



# ICE Swap Rate - Possible Enhancements

August 2019



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## Executive Summary

ICE Swap Rate (ISR) is recognised as the principal global benchmark for swap rates and spreads for EUR, GBP and USD interest rate swaps. It represents the mid-price for interest rate swaps (the fixed leg), at particular times of the day in tenors ranging from 1 year to 30 years. The floating leg is EURIBOR<sup>1</sup> for EUR and ICE LIBOR<sup>2</sup> (LIBOR) for USD and GBP.

ISR is underpinned by a strong and reliable methodology 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. Over the period from April 1, 2015 to August 5, 2019, IBA published 98.57% of the intended ISR rates. On occasions, however, IBA is unable to publish some ISR tenors because of a lack of liquidity.

In this paper, IBA is posing two key questions:

- 1) Should IBA expand the data set to help increase the publication numbers, particularly in light of recent USD No Publications; and
- 2) Should IBA publish a GBP SONIA rate based upon growing volumes in SONIA Swaps.

Expanding the ISR data set to include non-Central Limit Order Book (CLOB) data sourced from regulated trading platforms in a waterfall methodology is considered the most promising approach to reduce the No Publications. IBA welcomes views on this, including whether a waterfall methodology should be an integral part of the ISR methodology or used as a fall-back methodology.

IBA is also seeking views on the potential introduction of a new suite of ISR tenors with SONIA as the floating leg rather than LIBOR, using the same methodology, processes and governance as for ISR now. IBA and the ICE Swap Rate Oversight Committee consider that such a new benchmark suite could be introduced in parallel to the existing GBP rates. IBA is also engaging with ISDA on this to ensure that the new ISR could be memorialised in standard definitions for derivatives and IBA will engage with other key infrastructure providers in the derivatives markets.

A questionnaire requesting specific feedback from market participants is attached. More general feedback by email or letter is also welcome.

Respondents are requested to provide feedback to IBA at [IBA@theice.com](mailto:IBA@theice.com) by 5pm London time on Monday **October 14, 2019**.

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<sup>1</sup> <https://www.emmi-benchmarks.eu/euribor-org/euribor-rates.html>

<sup>2</sup> <https://www.theice.com/iba/libor>



## 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 and spreads (the fixed leg), at particular times of the day in three major currencies (EUR, GBP and USD) and in tenors ranging from 1 year to 30 years. The floating leg is 3M ICE LIBOR (LIBOR) for USD, 3M and 6M LIBOR for GBP, and 3M and 6M EURIBOR® for EUR.

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 Multilateral Trading Facilities (MTFs) and Swap Execution Facilities (SEFs).

### ISR Methodology

The methodology is 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.

The steps to produce ISR are that:

1. 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. The regulated trading platforms are BGC Partners' BGC Trader, Tradition's Trad-X and ICAP's i-Swap.
2. IBA takes a set number of "snapshots" from this data at randomised intervals to make the benchmark robust against momentary aberrations in the market.
3. The data is combined for each snapshot into a synthetic order book that represents the best prices and accompanying volumes available in the market at that time.
4. IBA calculates the volume weighted prices at which a trade in SMS could be filled from this synthetic order book on both the bid and offer side. These prices are used to calculate the VWAMP.
5. IBA performs a number of checks on the input data to exclude illiquid and outlier snapshots together with snapshots with crossed and zero bid-offer spread order books:

#### Illiquid snapshots

Illiquid snapshots are not included in the calculation. To ensure this, any snapshots that do not fill the SMS on both the bid and offer side are discarded, so that only VWAMPs from reasonably-sized trades are included in the calculation.

#### Crossed order books

Crossed order books, in which the bid price is higher than the offer price, could exist momentarily but would not be truly representative of the market during the data collection window. Snapshots with crossed order books are therefore discarded.

#### Zero spread order books

Similarly, an order book may have a best bid and best offer which are equal to each other. The calculation excludes these snapshots.



### Minimum number of snapshots

IBA also sets a minimum number of liquid snapshots which must be available in order to perform the calculation.

6. Outlier checks are made to protect against momentary and unrepresentative spikes in price. The snapshots that passed the previous checks are ranked in order of their VWAMPs. The snapshots higher than the 75th percentile and lower than the 25th percentile are discarded, leaving only the most representative snapshots.
7. IBA combines the remaining VWAMPs into a final price using a quality weighting. Snapshots with tighter spreads between the Volume Weighted Bid and Offer are indicative of a better quality market so are given a higher weighting.

The ISR methodology was modified in November 2017 particularly to introduce movement interpolation when there are not enough liquid snapshots to calculate the rate for a tenor. In such cases, the day-on-day move in adjacent tenors and the previous day's rate for the tenor are used to interpolate a rate, provided that the following conditions are met:

- The adjacent tenors are spaced one year either side of the missing ('target') tenor;
- Neither adjacent tenor is itself interpolated; and
- The previous day's publication of the target tenor and the adjacent tenors were not interpolated.

If the above conditions for applying movement interpolation are not met, IBA publishes a 'No Publication' for that tenor. All tenors with sufficient volume are published in the normal way.

### **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<sup>3</sup> (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<sup>4</sup> for the procedures and characteristics of the oversight function of certain benchmarks also apply to ISR.

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 at:

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

### **Further Information**

Further information about ISR, including how to access the benchmark rates, can be found at:

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

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<sup>3</sup> Regulation (EU) 2016/1011 of 8 June 2016.

<sup>4</sup> Commission Delegated Regulation (EU) 2018/1637 of 13 July 2018.



## Approaches for Generating ISR in Times of Low Liquidity

### Introduction

ISR is underpinned by a strong and reliable methodology that has been cited by the official sector as a good example of a robust, representative benchmark calculation<sup>5</sup>.

Over the period from April 1, 2015 to August 5, 2019, IBA published 98.57% of the intended ISR rates. The percentages by currency during that period were:

- EUR 99.5%
- GBP 99.2%
- USD 96.7%

The percentages by benchmark run were:

Benchmark run	%
EURRATES 1100	99.5
EURRATES 1200	99.4
GBPRATES 1100	99.2
USDRATES 1100	97.0 *
USDRATES 1500	93.9 *
USDSPREADS 1100	96.5

\* USDRATES runs combined: 96.8%

On occasions, however, IBA is unable to publish some ISR tenors because of a lack of liquidity on the trading platforms from which IBA sources data. The low liquidity is typically caused by high market volatility or because related markets are closed (for example, on Christmas Eve and New Year's Eve).

A way to solve the problem of No Publications because of related markets being closed is to link the business day calendar used in the ISDA Floating Rate Option definition to the publication schedule of the relevant ISR (if such schedule excludes such days and is able to be published far out enough so that firms can incorporate into their risk systems). This is currently being discussed by the 2019 ISDA Definitions working group.

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<sup>5</sup> <https://www.fca.org.uk/insight/power-benchmark-ice-swap-rate>



On days of market disruption, bids and offers tend to be withdrawn from the trading platforms. Sometimes the low liquidity has led to a No Publication for all USD tenors:

Date	Reason
February 8, 2018	High market volatility in the equities markets impacted the interest rates market
June 5, 2019	High market volatility because of changes in expectations in how the Federal Reserve will manage monetary policy
July 5, 2019	Thin markets on the day after the US Independence Day
July 10, 2019	High market volatility following the Federal Reserve Board Chairman's testimony to the Senate on monetary policy
August 5, 2019	High market volatility signalled by tensions between the US and China

On other days there has been No Publication in a smaller range of tenors; the full set of No Publications for the same period is summarised in the Appendix.

Following those No Publications in USD, IBA has explored a number of approaches to minimise potential instances, as outlined below and would welcome feedback.

### **Possible Approaches**

IBA analysed a number of different approaches that might be used to generate ISR rates when there is insufficient liquidity for publication of some tenors of the benchmark.

Four approaches have been considered in particular:

- Interpolation;
- Use of Swap Data Repositories data;
- Use of data from related markets; and
- Including non-CLOB data.

Each of these possible approaches is outlined below:

#### 1. Interpolation

In conjunction with the ICE Swap Rate Oversight Committee, IBA considered a relaxation of one or more of the conditions that are currently in place for movement interpolation. After extensive back-testing of data, IBA's analysis showed that the integrity of the interpolated rate could be compromised because there is a balance between the accuracy of the rate and relaxing some of the conditions.

Furthermore, since interpolation of a specific tenor requires data to be available for adjacent tenors, it would not be a potential solution on days when there is increased volatility or very thin liquidity across the curve.



## 2. Use of Swap Data Repositories data

IBA sourced trade data from Swap Data Repositories (SDRs) and considered the possibility of deriving a benchmark from that data when there is low liquidity. IBA analysed data sourced both during the usual data collection window and for a slightly extended time before and afterwards. The data, when analysed, revealed that trading activity varied during these windows and was not consistent across the various ISR tenors. Furthermore, there was the potential for very little trading to take place at or near the ISR window, if market uncertainty was high at that time.

IBA also identified other potential drawbacks such as practical difficulties in sourcing such data in a timely manner because of delays in the reporting of swap trades.

## 3. Use of data from related markets

IBA also explored the possibility of deriving ISR from other market data, such as US Treasuries, UK Gilts, European government bonds and/or futures contracts.

While data on those markets seems to be more consistently available, there does not seem to be a universally acceptable model from which to derive ISR tenors from these sources in a robust and sustainable manner.

The Oversight Committee also expressed reservations about using data from another asset class in order to derive the benchmark, given the current definition of ISR.

Another alternative considered was to update the previous day's ISR rate(s) by reference to the daily movement in government yields. The Committee was also concerned about this option as this would not capture the spreads inherent in pricing swaps relative to government securities.

## 4. Including non-CLOB data

Another approach considered by IBA was to incorporate data from alternative sources when firm quotes are not available from MTFs or SEFs on inter-dealer CLOBs. Such additional data could include:

- Pricing from Request for Quote platforms;
- Firm non-discretionary data from Dealer-to-Customer (D2C) swap pricing sources; and/or
- 'Screen' prices including voice broking data.

Under this approach, IBA would source bids and offers for the same data collection window as is currently used for ISR.

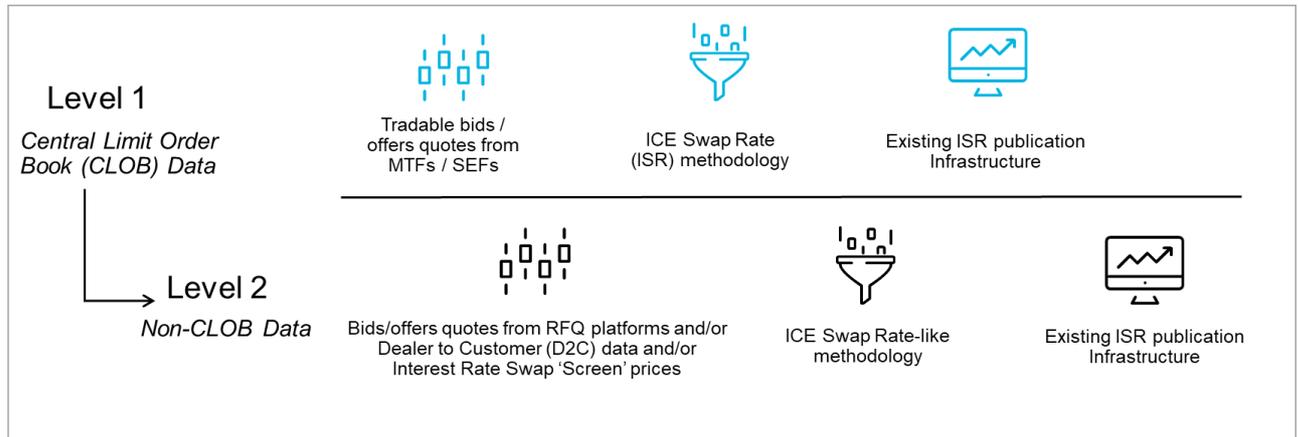
A waterfall would be used as the calculation methodology so that the CLOB data would not be mixed with the non-CLOB data set to produce the rate.

First, the CLOB data would be processed in the manner described earlier in the current methodology for ISR.

If a No Publication would result, IBA would then carry out the above steps using the non-CLOB data to seek to publish a rate.



Including non-CLOB data in a waterfall methodology is considered a promising approach by IBA and the Oversight Committee. Importantly, it would provide data from the same asset class as is currently used in the calculation. The existing methodology and calculation would be used whenever the underlying market liquidity is sufficient but the number of No Publications should be reduced in times of low liquidity or high volatility.



As with the current benchmark methodology, IBA will perform checks on the input data to exclude illiquid and/or outlier snapshots. IBA will also set a minimum number of snapshots which must be available in order to perform the calculation.

### Methodology Change or Fall-back Rate

Under the current ISDA definitions, ISR must be used for the settlement of related contracts if a rate is published. However, if a rate is not available from IBA, a rate provided by 'reference banks' is used as the contractual fall-back in the ISDA definitions for EUR and USD ISR and a rate determined by the calculation agent is used at the contractual fall-back for GBP ISR.

There are two approaches for IBA to include non-CLOB data in the calculation of ISR.

First, the data could be included as an integral part of the methodology, in which case firms would be obliged to use such rate for the settlement of related contracts before using any relevant contractual fall-backs.

Alternatively, IBA could publish ISR rates using non-CLOB data as separate rates, in which case firms could consider whether the ISDA definitions should be updated so that these rates apply as contractual fall-backs prior to the existing contractual fall-backs described above.<sup>6</sup>

IBA would welcome views as to whether it would be preferable to include non-CLOB data as part of the ISR methodology or as a separate rate.

<sup>6</sup> If the ISDA definitions were amended to include these as contractual fall-backs, the updates would apply to new transactions but not transactions entered into before the effective date of the amendments.



## Possible ICE Swap Rate with SONIA as the Floating Leg

### Introduction and Background

As stated earlier, ISR for GBP currently represents the mid-price for the fixed leg of interest rate swaps where the floating leg is LIBOR.

After year-end 2021, the FCA intends that it will no longer be necessary for it to sustain LIBOR through its influence or legal powers. The FCA is therefore calling for firms to transition from LIBOR to alternative rates by the end of 2021.

The UK's Working Group on Sterling Risk-Free Reference Rates was established to implement the Financial Stability Board's recommendation<sup>7</sup> to develop and promote alternative risk-free rates (RFRs) for use instead of LIBOR-style reference rates. In April 2017, the Working Group recommended the SONIA benchmark as their preferred RFR and since then the Working Group has been focused on how to transition to using SONIA across sterling markets. The pace of transition is steadily increasing and it is estimated that some 43.5% of new sterling swap cleared transactions (by notional value) now reference SONIA rather than LIBOR<sup>8</sup>.

SONIA was launched in 1997 by the Wholesale Market Brokers Association (WMBA - now the European Venues and Intermediaries Association, EVIA). The Bank of England became the benchmark administrator in April 2016 and reformed the benchmark in April 2018. The key elements of the reform<sup>9</sup> were to:

- Broaden the data used to calculate SONIA to include overnight unsecured transactions negotiated bilaterally, as well as those arranged through brokers;
- Change the averaging methodology to a volume-weighted trimmed mean; and
- Change the publication time from 18.00 UK time to 09.00 UK time on the following business day.

### An ISR with SONIA as the Floating Leg

The movement away from GBP LIBOR to SONIA is expected to lead to diminishing volume in the existing ISR GBP benchmark as the transition progresses and demand for SONIA based swaps increases.

IBA is seeking market participants' views as to whether IBA should introduce a new suite of ISR tenors which would have SONIA as the floating leg. This would be done contemporaneously with keeping the existing GBP LIBOR-based benchmark for as long as necessary and/or possible. IBA would intend to use the same methodology, processes and governance as for the existing benchmark.

Instead of, or in addition to Fixed/Float swaps with the floating leg being SONIA, Float/Float swaps LIBOR/SONIA may also be considered.

IBA and the Oversight Committee consider that such a new benchmark suite should be introduced in parallel to the existing rates. Market participants' views on this would be welcomed, as well as on the timing of the introduction and preferred publication time.

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<sup>7</sup> [https://www.fsb.org/wp-content/uploads/r\\_140722.pdf](https://www.fsb.org/wp-content/uploads/r_140722.pdf)

<sup>8</sup> <https://www.isda.org/a/J2qME/Interest-Rate-Benchmarks-Review-Q2-2019-and-1H-2019.pdf>

<sup>9</sup> See <https://www.bankofengland.co.uk>



## Feedback Request

IBA is asking for stakeholder feedback on the possible expansion of data used in the ISR calculation and on the potential introduction of ISR rates with SONIA as the floating leg of the interest rate swap.

Respondents are requested to provide feedback to IBA at [IBA@theice.com](mailto:IBA@theice.com) on or before **Monday October 14, 2019**.

A questionnaire requesting specific feedback from market participants is attached. More general feedback by email or letter is also welcome.

After the feedback period has closed, IBA will publish a feedback statement summarising responses. IBA will also publish the comments received unless confidentiality has been requested by the originator of the comments.

### Feedback Questions on the Possible Expansion of Data used in ISR

- Q1 What are your views on including non-CLOB data to enable IBA to produce ISR rates in times of low liquidity and/or high volatility?
- Q2 Do you have any comments on what non-CLOB data should be included? Please explain your answer.
- Q3 Do you consider the waterfall methodology described by IBA a good approach? (Yes/No)
- Q4 If you consider that a waterfall methodology would be a good approach, would you suggest that it should be an integral part of the benchmark methodology or published as a separate rate that could be used as a contractual fall-back that would apply before existing contractual fall-backs? Please explain your reasons.
- Q5 Are there other approaches that you would suggest that IBA explore? If so, please outline them.
- Q6 Do you consider that it would be desirable to link the business day calendar used in the ISDA Floating Rate Option definition to the publication schedule of the relevant ISR? (Yes/No) Please explain your reasons.
- Q7 If your answer is Yes to Q6, how many years would you need such schedule to be published out to?
- Q8 Do you consider that an appropriate fall-back in the ISDA Floating Rate Option definitions, in event of No Publication of ISR, is to use the preceding day's rate? (Yes/No) Please explain your reasons.
- Q9 Please add any additional comments you may have about possible ways to avoid or reduce the No Publications.

### Feedback Questions on an ICE Swap Rate with SONIA as the Floating Leg

- Q10 Do you consider that IBA should introduce an ISR with SONIA as the floating leg? (Yes/No)
- Q11 If your answer is No to Q10, please explain your reasons and then go to Q18.
- Q12 If your answer is Yes to Q10, do you consider that the new benchmark suite should be introduced in parallel with the existing GBP ISR, so that both are published? (Yes/No)
- Q13 If your answer is No to Q12, please explain your reasons.
- Q14 Do you consider that such a new benchmark should have the same tenors as GBP ISR now (i.e. 1 year, 2-10 years inclusive, 12 years, 15 years, 20 years, 25 years and 30 years)? (Yes/No)



- Q15 If your answer is No to Q14, what tenors would you suggest?
- Q16 At what UK time(s) do you consider that the new benchmark should be published? Please explain your reasons.
- Q17 Please add any additional comments about the possible introduction of an ISR with SONIA as the floating leg.

**General Feedback Question about ISR**

- Q18 Please add any additional comments you may have about ISR.



## Appendix

### ISR No Publications

The ISR No Publications for the period April 1, 2015 to August 5, 2019 are summarised in the following table:

ISR RUN	1Y	2Y	3Y	4Y	5Y	6Y	7Y	8Y	9Y	10Y	12Y	15Y	20Y	25Y	30Y	Pub. Days	Tenors
EUR 1100	4	5	5	5	5	5	5	5	5	5	5	5	6	6	5	1111	15
EUR 1200	4	6	7	7	6	7	7	7	7	6	7	7	7	7	6	1111	15
GBP 1100	82		1	5	2	5	3	10	10	2	4	1	3	8	2	1098	15
USD 1100	49	8	11	51	9	50	11	90	100	9		13	16		8	1086	13
USD 1500	65															1061	1
USD SPREADS 1100		11	11	174	6		7			6						1086	5*

\* USD SPREADS had 6 tenors for the first 648 publication days of this period (until November 1, 2017), after which the 4Y tenor was discontinued

This period contains 1134 weekdays:

- EUR
  - 1111 publication days
  - 23 public holidays
- GBP
  - 1098 publication days
  - 36 public holidays
- USD
  - 1086 publication days
  - 25 Early Close days, meaning the USD 1500 run had 1061 publication days
  - 48 public holidays (including day of mourning for President George H.W. Bush).



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The approach set out in this document is subject to change in response to feedback from market participants and other stakeholders and IBA's further development work.

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## Feedback Questionnaire

### ICE Swap Rate Feedback Questionnaire

IBA seeks stakeholder feedback on the possible expansion of data used in the ISR calculation and on the potential introduction of ISR rates with SONIA as the floating leg of the interest rate swap.

Respondents are requested to provide feedback to IBA at [IBA@theice.com](mailto:IBA@theice.com) by **5pm London time on Monday October 14, 2019**. Please attach additional pages if required for your responses.

This questionnaire requests specific feedback from market participants but more general feedback by email or letter is also welcome.

### Contact Information

<b>Name</b>	
<b>Position</b>	
<b>Organisation (if any)</b>	
<b>Telephone</b>	
<b>Email</b>	

### Possible Expansion of Data used in ISR

For Qs 3, 4, 6 and 8 below, please circle your answer or delete the answer that does not apply.

<b>Q1</b>	<b>What are your views on including non-CLOB data to enable IBA to produce ISR rates in times of low liquidity and/or high volatility?</b>	
<b>Q2</b>	<b>Do you have any comments on what non-CLOB data should be included? Please explain your answer.</b>	



Q3	Do you consider the waterfall methodology described by IBA a good approach?	Yes / No
Q4	If you consider that a waterfall methodology would be a good approach, would you suggest that it should be an integral part of the benchmark methodology or published as a separate rate that could be used as a contractual fall-back that would apply before existing contractual fall-backs? Please explain your reasons.	Part of the methodology / As a separate rate
Q5	Are there other approaches that you would suggest that IBA explore? If so, please outline them.	
Q6	Do you consider that it would be desirable to link the business day calendar used in the ISDA Floating Rate Option definition to the publication schedule of the relevant ISR? Please explain your reasons.	Yes / No
Q7	If your answer is Yes to Q6, how many years would you need such schedule to be published out to?	
Q8	Do you consider that an appropriate fall-back in the ISDA Floating Rate Option definitions, in event of No Publication of ISR, is to use the preceding day's rate? Please explain your reasons.	Yes/No
Q9	Please add any additional comments you may have about possible ways to avoid or reduce the No Publications.	



### An ICE Swap Rate with SONIA as the Floating Leg

For Yes/No questions below, please circle your answer or delete the answer that does not apply.

Q10	Do you consider that IBA should introduce an ISR with SONIA as the floating leg?	Yes / No
Q11	If your answer is No to Q10, please explain your reasons and then go to Q18.	
Q12	If your answer is Yes to Q10, do you consider that the new benchmark suite should be introduced in parallel with the existing GBP ISR, so that both are published?	Yes / No
Q13	If your answer is No to Q12, please explain your reasons.	
Q14	Do you consider that such a new benchmark should have the same tenors as GBP ISR now <sup>10</sup> ?	Yes / No
Q15	If your answer is No to Q14, what tenors would you suggest?	
Q16	At what UK time(s) do you consider that the new benchmark should be published? Please explain your reasons.	
Q17	Please add any additional comments about the possible introduction of an ISR with SONIA as the floating leg.	

<sup>10</sup> 1 year, 2 - 10 years inclusive, 12 years, 15 years, 20 years, 25 years and 30 years.



**General Feedback**

Please attach additional pages if required for your response.

<b>Q18</b>	<b>Please add any additional comments you may have about ISR.</b>	
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**Publication of this Completed Questionnaire**

IBA will publish your completed questionnaire unless you circle No or delete Yes in the box below to request confidentiality.

<b>Do you agree to this completed questionnaire being published by IBA?</b>	<b>Yes / No</b>
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Please email your completed questionnaire to [IBA@theice.com](mailto:IBA@theice.com) by 5pm London time on Monday October 14, 2019.

Or post it, to arrive by 5pm London time on Monday October 14, 2019 to:

ICE Benchmark Administration Limited  
Milton Gate  
60 Chiswell Street  
London EC1Y 4SA