-, 90- and 180-days) and the Spread Adjustment of corresponding tenor. The In-Advance Fallbacks are published on every day that the Federal Reserve Bank of New York publishes the SOFR averages.

The In-Advance USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) consist of two tenors (1-week and 2-months) and are the sum of one SOFR averages (30-days) and the Spread Adjustment for the 1-week and 2-months tenors.

The In-Arrears USD IBOR Institutional Cash Fallbacks consist of seven tenors (O/N, 1-week and 1-, 2-, 3-, 6- and 12-months) and are the sum of (i) the average of SOFR over an interest accrual period corresponding to a USD LIBOR accrual period (except that for the O/N tenor, a single SOFR value is used) and (ii) the Spread Adjustment of corresponding tenor. A variety of lookback and lockout versions together with versions based on compounded and simple averages of SOFR are included in the Benchmark. Each In-Arrears Fallbacks is published toward the end of the interest accrual period that follows the publication of the corresponding USD LIBOR setting once the final required daily SOFR rate has been published by the Federal Reserve Bank of New York.

[5] www.newyorkfed.org/medialibrary/Microsites/arrc/files/2021/USD-LIBOR-transition-progress-report-mar-21.pdf
[6] www.newyorkfed.org/medialibrary/Microsites/arrc/files/2021/20210407-arrc-press-release-nys-legislation

The USD IBOR Institutional Cash Fallbacks benchmark and the USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) benchmark are considered to be reliable fallback rates provided that the Federal Reserve Bank of New York continues to publish SOFR and the SOFR averages.

This benchmark statement shall be reviewed at least every two years, or whenever there is a material change to either the type of the Benchmarks or to the Methodology used in the determination of the Benchmarks.

2. OVERVIEW OF METHODOLOGY[7]

The three In-Advance USD IBOR Institutional Cash Fallbacks are the sum of the SOFR averages (30-, 90- and 180-days) and the Spread Adjustment of corresponding tenor.

The two In-Advance USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) are the sum of the 30-day SOFR average and the Spread Adjustment for the 1-week and 2-months tenors. During the transition period for the USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) from Monday January 3rd 2022 to Friday December 30th 2022, the Spread Adjustment is a linearly interpolated daily spread derived using an initial spread and the final spread calculated in accordance with the ISDA USD LIBOR® fallback rate methodology.

The In-Advance Fallbacks are published at approximately 08:20am ET on every day that the Federal Reserve Bank of New York publishes the SOFR averages.

The In-Arrears USD IBOR Institutional Cash Fallbacks consist of seven tenors (O/N, 1-week and 1-, 2-, 3-, 6- and 12-months) and are the sum of (i) the average of SOFR over an interest accrual period corresponding to a USD LIBOR accrual period (Adjusted SOFR) and (ii) the Spread Adjustment.

For the O/N tenor, the single SOFR rate corresponding to the date on which a USD LIBOR O/N setting is published (or, following the cessation date for a representative USD LIBOR O/N setting, the date on which a USD LIBOR O/N setting would typically be published) is used as the Adjusted SOFR.

For the 1-week to 12-months tenors, an interest accrual period following the date on which a USD LIBOR setting is published (or, following the cessation date for a representative USD LIBOR, the date on which a USD LIBOR setting would typically be published i.e. a London business day) and is defined as from and including the usual settlement date for a USD LIBOR-type deposit up to and including the maturity of that deposit. The start date is two London business days following the publication of the USD LIBOR setting subject to that date being both a London and SIFMA business day (and if it is not, the start date is rolled forward to the first subsequent date that is). The end date is then the start date plus the tenor of the USD LIBOR setting. For the 1-week tenor, if the end date is not both a London and SIFMA business day, it is rolled forward to the first subsequent day that is. For the 1M-12M tenors if the end date is not both a London and SIFMA business day, it is adjusted to the nearest day that is both a London and SIFMA business day subject to the modified following day adjustment convention.

For the 1-week to 12-months tenors, two Adjusted SOFR values are calculated for the interest accrual period: (i) the compounded average of SOFR and (ii) the simple average of SOFR. Both are expressed on an annualized basis. The Adjusted SOFR can only be determined once the final required daily SOFR rate is published by the Federal Reserve Bank of New York and this occurs toward the end of an interest accrual period.

[7] For further information and definitions, please to refer to the methodology at www.refinitiv.com/USDIBORCashFallbacks

A variety of lookback and lockout versions of Adjusted SOFR are calculated according to tenor as follows:

Tenor	No Lookback or Lockout	Lookback (no observation shift)	Lookback (with observation shift)	Lockout
O/N	✓	-	-	-
1W	✓	3 days	2 and 3 days	2 and 3 days
1M	✓	3, 5 and 10 days	2, 3 and 5 days	2 and 3 days
2M	✓	3, 5 and 10 days	2, 3 and 5 days	2 and 3 days
3M	✓	3, 5 and 10 days	2, 3 and 5 days	2 and 3 days
6M	✓	3, 5 and 10 days	2, 3 and 5 days	2 and 3 days
12M	✓	3, 5 and 10 days	2, 3 and 5 days	2 and 3 days
Compounded Rates	6	16	17	12
Simple Rates	7	16	17	12
Total Rates	13	32	34	24

Once an Adjusted SOFR has been calculated in respect of a USD LIBOR setting of a specific tenor and publication date (or, following the cessation date for a representative USD LIBOR, the date on which a USD LIBOR setting would typically be published), the Spread Adjustment of corresponding tenor is added to produce the all-in In-Arrears USD IBOR Institutional Cash Fallbacks setting.

Daily input data are SOFR and the SOFR averages only. Publication of an In-Arrears USD IBOR Institutional Cash Fallbacks setting occurs at approximately 08:20am ET on the day that the final required daily SOFR value is published by the Federal Reserve Bank of New York.

RBSL may at its discretion delay publication of the Benchmarks in the event that technical difficulties prevent receipt of input data or if RBSL has reason to believe that either the input data or the determination of the Benchmarks includes a potential error. In such cases, all reasonable efforts will be made to publish the Benchmarks at the earliest opportunity. If the potential error cannot be resolved or rectified, “No Fix” will be published for the affected tenor(s) and setting(s).

If following publication, a material error is identified in the input data or the determination of the Benchmarks before 09:30am ET, RBSL will refix the Benchmarks. A material error is one that results in a change of + or – 0.1 basis points to the published value of the Benchmarks.

The only interpolation used by RBSL when determining the Benchmarks is to determine the Spread Adjustment for the two In-Advance USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) during the transition period. No models or method of extrapolation are used by RBSL when determining the Benchmarks. Further, the Benchmarks are not determined by means of a portfolio of constituents. No discretion or expert judgment is exercised by RBSL in the determination of the Benchmarks.

The Benchmarks do not have corresponding ISINs. The Benchmarks are determined using readily available input data and are not based on contributed input data. Consequently, the Benchmarks are not any of the following types of benchmark as specifically defined by the BMR: regulated data, interest rate or commodity. Further, RBSL considers that the Federal Reserve Bank of New York as administrator of SOFR and the SOFR averages which themselves comprise multiple transactions among many market participants ensures reliable and representative input data and avoids concentration of input data.

3. POTENTIAL LIMITATIONS OF THE BENCHMARKS

The primary potential limitation of the Benchmarks is the ongoing availability of SOFR and the SOFR averages from the Federal Reserve Bank of New York. SOFR and the SOFR averages are robust benchmarks based on a high volume of transactions in markets involving many participants. The design of the Benchmarks is therefore resilient in a wide range of market conditions. However, technical problems or an extreme market event leading to a loss of liquidity in the underlying US Treasury repo market represented by SOFR and inhibiting the availability of sufficient input data for the determination of the Benchmarks may result in a "No Fix" being issued.

4. METHODOLOGY CHANGES AND BENCHMARK CESSATION

The USD IBOR Institutional Cash Fallbacks benchmark Methodology has been adopted as being a reliable and resilient means for providing a benchmark that complies with the ARRC's requirements and serves as a fallback for USD LIBOR in institutional and consumer cash products.

The Methodology is subject to a review in order to assess its ongoing fitness for purpose on at least an annual basis. In the event that the review leads RBSL to believe that a change to the Methodology is required and that the change is material in its effect on the Benchmarks, a market consultation will be conducted in accordance with the RBSL Methodology Change Procedures[8] in order to seek feedback from a range of stakeholders including the Federal Reserve and the ARRC (or any successor to the ARRC). RBSL will review all feedback and if following such review it resolves to proceed with the proposed change or changes, it will provide advance notice in accordance with the RBSL Methodology Change Procedures to users of the benchmark before implementing such change or changes.

Circumstances beyond the control of RBSL may necessitate an immediate change to or the cessation of the Benchmarks. Such circumstances include without limitation a loss of input data such that a reliable fallback for USD LIBOR cannot be determined.

In the event that an immediate change is required, RBSL will provide as much notice as is practicable and following such change will conduct an internal review of the Methodology.

If it becomes necessary to cease calculation and distribution of the Benchmarks, RBSL will implement the RBSL Benchmark Cessation Policy[9]. This includes conducting an analysis of the estimated usage of the Benchmarks and, where feasible, the selection of a credible alternative benchmark. In all cases, RBSL will take all reasonable steps to ensure that all users and other stakeholders are made aware as soon as possible of any intention or possible necessity to cease the Benchmarks.

[8] www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/rbsl-benchmark-methodology-change-cessation-policy.pdf
[9] www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/rbsl-benchmark-methodology-change-cessation-policy.pdf

Any material change to the Methodology or cessation of the Benchmarks may have an impact on any financial contract or financial instrument that references the Benchmarks or on the measurement of the performance of an investment fund that uses or refers to the Benchmarks. A material change to the Methodology may lead to a change in the economic reality represented by the Benchmarks and therefore to the economic exposure of any financial contract or financial instrument that references the Benchmarks. Any financial contracts or other financial instruments that reference the index or investment funds which use the Benchmarks to measure their performance should be able to withstand, or otherwise address the possibility of changes to, or cessation of, the Benchmarks.

5. FURTHER INFORMATION

Further information including the Methodology used in the determination of USD IBOR Institutional Cash Fallbacks benchmark and the USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) benchmark is available on Refinitiv's USD IBOR Cash Fallbacks website[10]. For any questions or queries about the Benchmarks, please contact RBSL at index_queries@refinitiv.com.

[10] www.refinitiv.com/USDIBORCashFallbacks

ANNEX: CLIMATE RELATED DISCLOSURES

SECTION 1 – CONSIDERATION OF ESG FACTORS	
Item 1. Name of the benchmark administrator.	Refinitiv Benchmark Services (UK) Limited
Item 2. Type of benchmark or family of benchmarks. Choose the relevant underlying asset from the list provided in Annex II.	Other
Item 3. Name of the benchmark or family of benchmarks.	USD IBOR Institutional Cash Fallbacks USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) benchmark
Item 4. Are there in the portfolio of the benchmark administrator any EU Climate Transition Benchmarks, EU Paris-aligned Benchmarks, benchmarks that pursue ESG objectives or benchmarks that take into account ESG factors?	☐ Yes ☒ No
Item 5. Does the benchmark or family of benchmarks pursue ESG objectives?	☐ Yes ☒ No
SECTION 3 – DISCLOSURE OF THE ALIGNMENT WITH THE OBJECTIVES OF THE PARIS AGREEMENT	
Item 10. By the date of application of this Regulation, for significant equity and bond benchmarks, EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks, benchmark administrators shall also disclose the following information. *By 31 December 2021, benchmark administrators shall, for each benchmark or, where applicable, each family of benchmarks, disclose the following information:*	
(a)Does the benchmark align with the target of reducing carbon emissions or the attainment of the objectives of the Paris Agreement;	☐ Yes ☒ No
Date on which information has last been updated and reason for the update:	17 January 2022 Update following launch of USD IBOR Consumer Cash Fallbacks (1 Week, 2 Months) benchmark

DISCLAIMER

USD IBOR Cash Fallbacks (shown as "Production" rates).

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Third party accreditation/disclaimers

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