



ICE Swap Rate[™] Expansion of the Input Data

May 21, 2020



Contents

Executive Summary	3
About ICE Swap Rate™	4
Expansion of the Data Set	6
Appendix I - Testing Results	9
Disclaimers	10



Executive Summary

The ICE Swap Rate™ (formerly known as ISDAFIX) benchmark 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.¹ The floating leg is [EURIBOR®](#) for EUR and [ICE LIBOR™](#) (LIBOR™) for USD and GBP.

In responding to a [request for feedback](#) and a [consultation](#), market participants expressed support for a “waterfall” approach using the existing calculation whenever the underlying market liquidity is sufficient, and supplementing it with Dealer to Client (D2C) data when liquidity is low.

IBA has been engaging with potential providers of additional data and is pleased to have reached an agreement with Tradeweb Markets LLC for the provision of D2C data for use in an updated waterfall methodology. In testing, use of the additional data (02 Jan 2020 - 07 May 2020) has shown that the incidence of No Publications would have been reduced, by:

- 96% in USD ISR;
- 87% in GBP ISR; and
- 74% in EUR ISR.

There is no guarantee that such results will continue when the additional data is used in production.

IBA is aiming to put the waterfall methodology into production on Friday May 29, 2020.

¹ The various currencies, tenors and times are specified at <https://www.theice.com/iba/ice-swap-rate>.



About ICE Swap Rate™

Introduction and Background

ICE Swap Rate™ (ISR) is recognised as the principal global benchmark for swap rates and spreads for interest rate swaps. It 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.² The floating leg is [EURIBOR®](#) for EUR and [ICE LIBOR](#) (LIBOR) for USD and GBP.

ISR is used as the exercise value for cash-settled swaptions, for close-out payments on early terminations of interest rate swaps, for some floating rate bonds and for valuing portfolios of interest rate swaps.

It was the first global benchmark to transition from a submission-based rate, when ICE Benchmark Administration (IBA) changed the methodology in 2015 from panel banks' inputs to a new patented methodology based on tradable quotes sourced from regulated electronic trading venues. Such venues are currently Multilateral Trading Facilities (MTFs) and Swap Execution Facilities (SEFs).

Current ISR Methodology

The methodology is currently based on finding the volume-weighted average mid-price (VWAMP) from theoretically filling a trade in Standard Market Size (SMS) on both the bid and offer side at the relevant time.

To produce ISR, IBA receives data from multiple complete central limit order books (CLOBs), comprising tradable bids and offers, from regulated trading platforms during a pre-defined calculation window. From this data, IBA takes a set number of "snapshots" at randomised intervals within the data collection window, combining each snapshot into a synthetic order book that represents the prices and accompanying volumes available in the market at that time. These prices are used to calculate the VWAMP.

IBA performs a number of checks on the input data and the remaining VWAMPs are then combined into a final price using a quality weighting.

When there are not enough liquid snapshots to calculate the rate for a tenor, movement interpolation can be applied to interpolate the rate, provided that certain conditions are met. If these conditions are not met, IBA publishes a 'No Publication' for that tenor.

Regulation of IBA and ISR

IBA is authorised and regulated by the Financial Conduct Authority (FCA) for the regulated activity of administering a benchmark, and is authorised as a benchmark administrator under the [EU Benchmarks Regulation](#) (BMR).

The general requirements in Title II of the BMR apply to ISR. These include requirements in respect of a benchmark's input data and methodology; governance and management of conflict of interest requirements; benchmark oversight; maintenance of Control and Accountability Frameworks; record-keeping; and reporting of infringements.

The [regulatory technical standards](#) for the procedures and characteristics of the oversight function of certain benchmarks also apply to ISR.

² The various currencies, tenors and times are specified at <https://www.theice.com/iba/ice-swap-rate>.



The ICE Swap Rate Oversight Committee is comprised of an independent Chairperson and market representatives. The Oversight Committee is responsible for monitoring the administration of the benchmark. The composition and terms of reference of the Committee are published [here](#).



Expansion of the Data Set

Introduction and background

In August 2019, IBA published a [paper on possible enhancements](#) to ISR. Four approaches in particular were considered: interpolation; use of Swap Data Repositories (SDR) data; use of data from related markets; and including non-CLOB interest rate swap data within the ISR calculation.

IBA published a [Feedback Statement](#) in November 2019, summarising the responses to the paper, the great majority of which were in favour of expanding the data set underlying ISR.

In December 2019, IBA launched a formal [consultation](#) on specific aspects of the inclusion of non-CLOB data in the ISR calculation, with the following three potential approaches for incorporating additional data when CLOB data is insufficient:

- A: Using Dealer to Client (D2C) data from platforms and, only if this were insufficient, using other Request for Quote (RFQ) data;
- B: Using other RFQ data and, only if this were insufficient, using D2C data from dealer platforms as a supplement; or
- C: Intermingling D2C and other RFQ data.

The [Feedback Statement](#) in February 2020, reported that a majority of respondents preferred approach A, with C as their second preference. Approach B gained very little support as either first or second preference.

Waterfall

Based upon the feedback provided in the consultation, IBA is updating the methodology to include the waterfall approach using CLOB data at Level 1, D2C data at Level 2 and interpolation at Level 3.

The current calculation will be used whenever the underlying market liquidity is sufficient. In times of low liquidity, the additional data source will be incorporated on a tenor by tenor basis in order to seek to reduce the number of No Publications.

IBA will utilise the same data collection window as is currently used for ISR, which is the final two minutes of the hour before benchmark publication.

If a rate cannot be produced, IBA will apply movement interpolation (linear interpolation of the daily rate movement between adjacent tenors) to calculate the applicable ISR Rate, subject to certain conditions.

If a rate still cannot be produced, there will be a No Publication for affected tenor(s). Tenors with sufficient volume are published in the normal way.

The use of D2C data will be an integral part of the ISR methodology and not a fall-back.

For transparency, IBA intends to publish the number of times that the D2C level of the waterfall was used in the previous quarter.

Implementation

Trading venues were invited in the December 2019 [consultation](#) paper to contact IBA if they have plain vanilla Interest Rate Swap data from CLOBs, Dealer to Client (D2C) data or any other type of quotes (e.g. Request For Quote (RFQ) type protocols) for possible use in the calculation of ISR.



Since that time, IBA has been engaging with potential providers of additional data and IBA is pleased to have reached agreement with Tradeweb Markets LLC for the provision of D2C data for use in the ISR calculation when CLOB data from the current venues is insufficient for IBA to be able to produce ISR.

In tandem with contractual negotiations, IBA has carried out the IT build to incorporate the waterfall approach into the updated ISR methodology and has carried out back-testing, as outlined below.

In addition, IBA's surveillance tools have been adapted for the evolution of the methodology.

IBA has also sought legal advice to confirm the ISR determined and published using the waterfall methodology will continue to be the same benchmark as before the implementation of the waterfall methodology, and that the representativeness of the ISR in relation to the economic reality that it seeks to measure will not be adversely affected by the implementation of the waterfall methodology, but may be enhanced by virtue of a reduction in "no publications".

Some of the ISR documentation has been updated to reflect the incorporation of D2C data, as noted below, and agreed by the ICE Swap Rate Oversight Committee.

Testing

In addition to carrying out extensive testing of the new functionality underpinning the waterfall methodology, IBA has used historical data to backtest the extent to which the inclusion of D2C would have reduced the incidence of No Publications. IBA has also considered the potential impact, if any, on the published rates through the inclusion of D2C data.

Using historical data from the beginning of the year, as of May 07, 2020 testing of the use of the additional data has shown that the incidence of No Publications would have been reduced, by:

- 96% in USD ISR;
- 87% in GBP ISR; and
- 74% in EUR ISR.

There is no guarantee that such results will be shown when the additional data is used in production. Test results are available in Appendix I.



ISR documentation

The website and the following ISR documents will be updated as a consequence of the incorporation of D2C data:

- [Calculation Methodology](#)
- [Insufficient Data Policy](#)
- [Benchmark Statement](#)

Implementation of the ISR Waterfall Methodology

IBA is aiming to put the waterfall methodology into production on Friday May 29, 2020 for all ISR benchmark runs.



Appendix I - Testing Results

Period: 02 JAN 2020 - 07 May 2020

ICE Swap Rate Benchmark	Total # of Rates ¹ (Count)	ISR No Publication ² (Count)	Waterfall Methodology Level 2 ³ (Count)	Level 1 vs. Level 2 Avg. Abs Diff ⁴ (bps)	Level 1 vs. Level 2 Max. Abs Diff (bps)
EURRATES 1100	1,305	193	150	0.08	1.10
EURRATES 1200	1,305	175	121	0.08	1.80
GBPRATES 1100	1,320	246	213	0.10	0.80
USDRATES 1100	1,144	949	910	0.07	0.40
USDRATES 1500	87	66	64	0.15	0.40
USDSPREADS 1100	440	285	275	0.05	0.20

⁽¹⁾ Total number of good business days multiplied by tenors for each currency run over the period. ⁽²⁾ Actual number of days/tenors when there was a No-Publication. ⁽³⁾ The number of days/tenors when a No-Publication would have been avoided if the 'Waterfall' calculation methodology had been implemented. ⁽⁴⁾ Comparing Level 1 (CLOB data calculation) to Level 2 (Dealer to Client data calculation) results, where available.

Note: This back-testing is comparing information using the current ICE Swap Rate (ISR) methodology to the proposed 'Waterfall' calculation methodology. There is no guarantee that such results will continue.



Disclaimers

ICE Benchmark Administration Limited (IBA) is a benchmark administrator and licenses benchmark and other information to users for purposes including: valuation and pricing activities, use as a reference rate in transactions and for the creation of financial products; redistribution to third parties; trading and clearing activities; historical access; and the issuance of exchange traded products. IBA reserves all rights in this benchmark and other information and in the methodologies and other information disclosed in this document and on IBA's website, and in the copyright in this document and those on IBA's website. None of IBA's benchmark and other information may be used without a written license from IBA and such benchmark and other information is provided solely for the purposes specified in the relevant licence.

ICE, LIBOR, ICE LIBOR, ICE Swap Rate and ICE Benchmark Administration are trademarks of IBA and/or its affiliates. All rights in these trademarks are reserved and none of these rights may be used without a written license from IBA and/or its affiliates, as applicable. EURIBOR® is a registered trademark of the European Money Markets Institute (EMMI).

The outputs from testing shown in this document and on IBA's website are test results provided for information and illustration purposes only and are not intended to predict, forecast or give any indication of future information or performance in production.

Historical benchmark and other information may not be indicative of future information or performance. None of IBA, Intercontinental Exchange, Inc. (ICE) or any third party that provides data used to administer or determine any benchmark and other information (a Data Provider), or any of its or their affiliates, makes any claim, prediction, warranty or representation whatsoever, expressly or impliedly, as to the timeliness, accuracy or completeness of its benchmark or other information, the results to be obtained from the use of its benchmark or other information, or as to the appropriateness or suitability of any such benchmark or other information for any particular purpose to which it might be put.

IBA is a benchmark administrator, authorised and regulated by the Financial Conduct Authority under Regulation (EU) 2016/1011 (The EU Benchmarks Regulation). IBA is not a manufacturer or distributor of any investment or product, whether based on its benchmark or other information or otherwise, for purposes of Directive 2014/65/EU and Regulation (EU) No 600/2014 (MiFID II) or Regulation (EU) No 1286/2014 (PRIIPs).

IBA does not provide legal, tax or investment advice or recommendations regarding securities and no publication of benchmark and other information should be taken as constituting financial or investment advice or a recommendation of securities, an invitation or inducement to engage in any investment activity, including any securities transaction, or a financial promotion.

As a result, IBA is not responsible for carrying out any target market assessment or supplying any key information document in relation to its benchmark or other information or otherwise. IBA is not responsible for and makes no representation regarding the appropriateness or suitability of using, or investing in any financial instrument or entering into any contract linked to, IBA's benchmark or other information and any decision to engage in such use or to invest in any such instrument or enter into any such contract should not be made in reliance on IBA's benchmark or other information. You should consult relevant disclosures by your counterparties or seek advice from professional advisors in relation to any intended use of, or investing in any financial instrument or entering into any contract linked to, IBA's benchmark or other information.

Users of IBA's benchmark or other information should produce and maintain robust written fallback provisions and plans setting out the actions that would be taken in the event of material changes to or cessation of the relevant benchmark or other information. These should include, where feasible and appropriate, specifying alternative benchmarks that could be referenced as a substitute with reasons as to why they are suitable



alternatives. Various factors, including those beyond IBA's control, might necessitate material changes to or cessation of a benchmark or other information. Please ensure that any financial instrument or contract that you invest in or are a party to linked to IBA's benchmark or other information contains such provisions and plans and that you consider the potential impact on any relevant financial instrument or contract of a material change or cessation of the relevant benchmark or other information.

To the fullest extent permitted by applicable law, none of IBA, ICE or any Data Provider, or any of its or their affiliates will be liable in contract or tort (including negligence), for breach of statutory duty or nuisance or under antitrust laws, misrepresentation or otherwise, in respect of any inaccuracies, errors, omissions, delays, failures, cessations or changes (material or otherwise) in IBA's benchmark and other information, or for any damage, expense or other loss (whether direct or indirect) you may suffer arising out of or in connection with IBA's benchmark and other information or any reliance you may place upon it. All implied terms, conditions and warranties, including without limitation as to quality, merchantability, fitness for purpose, title or non-infringement, in relation to IBA's benchmark and other information are hereby excluded to the fullest extent permitted by applicable law.

General

[Intercontinental Exchange](#) (NYSE: ICE) is a Fortune 500 company formed in the year 2000 to modernise markets. ICE serves customers by operating the [exchanges](#), [clearing houses](#) and information services they rely upon to invest, trade and manage risk across global financial and commodity markets. A leader in market data, [ICE Data Services](#) serves the information and connectivity needs across virtually all asset classes. As the parent company of the [New York Stock Exchange](#), the company is the premier venue for raising capital in the world, driving economic growth and transforming markets.

Trademarks of ICE and/or its affiliates include Intercontinental Exchange, ICE, ICE block design, NYSE and New York Stock Exchange. Information regarding additional trademarks and intellectual property rights of Intercontinental Exchange, Inc. and/or its affiliates is located at:

<http://www.intercontinentalexchange.com/terms-of-use>.

Key Information Documents for certain products covered by the EU Packaged Retail and Insurance-based Investment Products Regulation can be accessed on the relevant exchange website under the heading "Key Information Documents (KIDS)."

Safe Harbour Statement under the Private Securities Litigation Reform Act of 1995 -- Statements in this press release regarding ICE's business that are not historical facts are "forward-looking statements" that involve risks and uncertainties. For a discussion of additional risks and uncertainties, which could cause actual results to differ from those contained in the forward-looking statements, see ICE's Securities and Exchange Commission (SEC) filings, including, but not limited to, the risk factors in ICE's Annual Report on Form 10-K for the year ended December 31, 2019, as filed with the SEC on February 6, 2020.