



IHS Markit™

IBOR Transition – Findings and Request for Feedback

Indices – IHS Markit Benchmark Administration Ltd.

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This document and the associated Request for Feedback questionnaire form a basis for discussion on IBOR transition for impacted indices. The paper describes the general framework for our approach to IBOR transition and our initial findings across the various benchmarks that we administer. Please note that any backtesting results presented are based on available information at the time and alternative options may present themselves with developing discussions in the marketplace about the creation of various IBOR successor rates.

1. IBOR transition overview

Following the global financial crisis and the LIBOR manipulation scandals, the reliability and representativeness of widely used IBOR benchmarks (IBORs) has been questioned. Global regulators have driven an agenda to create new or reform existing benchmarks to make them more robust and reliable. The use of IBORs is expected to be phased out by the end of 2021 at the latest, when they are expected to become non representative.

The markets most affected by the transition away from IBORs are the 5 LIBOR currencies (USD, GBP, EUR, JPY, CHF), as well as the AUD, CAD, and HKD markets.

Before the end of 2021 and a potential cessation of LIBOR publication, most jurisdictions have taken steps to select and create new benchmarks to replace or transition away from LIBOR. Newly created benchmarks, commonly referred to as Risk Free Rates (RFRs), typically have overnight tenors, do not contain credit risk and are administered by central banks. Liquidity in products referencing RFRs, both futures and OIS (Overnight Indexed Swaps), has increased significantly.

2. Background

IHS Markit Benchmark Administration Ltd. (IMBA UK) administers more than 33,000 benchmarks across asset classes, including fixed income, derivatives, economic indicators, equity and commodities, and both proprietary and third-party benchmarks. Some of these benchmarks contain references to IBORs in their methodologies. As such, in the context of cessation of IBOR rates, we will need to consider how IBOR references in benchmarks that we administer should be changed to other rates.

We have therefore performed the following analysis in relation to the benchmarks that we administer:

1. identified references to IBORs in our benchmarks,
2. categorized the references to IBORs into common use cases within and across index families,

3. determined the relevance of such references in the context of the calculation of the benchmark,
4. identified appropriate alternative rates that could be used, and
5. performed back-testing where relevant and possible to quantify the impact of the use of such alternative rates on the characteristics and the performance of the benchmark.

Based on the above analysis, we now present our initial findings and request feedback from market participants and stakeholders in relation to these. We aim to receive all feedback by 31 August 2020. We will analyze the feedback received which will guide towards our proposals in a future consultation expected later in 2020.

Making changes to references to IBORs in a benchmark can be classified as a methodology change, and such future changes might have a material impact on the benchmark. Any future consultation would hence follow the procedures laid down in our [Methodology Changes and Cessation Policy](#) document.

3. Framework

We have analyzed the benchmarks administered by IMBA. We did not identify any references to IBORs in HHPI, OPIS and Coal benchmarks. References to IBORs in other benchmark families can generally be differentiated into two types:

- (1) the reference to an IBOR rate is part of the benchmark methodology and impacts directly the calculation of the benchmark and/or auxiliary benchmark analytics,
- (2) a reference to IBOR is relevant in the context of external uses of the benchmark, e.g. in contracts between counterparties trading the product, but is not part of the benchmark methodology.

This document focuses on cases where the replacement of IBORs needs to be considered as part of the methodology and changes impact directly the calculation of the benchmark. We also describe our plans in relation to the indirect use cases. Whilst they are also relevant for users of our indices, they are not considered to be changes to the methodology of the benchmark.

References to IBORs (Table 1)

References to IBOR in our various benchmark families can be broadly classified as follows:

Benchmark family	Use of IBOR	IBOR Reference rates
iBoxx	Intra-month investment of cash Swap-based analytics Index inclusion of instruments referencing IBOR and successor rates	Various currencies and tenors (with the 1-month tenor being most common for cash investment)
iTraxx/CDX	Investment of cash for Total Return Indices (TRI) / Excess Return Indices (ERIs)	Solely Overnight (O/N) tenor (EONIA, Fed Funds, SONIA)
Index Administration and Calculation Services of third-party indices (IAS)	Various use cases, including investment of cash, discounting, element of a strategy, etc.	Various currencies and tenors
IOS/PO/MBX HHPI / OPIS / Coal	N/A	N/A

Ancillary external use cases

Some use cases of IBORs related to our benchmarks are not part of the benchmark methodology. Specifically, they are:

- a) Use in Financing / Funding Amount - Total Return Swaps on iBoxx and IOS/MBX/PO indices.
- b) CDS spread to price conversion - iTraxx/CDX

We expect changes to those standards to be driven by industry associations such as ISDA. IHS Markit actively contributes to those changes being made in good time to ensure a smooth transition and continued market functioning.

4. Alternative rates

What alternatives to IBORs are available will depend on the currency. Some alternative rates, term risk free rates (TRFRs) in particular, are only in the process of emerging. Also, there might be several competing TRFRs, at least for some currencies and in the initial stage.

We believe that the selection of an appropriate alternative rate will depend on (1) the tenor of the IBOR reference and (2) the use of the IBOR reference.

The tenor of the IBOR reference

1. O/N rates

Overnight RFRs exist in all currencies with various degrees of liquidity. Where O/N IBORs are currently referenced in our benchmarks the use of O/N RFRs seems to be the natural alternative in the future.

2. Term rates

Where term IBORs are currently referenced in our benchmarks there are several alternative rates that could be used in the future.

- a) For longer IBOR tenors the use of compounded O/N RFRs is an option. Regulators have encouraged the use of compounded RFRs that are fixed in arrears for the tenor. RFRs are available for all currencies.
- b) The use of compounded RFRs in arrears might not be appropriate or desired for all use cases. For the major currencies, efforts have been underway to create Term Risk Free Rates (TRFRs), rates for specified tenors that are fixed in advance. As of today, such rates are only about to be published in beta for GBP. They are expected to also emerge for JPY, USD and EUR at some point over the coming months, often within a framework set by regulatory authorities. There is an expectation that there will be competing providers of TRFRs, at least in the initial period and for some currencies.

The use of the IBOR reference

As shown in Table 1, there are several different uses for IBOR references in our benchmark. We believe that the use case is a relevant factor to determine which successor rate is most appropriate.

1. **Cash investment** – for this use case it will be important to assess the impact of the different alternative rates on the index return.
2. **Interpolation/Discounting** - for certain use cases a compounded O/N RFR might not be appropriate or desirable. For example, for interpolation or discounting a compounded O/N rate cannot be used as the rate to be used needs to be known today. This use case includes analytics currently published based on IBOR rates that are provided as supplementary information.

3. **Strategies** - for references to IBORs in benchmark strategies, there does not seem to be any obvious choice of successor rate. We believe that further analysis will be required and the preferred choice might depend on the individual strategy.
4. **Index inclusion** - For certain indices, including iBoxx indices, the methodology allows for the inclusion of bonds with a floating rate coupon. Current methodologies might specify that such rates are IBORs or they might be more generic. For iBoxx specifically, the topic of '*Eligibility of Floaters Linked to New Reference Rates*' was discussed as part of the 2019 European and North America Annual Index Reviews. Whilst certain indices already include bonds linked to SONIA (for GBP), once issuance and liquidity are deemed sufficient to enable the support of daily forward curve data on other ESTR and SOFR rates (for EUR & USD, respectively), an inclusion of bonds referencing these rates would also be considered with appropriate announcement for affected indices. As such, methodologies will need to be changed to allow for the inclusion of instruments that reference rates other than IBOR. Furthermore, given a phased transition in the marketplace, the question will arise whether at some point the index methodology rules should be changed to exclude instruments that are referencing IBOR, or no longer allow for new instruments referencing IBOR to be added.

Combining the described uses cases with choice of tenors for the replacement of term IBOR, the impact of the change in reference rate to a compounded RFR rate largely depends on the use case of the rate:

	O/N Compounded RFR (vs IBOR)
Cash investment	Higher return
Interpolation	N.A.
Strategy	Depends on the strategy

5. Analysis

Based on alternative rates as identified above and the use cases, we have performed back testing as follows:

Reference today	Use case	Alternative Rate
O/N IBORs	Cash investment	RFR
Term IBORs	Cash investment	Compounded O/N RFR
		Term Risk Free Rate*
	Swap based analytics/ Discounting	Term Risk Free Rate*
	Strategy	Compounded O/N RFR
		Term Risk Free Rate*

*where available

Our initial back testing was performed for iBoxx indices and covered a period of one year between January 2019 and January 2020.

The overall impact of all tests was less than one hundredth of a basis point with a range between -0.00169 basis points to 0.00965. Because the indices tested are path-dependent, the maximum impact was observed at the end of the testing period. The impact would be expected to grow if the testing period was extended beyond a year.

For several GBP-denominated benchmarks that reference 1-month GBP LIBOR today, we back tested both compounded RFR and TRFRs for the cash investment use case:

- Index values calculated with compounded RFR outperformed the published index levels calculated with using 1-month Libor. The maximum impact across the tested benchmarks, which occurred at the end of the testing period, was 0.00429 basis points.
- Index values calculated with the 1-month GBP TRFR showed a smaller differential in index values with a maximum impact of 0.00169 basis points for the same index and period in the test described in the preceding paragraph. Importantly, the index returns using GBP TRFR underperformed the published index levels using Libor.

The TRFR used for the purpose of back testing was the IHS Markit TRFR for GBP as it is the only one that is available with sufficient history at this time.

6. Review of approaches

RFRs exist in all relevant IBOR currencies and can be used as alternative to IBOR references both for the O/N tenor and for IBOR term rates. In most instances the use of RFRs is expected to lead to a slightly higher return compared to use of IBOR.

Term Risk Free Rates could also be used as alternative to references to IBOR term rates. A reference to TRFRs compared to compound RFRs has a smaller impact on the return – roughly 1/3rd of the impact of using compounded RFRs. For some use cases such as interpolation the use of TRFRs might be the only option.

However, for most currencies TRFRs do not exist yet, for some they might exist soon but cannot be used as benchmarks yet, and for some there might be competing TRFRs in the future of which only some might survive in the medium term.

At the same time, we will need to consider the significance of the adjustments that will need to be made to our benchmark methodologies and calculations, which will include efforts on back testing and implementation time. Any decisions about the choice of future reference rate will therefore need to be made sufficiently early to allow for an orderly implementation and to provide market participants with sufficient lead time to prepare for such adjustments.

7. Request for feedback

We are keen to hear views of stakeholders on the open questions identified further below and any other feedback that might be relevant to share and discuss as relates to the IBOR transition.

To provide feedback please use the [Indices IBOR Transition Survey](#).

Alternatively, we have provided the survey questions below for you to get in touch via email on indices@ihsmarkit.com.

Survey questions

Successor rates

1. For benchmarks that contain references to O/N IBORs in their methodology today, are RFRs the natural alternative? Should any other alternatives be considered?
2. For benchmarks that contain references to term IBORs today (eg 3 months, 1month Libor), would you prefer the use of compounded RFRs or of TRFRs as a successor rate? Please explain why.
3. Does this preference apply to specific use cases?

4. If your preference is for the use of TRFRs, how should we decide between different, competing TRFRs?
5. Do you believe it is important to also include a credit spread component in the successor rates?
6. Do you believe a robust credit spread add on will emerge and when?

Timing

7. At what point in time should IHS Markit make a decision on successor rates to allow for an orderly implementation? What are your relevant considerations in this context?
8. Do you believe we should wait to make a decision about the most appropriate IBOR successor rate for term IBOR references until TRFRs have emerged in the relevant currencies?
9. Do you believe we should wait to make a decision about the most appropriate IBOR successor rate for term IBOR references until a robust credit spread add-on has emerged?

Index inclusion

10. For iBoxx benchmarks which include floating rate instruments linked to IBORs, what is the most appropriate way to manage the transition? Should we consider using a hard deadline for the inclusion of bonds that are referencing IBORs and if so what deadline should be set? If no deadline, what other transition options could be considered?
11. When would be an appropriate time for the inclusion of EUR/USD-denominated newly issued bonds linked to RFR (ESTR/SOFR)?

General

12. Do you have any general feedback regarding IMBA's approach described in this document? Are there any additional aspects that we should consider?

This is not an exhaustive list of questions and we would welcome any other feedback that market participants have in relation to the IBOR transition.

Equally we would appreciate feedback on the auxiliary external use cases relating to changes to trading standards largely driven by industry associations but where IHS Markit will also be actively contributing to the discussions.

8. Process for feedback

The process IMBA is planning is as follows:

- Feedback to be provided by 31 August 2020 (via [Survey](#) or [contacting us](#))
- Review of feedback from market participants
- Further analysis depending on feedback and/or latest available datasets
- Consultation on methodology proposals to follow thereafter later in 2020

We will also proactively contact many of our stakeholders and look forward to having productive conversations.

9. Appendix

The following charts illustrate the back testing results across various Markit iBoxx indices. They are indicative of how the indices may have performed using alternative risk-free rates. The performance impact of substituting LIBOR with alternative rates is generally negligible over an extended period.

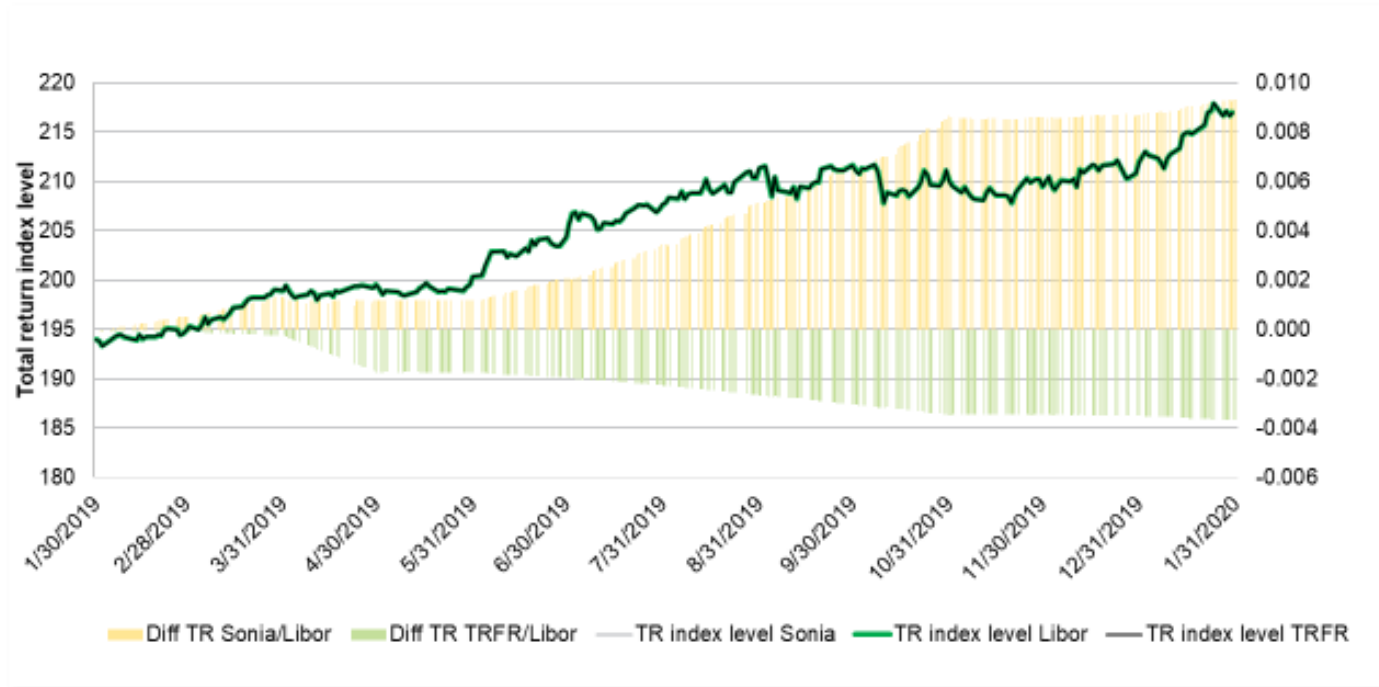
The right-hand, vertical axis of the charts measures the difference between the official index values and the calculated index value for each of the risk-free rates tested: (1) the overnight risk-free rate and (2) a term risk-free rate. Both testing scenarios led to negligible performance impact over the testing period. Two observations, however, are important to note:

- 1) The performance impact grows over time.
- 2) The overall performance impact of the term risk-free rate is smaller in magnitude than the impact of compounded overnight rates.

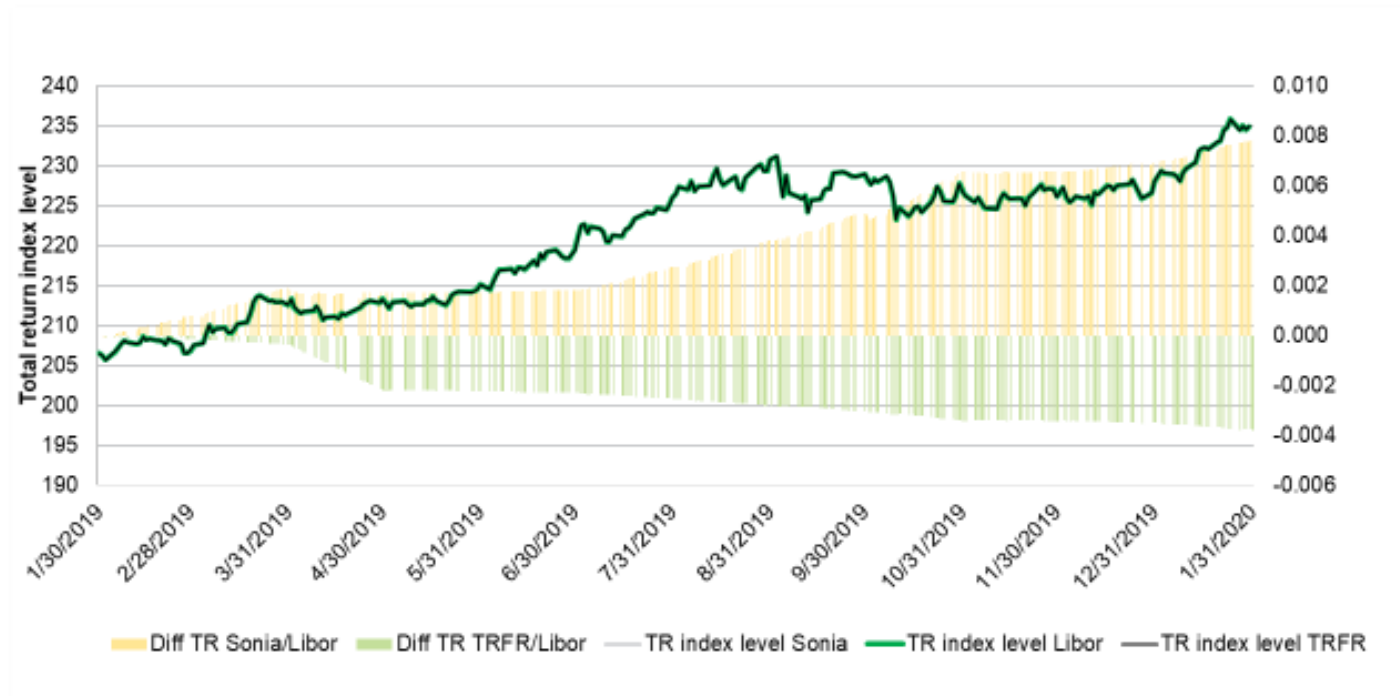
Both of these observations are expected for reasons discussed earlier in this document.

Please note that these back tests are provided for illustrative purposes only, they are not comprehensive and do not encompass the full range of indices that will be impacted by IBOR cessation. Nonetheless, we expect that the two observations listed above can be generalized for all iBoxx indices.

Indexname	Markit iBoxx GBP Liquid Corporates 100 Financials Index		
	Average Difference	Max (magnitude of difference)	Min (magnitude of difference)
SONIA/Libor	0.0043415235	0.0093098275	-0.0000134095
TRFR/Libor	-0.0021812085	-0.0036739817	-0.0000034476



Indexname	Markit iBoxx GBP Liquid Corporates 100 Non-Financials Index		
	Average Difference	Max (magnitude of difference)	Min (magnitude of difference)
SONIA/Libor	0.0035885718	0.0078058931	-0.0000194003
TRFR/Libor	-0.0023363194	-0.0037754954	-0.0000049879



Indexname	iBoxx £ Liquid Corporates Long Dated		
	Average Difference	Max (magnitude of difference)	Min (magnitude of difference)
SONIA/Libor	0.0014716537	0.0034267787	-0.0000092579
TRFR/Libor	-0.0005531093	-0.0010502134	-0.0000023802

