

Calculation Methodology

Overview

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

Each published ICE Swap Rate benchmark rate (each an “ISR Rate”) is calculated using eligible prices and volumes for specified interest rate derivative products, provided by trading venues in accordance with a “Waterfall” Methodology. The first level of the Waterfall (“Level 1”) uses eligible, executable prices and volumes provided by regulated, electronic, trading venues. If these trading venues do not provide sufficient eligible input data to calculate an ISR Rate in accordance with Level 1 of the Methodology, then the second level of the Waterfall (“Level 2”) uses eligible dealer to client prices and volumes displayed electronically by trading venues. If there is insufficient eligible input data to calculate an ISR Rate in accordance with Level 2 of the Methodology, then the third level of the Waterfall (“Level 3”) uses movement interpolation, where possible for applicable tenors, to calculate an ISR Rate. Where it is not possible to calculate an ISR Rate at Level 1, Level 2 or Level 3 of the Waterfall, then the Insufficient Data Policy applies for that ISR Rate.

This document describes the “Methodology” used to calculate and determine the published values for the ICE Swap Rate. This Methodology is reviewed at least annually by the ICE Swap Rate Oversight Committee, as documented in its Terms of Reference.

ICE Swap Rate is administered by ICE Benchmark Administration Limited (“IBA”), which is authorised and regulated by the Financial Conduct Authority for the regulated activity of administering a benchmark and is authorised as a benchmark administrator under the Benchmarks Regulation.

Input Data Specification

The specifications and eligibility criteria for the applicable interest rate derivative products, and for the prices and volumes provided in respect of these as input data for each ISR Rate, are available at <https://www.theice.com/iba/ice-swap-rate>.

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

Calculation steps

The calculation of each ISR Rate involves the following steps:

Waterfall Level 1

1. IBA collects tradeable bid and offer prices and volumes available on the central limit order books of regulated, electronic trading venues in respect of a two-minute window before the relevant ISR Rate calculation (e.g. 10:58 to 11:00).
2. The two-minute window is divided into 24 blocks of five seconds each and a random snapshot time is selected for each of these five-second blocks (i.e. 24 snapshots).
3. A synthetic order book is created at each snapshot time by combining and ranking (by price) the eligible bids and offers from each trading venue. These prices (and the associated volumes) are used to calculate the volume weighted bid (“VWB”) and the volume weighted offer (“VWO”) of the prices that would result from filling a hypothetical trade of Standard Market Size (“SMS”)² on each side of the market. A volume weighted average mid-price (“VWAMP”) is then calculated from the VWB and the VWO.
4. Snapshots with insufficient tradable volume to fill the SMS, or that contain crossed or zero-spread bid and offer prices, are not included in the calculation. Remaining snapshots are ranked in order of their VWAMPs and the snapshots with a VWAMP above the 75th percentile or below the 25th percentile are also discarded.
5. If at least six snapshots remain, the VWAMPs from these snapshots are quality-weighted based on the difference between the VWB and the VWO and averaged, in order to determine the applicable ISR Rate.

Waterfall Level 2

6. If fewer than six snapshots remain after Level 1, IBA will use dealer to client bid and offer prices and volumes displayed electronically by trading venues in respect of the same two-minute window to calculate the applicable ISR Rate.
7. The two-minute window is again divided into 24 blocks of five seconds each and a random snapshot time is selected for each block.
8. Where a trading venue provides prices from dealers for multiple categories of clients within a snapshot, IBA will select the prices from a single client category per dealer, based on the tightest spread and largest volume for each client category within the snapshot.
9. The selected, eligible bids and offers from each dealer from each trading venue are combined and ranked (by price) to create a synthetic order book at each snapshot time and any crossed bid and offer volume within the orderbook is discarded. The remaining prices and associated volumes are used to calculate the VWB and the VWO of the prices that would result from filling a hypothetical trade of SMS in the same manner as for Level 1, with the VWAMP also calculated in the same way.

² The standard market size for each ISR Rate and for each level is specified at <https://www.theice.com/iba/ice-swap-rate>.

10. Illiquid snapshots are excluded in the same manner as for Level 1, and remaining snapshots are ranked in order of their VWAMPs and the snapshots with a VWAMP above the 75th percentile or below the 25th percentile are also discarded.
11. If at least six snapshots remain, the applicable ISR Rate is determined as the quality weighted average of the applicable VWAMPs in the same manner as for Level 1.

Waterfall Level 3

12. If fewer than six snapshots remain after Level 2, IBA will apply movement interpolation (linear interpolation of the daily rate movement between adjacent tenors) to calculate the applicable ISR Rate, provided that such ISR Rate:
 - a) was calculated at Level 1 or Level 2 of the Waterfall (i.e. was not interpolated) on the previous publication day; and
 - b) has adjacent tenors that are one year shorter and one year longer than the tenor of such ISR Rate (thus movement interpolation can only apply to a limited number of ISR Rate tenors), each of which was not interpolated on both the previous and the current publication day.

Insufficient Data Policy

13. If Level 3 does not generate the applicable ISR Rate, then the published Insufficient Data Policy³ applies.

Publication Days and Holiday Schedules

The days on which each ISR Rate is scheduled to be published, and the applicable publication time, are specified at <https://www.theice.com/iba/ice-swap-rate>.

Errors and Republication

IBA has published a Republication Policy⁴ which addresses situations where an error in Input Data or in the determination of an ICE Swap Rate is identified after the publication of the relevant price. For transparency, IBA publishes the number of times that each level of the Waterfall was used for each quarter on its website.

January 2021

³ Available at <https://www.theice.com/iba/ice-swap-rate>.

⁴ https://www.theice.com/publicdocs/ICE_Swap_Rate_Republication_Policy.pdf

BENCHMARK AND OTHER INFORMATION NOTICE AND DISCLAIMER

PLEASE ENSURE YOU READ THE BELOW INFORMATION AND DISCLAIMER CAREFULLY. PLEASE ENSURE YOU TAKE SPECIFIC AND PROFESSIONAL LEGAL, TAX, REGULATORY AND FINANCIAL ADVICE AS APPROPRIATE BEFORE USING, OR INVESTING IN ANY FINANCIAL INSTRUMENT OR ENTERING INTO ANY CONTRACT LINKED TO, ICE BENCHMARK ADMINISTRATION LIMITED'S BENCHMARK OR OTHER INFORMATION

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 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.

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. At the end of the transition period in relation to the withdrawal of the UK from the EU, which ended at 11:00 pm on December 31, 2020, IBA ceased to be authorised as a benchmark administrator under the EU Benchmarks Regulation and is authorised as a benchmark administrator under the UK Benchmarks Regulation, as may be amended from time to time. 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) (or, following the end of the transition period in relation to the withdrawal of the UK from the EU, as such legislation is on-shored into UK legislation).

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, for 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.