



International Swaps and Derivatives Association, Inc.

IBOR Alternative Reference Rates Disclosure

Disclosure for Rates Transactions

This Disclosure supplements and should be read in conjunction with the Disclosure Annex for Interest Rate Transactions. **NOTHING IN THIS DISCLOSURE AMENDS OR SUPERSEDES THE EXPRESS TERMS OF ANY TRANSACTION BETWEEN YOU AND US OR ANY RELATED GOVERNING DOCUMENTATION.** Accordingly, the information provided in this Disclosure is subject in all cases to the actual terms of a Rates Transaction executed between you and us and its governing documentation (whether or not such qualification is expressly stated).

Disclosure for IBOR-based Obligations and Investments

This Disclosure is provided for Rates Transactions where an IBOR is an Underlier, but also provides information that may be useful in connection with other IBOR-based Obligations and Investments, including those for which Rates Transactions are entered into or acquired for hedging, risk management or investment purposes.

ISDA makes no representation or warranty, express or implied, regarding this Disclosure, assumes no responsibility for any use of this Disclosure and undertakes no duty to update this Disclosure to reflect future market or other developments relating to the subject matter hereof.

As used herein:

“IBOR” refers generally to any reference rate or benchmark rate that is an “interbank offered rate” intended to reflect, measure or estimate the average cost to certain banks of borrowing or obtaining unsecured short-term funds in the interbank market in the relevant currency and maturity, based on quotations or other information submitted by such banks to a recognized sponsor or administrator that publishes such reference rate or, as the case may be, as may be provided by one or more reference banks to a calculation agent or determining party pursuant to interest rate setting or fallback provisions or otherwise.

“IBOR-based Obligations and Investments” means transactions, contracts, loans, securities, debt instruments, derivatives or other obligations or investments that include or reference an IBOR-based rate, whether or not related to a Rates Transaction or constituting a Rates Transaction.

“LIBOR” refers generally to any IBOR that is a London interbank offered rate that may be used in the financial markets without necessarily referring to a specific definition used in a financial instrument or to ICE LIBOR.

Understanding IBORs

Because IBOR definitions vary, it will be important for you to understand such definitions along with the other interest rate provisions when you enter into or acquire IBOR-based Obligations and Investments. For example, if you enter into or acquire an IBOR-based Obligation or Investment and hedge the IBOR with a derivative, there could be differences in the respective IBOR definitions and/or their interest rate fallback provisions. If the result is a material interest rate mismatch between the two financial products, this could expose you to “basis risk” and otherwise undermine the effectiveness of the derivative as a hedge.

In the case of any IBOR that is produced or published by a compiling body, sponsor or administrator, such as by ICE Benchmark Administration (“IBA”), you should familiarize yourself with the composition and characteristics of the IBOR. You may also wish to consider how the IBOR is determined (including the transparency of the methodology used and the process for making changes to such methodology), the governance of, and accountability for, the IBOR determination process (including contingency measures in the event of insufficient or no inputs, such as reliance on the expert judgment of quoting banks or other contributors), and other factors affecting the operation, credibility and reliability of the IBOR. Information regarding an IBOR, such as that published by IBA, may be publicly available from the IBOR’s compiling body, sponsor or administrator on its website.

Whether an IBOR is appropriate to meet your financial needs, objectives and hedging strategies should be part of any suitability analysis that you conduct in entering into or acquiring any IBOR-based Obligation or Investment and, depending upon your circumstances, may be important for you to assess periodically as your financial needs, objectives and hedging strategies change, or as methodological or other changes take place with respect to such IBOR, including any potential discontinuance as discussed below.

IBOR Modifications & Discontinuance

A compiling body, sponsor or administrator of an IBOR may make methodological or other changes that could change the value of the IBOR, including changes related to the method by which the IBOR is calculated, eligibility criteria applicable to contributing banks or funding sources, or timing related to submissions or the publication of the IBOR. In addition, the compiling body, sponsor or administrator may alter, discontinue or suspend calculation or dissemination of the IBOR (in which case a fallback method of determining the reference rate may apply, if specified in the relevant IBOR-based Obligation or Investment).

Regulatory and industry initiatives concerning IBORs may result in changes or modifications affecting IBOR-based Obligations and Investments or IBORs, such as a change in the compiling body, sponsor or administrator of an IBOR, the suspension, discontinuance or unavailability of an IBOR, the development of an alternative reference rate (“ARR”), a need to determine or agree a substitute or successor reference rate or ARR, and/or a need to determine or agree a spread to be added to or subtracted from, or to make other adjustments to, a substitute or successor reference rate or ARR to approximate an IBOR equivalent rate (as further described below), not all of which can be foreseen at the time you enter into, issue or acquire an IBOR-based Obligation or Investment. You should consider how IBOR-based Obligations and Investments and IBORs may be affected by

such initiatives, changes and modifications, and the extent to which the definition of an IBOR together with fallbacks in such definition, if any, provide for such eventualities.

Compiling bodies, sponsors and administrators of IBORs, contributing banks on the relevant IBOR panel, reference banks providing IBOR quotations pursuant to interest rate setting or fallback provisions or otherwise, and developers of ARR (including their participants) have no obligation to consider your interests in calculating, adjusting, converting, revising, discontinuing or developing any IBOR, ARR or fallbacks or in any of their submissions or quotations.

Any of the foregoing initiatives and actions, any delay or uncertainty regarding the same, or any failure of an ARR to be developed or gain market acceptance, could adversely affect IBOR-based Obligations and Investments and their economics, including the price, value or liquidity of IBOR-based Obligations and Investments, their usefulness for your intended purpose, the timing or amount of payments or deliveries and, if applicable, the likelihood that you will be able to exercise any option rights.

Alternative Reference Rates Initiatives

Pursuant to recommendations of the Financial Stability Board (“FSB”), the FSB’s Official Sector Steering Group (“OSSG”) has been working with benchmark administrators to strengthen benchmarks for IBORs, and with financial institutions and other market participants to promote the development of ARRs. ARRs are in response to concerns over the sustainability of IBORs and the need to prepare markets for the potential suspension, discontinuance or unavailability of one or more of the IBORs.

The question of IBOR sustainability reflects how interbank markets have changed since the 1980s when IBORs first became popular benchmarks. Short-term interbank unsecured funding has declined over the years, particularly since the financial crisis as capital and liquidity rules have created disincentives for banks to fund themselves in this manner. The FSB and central banks have recognized that, without sufficient volume and liquidity in interbank deposit transactions, the credibility, reliability and sustainability of IBOR-based price discovery will remain at risk despite efforts to strengthen benchmark governance and administration. Without sufficient volume and liquidity, IBORs may be based on judgment-based estimates to one degree or another, not actual interbank deposit transactions, and contributing banks may be reluctant to continue making IBOR submissions necessary to sustain IBORs.

IBOR Discontinuance Risk

In July 2017, the UK Financial Conduct Authority (“FCA”) announced that the FCA would no longer use its influence or legal powers to persuade or compel contributing banks to make IBOR submissions after the end of 2021. While this was meant to encourage financial institutions to complete the development of ARRs by the end of 2021, it also raised concerns about the sustainability of IBORs beyond 2021. Although nothing in the announcement indicated that IBORs would be discontinued, it left market participants without any assurances that LIBOR and other IBORs would continue to exist after this time should too few banks be willing to continue serving on the relevant IBOR panel of contributing banks. In November 2017, the FCA confirmed that all 20 of the ICE LIBOR

panel banks had agreed to continue making submissions to their respective ICE LIBOR panels until the end of 2021.

While the OSSG has been working with the financial services industry, including ISDA, on developing ARR, there is no guarantee that ARR will be developed by the end of 2021, that any ARR developed will be suitable for each IBOR-based Obligation or Investment or type as a substitute or successor for any IBOR, that the composition or characteristics of ARR will be similar to those of any IBOR, or that ARR will be the economic equivalent of IBORs used in your IBOR-based Obligations and Investments.

IBOR-Equivalency and Risks

If the composition or characteristics of an ARR differ in any material respect from those of LIBOR or any other IBOR, such as an ARR that represents overnight secured funding transactions involving bank and non-bank market participants, it may be necessary to convert the ARR into IBOR-equivalent rates in a range of maturities before it is considered a suitable substitute or successor for the relevant IBOR.

Converting an ARR into one or more IBOR-equivalent rates may be possible by adding, subtracting or otherwise incorporating one or more interest rate spreads, or by making other appropriate adjustments, to the ARR to approximate an IBOR-equivalent rate. For example, statistical correlations between the performance of the ARR versus LIBOR in a range of maturities over time or for specific periods or points in time prior to a suspension, discontinuance or unavailability of LIBOR could serve as a basis for computing and incorporating spreads or making other adjustments to the ARR. The feasibility and appropriateness of such adjustments may depend on a variety of considerations, including market conditions, any disparate impact of monetary policy (or macroeconomic changes such as Brexit) on the respective rates during the observation period, and factors affecting the ARR's or LIBOR's integrity over the observation period, including liquidity, transaction volumes, the number and financial condition of contributing or reference banks, and other considerations.

Even with spreads or other adjustments, IBOR-equivalent ARR may be only an estimate or approximation of the relevant IBOR, may not be subject to continued verification against the relevant IBOR if it is suspended, discontinued or unavailable, and may not result in a rate that is the economic equivalent of the specific IBORs used in your IBOR-based Obligations and Investments. In addition, it may be necessary to make such spreads or other adjustments permanent in response to the suspension, discontinuance or unavailability of the relevant IBOR, in which case such spreads or other adjustments may reflect an historical correlation or relationship between the relevant rates without taking into account future changes in the unsecured short-term funding costs of banks in the interbank market and without otherwise including a measure that reflects bank credit risk.

In view of the relatively nascent stage of ARR development for IBORs, it is impossible to predict with any certainty whether and how conversions of ARR into IBOR-equivalent rates would or could be made and by whom. For example, conversions and adjustments could be made by developers of ARR or by compiling bodies, sponsors or administrators of ARR, or by a method or mechanism established by them. Due to competition laws or other legal constraints, developers and other market participants may be unable or reluctant

to act collectively in certain respects in reforming or replacing IBORs, such as setting or agreeing spreads or making other adjustments to ARR at the financial industry level without central bank or government involvement, endorsement or other intervention.

If ARRs are developed with the expectation that conversions would be made bilaterally in the context of individual contracts, transactions, undertakings or investments, then decisions whether and how to convert them into approximations of IBOR-equivalent rates, including establishing processes for doing so, may be left to the parties, or their calculation agents or determining parties under IBOR-based Obligations and Investments, subject to whatever agreements, amendments, approvals, consents or other actions that may be necessary or required.

Alternatively, if the applicable interest rate under an IBOR-based Obligation or Investment is a combination of an IBOR and an agreed spread, it may be that the agreed spread is to be adjusted instead.

In either case, you should expect that our interest, involvement or role in IBOR-based Obligations and Investments will vary, and we may make decisions and act independently with respect to each such IBOR-based Obligation or Investment, without any obligation to treat all IBOR-based Obligations and Investments alike, including, without limitation, agreeing or applying the same spreads or adjustments to ARRs for purposes of converting them into approximations of IBOR-equivalent rates.

Potential Insufficiency of Fallbacks

Just as IBORs remain vulnerable to contributing bank withdrawals, conventional IBOR fallback provisions that call for the polling of reference banks could likewise be vulnerable if reference banks are reluctant to provide IBOR quotations, perhaps for reasons similar to those of withdrawing contributing banks. Better suited for a temporary IBOR interruption, such polling of reference banks under primary or secondary fallbacks may also become impractical if carried out on a large scale or for prolonged periods in response to the discontinuance of an IBOR.

Current efforts to avoid such a scenario by reforming and replacing IBORs with ARRs could resolve these fallback vulnerabilities, inasmuch as ARRs could be expected to have their own more robust fallbacks. In the meantime, however, it is difficult to reform current IBOR fallbacks sensibly in a manner that specifies the use of future ARRs that have not been fully developed nor gained general market acceptance, especially when questions remain about IBOR-equivalency.

Fallbacks currently in use in the financial markets may not necessarily contemplate the substitution of IBOR with another rate, or in certain cases they could be commercially suboptimal, such as with respect to an interest rate swap hedging a floating rate note issuance, for example, where the note's IBOR fallback provisions default to the most recently calculated rate for the prior interest period — essentially converting an instrument from a floating to a fixed rate if the relevant IBOR is discontinued. Such a result could undermine a noteholder's hedging strategy, since IBOR fallback provisions used in ISDA definitional booklets for swaps do not contemplate locking in the last available IBOR for the life of the swap. Accordingly, it may become necessary or desirable in the future to replace

IBORs with ARRs in your IBOR-based Obligations and Investments, which may require that other parties or interested persons agree, approve or consent.

The Need for Future Amendments

Replacing IBORs with ARRs may not be possible unless appropriate amendments are made in the future to contracts, transactions, undertakings or investments, either bilaterally or through an ISDA protocol or other multilateral amendment process, assuming such methods are developed. Whether these methods are successful may depend, in part, on market acceptance of ARRs.

You may also need to evaluate the pros and cons of provisions that permit unilateral amendments in response to IBOR discontinuance, or that authorize a calculation agent or other determining party to use its discretion in administering fallbacks, selecting a substitute or successor rate or ARR, or making IBOR-equivalency determinations. For example, swaps that are part of a financing may have indentures that could specify that the issuer and the trustee may enter into a supplemental indenture to replace a discontinued IBOR without requiring the consent of floating rate note holders.

You should review the scope of the duties of the calculation agent under your contracts and the applicable standards of care. If you will be acting as a calculation agent or determining party, you may wish to consider your exposure to litigation risk if parties dispute your calculations and determinations under fallback provisions, especially if you are called upon to use your discretion.

Other Risks and Considerations

This Disclosure is not a complete statement of risks and other considerations concerning its subject matter, nor is it intended to address tax, accounting, or legal issues or risks unless otherwise noted. You should not construe the content of this Disclosure as legal, financial, tax, accounting or other advice, and you should consult your own attorneys, financial advisors, tax advisors and accountants as to legal, financial, tax, accounting and related matters concerning any IBOR-based Obligations and Investments, including the impact on your business and the risks, requirements and results of IBOR-based Obligations and Investments.