ICE Benchmark Administration™

ICE SONIA Indexes

April 2021

Contents

Executive Summary

The transition from Sterling LIBOR® (LIBOR®) to the Sterling Overnight Index Average (SONIA) benchmark is well underway. The capital markets are transitioning from LIBOR to SONIA and use of SONIA in the derivatives markets has expanded rapidly over the past year. Starting in the second quarter of 2021, SONIA is expected to be the benchmark interest rate used in the majority of commercial lending facilities in the UK.

Since August 2020, the Bank of England has published a Bank of England SONIA Index. This Index simplifies and standardises the calculation of interest for financial contracts referencing SONIA by providing pre-calculated compound interest values for each business day. This makes it ideal for use in certain financial agreements.

ICE Benchmark Administration Limited (IBA), a leading provider of global interest rate and other financial benchmarks, is providing an enhanced set of ICE SONIA Indexes to meet the additional operational and economic requirements of certain lenders and borrowers, as described below.

Operational Considerations

IBA is introducing the ICE SONIA Indexes because many lenders and borrowers would like to be able to determine the total interest due on a loan before the end of the accrual period. This would allow the borrower and lender to agree on the interest amount that is to be paid and ensure that payment is made and clears on the appropriate day. One way that the interest amount can be calculated before the end of an accrual period is by using a lookback. Specifically, IBA provides SONIA Indexes calculated using a lookback without an observation shift, also known as a “lag”. The lag calculation is explained within the calculation section of this document.

Some borrowers would like a SONIA Index that provides settings on weekends and bank holidays to facilitate accounting for loan accruals on reporting dates that may not business days (e.g. quarter-end, or year-end). This will be an important systems issue as SONIA becomes the dominant benchmark in the UK lending markets.

Economic Considerations

If, in the current low interest rate environment, interest rates were to fall below zero, lenders would potentially be required to pay interest to borrowers. This could cause difficulties for lenders, especially if deposit rates do not become negative as well (i.e. interest rates paid to “core depositors” end up being floored at zero). To avoid these issues, some lenders would like to reference a SONIA Index with a minimum SONIA rate of 0%, also known as a floor of 0%.

IBA is producing the ICE SONIA Indexes to address these considerations, as set out in the table below.

<table>
<tr><th>Floor</th><th>Lag</th><th>Lookback (business days)</th><th>Index Calculated for Non-Business Days</th></tr>
<tr><td rowspan="3">None</td><td colspan="2">None</td><td rowspan="6">Yes</td></tr>
<tr><td rowspan="2">Lag</td><td>2</td></tr>
<tr><td>5</td></tr>
<tr><td rowspan="3">0%</td><td colspan="2">None</td></tr>
<tr><td rowspan="2">Lag</td><td>2</td></tr>
<tr><td>5</td></tr>
</table>

IBA is not explicitly publishing any indexes calculated using a shift, as such indexes can be derived manually using the index with no lookback. For more details on manually shifting an index, refer to the section on the use of the IBA SONIA Indexes.

Calculation Methodology

All ICE SONIA Indexes use the same underlying calculation methodology for determining index values for business days. This is based upon the calculation approach used by the Bank of England.

$$Compounded\ Index_i = Compounded\ Index_{i-1} \times \left(1 + \frac{SONIA_{i-N-1} \times Weighting}{365}\right)$$

Where:

Compounded $Index_i$	=	The index for business day i, calculated and published on day i. All published ICE SONIA Index values are rounded to 8 decimal places. This matches the rounding used by the Bank of England's SONIA Index. Compound $Index_1$ = 100. Day 1 for ICE SONIA Indexes without a lookback is 23 April 2018. For indexes with an N day lookback, Day 1 is N business days after 23 April 2018.
Compounded $Index_{i-1}$	=	The index value calculated on business day i-1. While the published value of the index is always rounded to 8 decimal places, the underlying calculation uses the previous day's index value that has been rounded to 18 decimal places. This again matches the rounding approach used by the Bank of England.
$SONIA_{i-N-1}$	=	The SONIA rate with an effective date of i-N-1, calculated and published by the Bank of England on business day i-N. Where N is the number of days lookback or 0 for an index without any lookback. For indexes without any lookback, this will be equal to i-1, i.e. the calculation on Day i uses the SONIA rate for the previous business day, which is published by the BoE on day i.
Indexes using a Floor	=	For an index with a floor, if the SONIA value on the relevant business day is below the floor value, then the floor value will be used within the index calculation instead of the actual SONIA value. For an index with a floor the rate used in a calculation is as follows. $$Maximum(Floor\ value, SONIA_{i-N-1})$$
Weighting	=	The weighting to apply to the SONIA rate for business day i-N-1. The Weighting will equal the number of calendar days from business day i-1 to business day i, i.e. the number of calendar days between the previous calendar day and the current calendar day. For a typical week with no UK holidays, the weighting will be 1 on Monday through to Thursday and 3 on Friday.

ICE SONIA Index - Standard

The standard ICE SONIA Index replicates the Bank of England SONIA Index calculation.

The index value for each day is calculated using the SONIA interest rate for the previous business day, which is published on the same day as the index calculation.

Example 1: Calculating an index value for Wednesday 20 January 2021.

- ICE SONIA Index value for the previous business day, Tuesday 19 Jan 2021 = 101.325071500536 (12dp[1])
- SONIA value effective for Tuesday 19 January 2021 = 0.0500%
  This is published by the Bank of England on Wednesday 20 January 2021 at around 9:00am, after which the ICE SONIA Index can be calculated.
- There is 1 calendar day between Wednesday 20 January 2021 and the previous business day.

$$Index\ Value = 101.325071500536 \times \left(1 + \frac{0.0500\% \times 1}{365}\right)$$

$$Index\ Value = 101.325210302004\ (12dp)$$

$$Published\ Index\ Value = 101.32521030\ \ (Rounded\ to\ 8dp)$$

Example 2: Calculating an index value for Monday 22 March 2021.

- ICE SONIA Index value for the previous business day, Friday 19 March 2021 = 101.333121462700 (12dp)
- SONIA value effective for Friday 19 March 2021 = 0.0485%
  This is published by the Bank of England on Monday 22 March 2021 at around 9:00am, after which the ICE SONIA Index can be calculated.
- There are 3 calendar days between Monday 22 March 2021 and the previous business day.

$$Index\ Value = 101.333121462700 \times \left(1 + \frac{0.0485 \times 3}{365}\right)$$

$$Index\ Value = 101.333525407061\ (12dp)$$

$$Published\ Index\ Value = 101.33352541\ \ (Rounded\ to\ 8dp)$$

[1] Example calculations within this document are shown to 12 decimal places. This matches the precision supported by Excel and enables these examples to be pasted into a spreadsheet for ease of replication. Actual ICE SONIA Index calculations use index values that are rounded to 18 decimal places.

ICE SONIA Index - Standard - Calculation for Non-Business Days

The standard ICE SONIA Index provides index values for non-business days. The index value for a non-business day is calculated as follows:

$$Compounded\ Index_{nbd} = Compounded\ Index_{bd} \times \left(1 + \frac{SONIA_{bd-N-1} \times Weighting}{365}\right)$$

Where:

Compounded $Index_{nbd}$	=	The index value for non-business day, nbd. This index value will be calculated and published on the business day that follows this non-business day.
Compounded $Index_{bd}$	=	The index value for the business day, bd, that preceded the non-business day, nbd. For a typical Saturday and Sunday, the preceding business day will be Friday. Index values for non-business days are always calculated based upon the preceding business day and are never calculated based upon the index value for a previous non-business day. For example, the index value for a Sunday is calculated based upon the index value on the preceding Friday, not upon the index value for Saturday.
$SONIA_{bd-N}$	=	Where N is the number of days lookback, or 0 for an index without any lookback. The SONIA rate with an effective date of bd-N, calculated and published by the Bank of England on business day bd-N+1. For example, for an index with no lookback, the calculation of an index value for a typical Saturday will reference the SONIA rate with an effective date of the previous business day, Friday. This SONIA value would be published by the Bank of England on Monday. (This is why index values for non-business days can only be published on business days.)
Indexes using a Floor	=	For an index with a floor, if the SONIA value on the relevant business day is below the floor value, then the floor value will be used within the calculation instead of that SONIA value. For an index with a floor the rate used in a calculation is as follows. $$Maximum(Floor\ value, SONIA_{i-N-1})$$
Weighting	=	The weighting to apply to the SONIA rate for business day i-N-1. The Weighting equals the number of calendar days from business day bd to non-business day nbd. For a typical weekend with no UK holidays, the weighting will be 1 on Saturday and 2 on Sunday.

The index values for non-business days are calculated and published on the first business day following the non-business day(s). For example, the index values for both a Saturday and Sunday are typically published on a Monday. ICE SONIA Index values are always calculated and published on the days that the Bank of England publishes SONIA i.e. London good business days.

Example 3: Calculating an index value for Sunday 21 March 2021.

- ICE SONIA Index value for the previous business day, Friday 19 March 2021 = 101.333121462700 (12dp)
- SONIA value effective for Friday 19 March 2021 = 0.0485%
  This is published by the Bank of England on Monday 22 March 2021 at around 9:00am, after which the ICE SONIA Index can be calculated.
- There are 2 calendar days between Sunday 21 March 2021 and the previous business day.

$$Index\ Value = 101.333121462700 \times \left(1 + \frac{0.0485\% \times 2}{365}\right)$$

$$Index\ Value = 101.333390758941\ (12dp)$$

$$Published\ Index\ Value = 101.33339076\ (Rounded\ to\ 8dp)$$

IBA chose this approach for calculating non-business day values as it is simple and aligns with upcoming ISDA standards for a SONIA Index.

ICE SONIA Index - with a 0% floor

This index can be used by borrowers and lenders that do not wish to have negative SONIA accruals on SONIA based loans.

The ICE SONIA Index with 0% floor is calculated using a minimum interest rate of 0%. If the daily SONIA value falls below 0% then this index is calculated using 0%, instead of the actual SONIA value.

Negative SONIA rates would result in the index having the same value each day, until the SONIA rate becomes positive again.

ICE SONIA Index - with a Lookback

Many lenders and borrowers would like to be able to determine the total interest for a loan before the end of a loan accrual period, or the loan term. This allows the borrower and lender to agree on the interest amount before the end of the term and for the payment from the borrower to the lender to have cleared by the end of the loan.

Parties to the loan can agree to use a time-shifted view of SONIA rather than the actual SONIA rate. This is referred to as a lookback. When a lookback is used, the calculation for each day's interest uses the interest rate for N business days earlier than an index with no lookback. For example, N equals 5 if referencing SONIA published five business prior to the index date.

An index calculated using an N day lookback can be calculated and published N days in advance. IBA publishes ICE SONIA Indexes using the two most frequently used lookback periods, of 2 business days and 5 business days, corresponding to typical payment clearing timescales.

More specifically, IBA provides SONIA Indexes calculated using a lookback with **no observational shift**. This approach is also referred to as a lag. With a lag, the weighting applied to the SONIA rate that is referred to within the calculation, is always determined by the calculation period and not the observation period. For example, if on the day of calculation there has been only one calendar day since the last business day, then the SONIA rate that is referenced will always have a weighting of 1. This is the case even if the SONIA rate that is referred to was for a Friday and would have had a weighting of 3 applied for an index with no lookback. This is illustrated in the following example.

Example 4: Calculating an index value for Wednesday 20 January 2021, for an index with a 2-day lag.

Note - for this index with a 2-day lag, the index value for Wednesday 20 January 2021 can be calculated and published on **Monday 18 January 2021**, 2 business days earlier than an index with no lookback.

- ICE SONIA Index value for the previous business day, Tuesday 19 January 2021 = 101.324367295616 (12dp)
- Two business days before Wednesday 20 January is Monday 18 January 2021. The lag calculation refers to the SONIA rate published by the Bank of England on this day. The SONIA rate published on this day has an effective date of Friday 15 January 2021. This day's SONIA rate had a value of 0.0498%
- The weighting applied to this rate is 1 - as there is one calendar day between the day being published (Wednesday 20 January 2021) and the previous business day (Tuesday 19 January 2021). For an index with no lookback, the index value for Monday 18 January would have also been calculated using Friday's rate but in this case the weighting would have been 3, as there are 3 calendar days since the previous business day on Friday.

$$Index\ Value = 101.324367295616 \times \left(1 + \frac{0.0498\% \times 1}{365}\right)$$

$$Index\ Value = 101.324505540917\ (12dp)$$

$$Published\ Index\ Value = 101.32450554\ (Rounded\ to\ 8dp)$$

Using the ICE SONIA Indexes

The ICE SONIA Indexes can be used to calculate the annualised interest rate and interest amounts due on SONIA based loans as follows:

- Step 1 - Use the index to calculate the annualised interest rate
- Step 2 - Round the calculated rate to the precision specified in the loan contract
- Step 3 - Add any specified spread(s)
- Step 4 - Use the rounded interest rate and spread(s) to calculate the interest amount

Step 1 - Calculating the Annualised Interest Rate

The annualised interest rate on a loan is calculated using the following formula.

$$Annualised\ Interest\ Rate\ = \left(\frac{Index\ Value\ on\ End\ Date}{Index\ Value\ on\ Start\ Date} - 1\right) \times \frac{365}{Duration}$$

Example for a loan based upon the index with a 5-day lag and a 0% floor. (These index values are published 5 business days in advance.)

Loan is for £100m with a duration of 14 days, from Monday 1 March 2021 to Monday 15 March 2021

Index Publication Date	Index Effective Date	Index Value
Mon 22 Feb 2021	Mon 01 Mar 2021	101.32971368
Tue 23 Feb 2021	Tue 02 Mar 2021	101.32984971
Wed 24 Feb 2021	Wed 03 Mar 2021	101.32998463
...	....	....
Mon 08 Mar 2021	Sat 13 Mar 2021	101.33136384
Mon 08 Mar 2021	Sun 14 Mar 2021	101.33149932
Mon 08 Mar 2021	Mon 15 Mar 2021	101.33163480

Index Value on Loan Start Date

Index Value on Loan End Date

For the example loan, ending on 15 March 2021, the interest rate can be calculated 5 business days in advance on Monday 8 March 2021. This calculation is as follows:

$$Annualised\ Interest\ Rate\ = \left(\frac{101.33163480}{101.32971368} - 1\right) \times \frac{365}{14}$$

$$Annualised\ Interest\ Rate\ = 0.0494290776\%$$

Step 2 - 4 - Calculating the Interest Amount

Lenders and borrowers can use the rounded annualised interest rate, combined with any specified spread(s) to calculate the interest amount as follows:

$$Interest\ Amount\ = Notional\ \times (Rounded\ Annualised\ Interest\ Rate + Spread)\ \times \frac{Duration}{365}$$

For the example loan, assume that interest is specified to be rounded to 5dp and there is a spread set at 0.01%:

$$Interest\ Amount\ = £100m \times (0.04943\% + 0.01\%) \times \frac{14}{365}$$

$$Interest\ Amount\ = £2{,}729.51$$

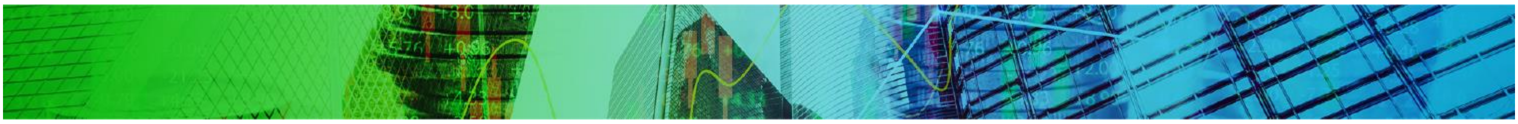
Manually Creating a Shift of N Business Days

Some users of the ICE SONIA Index may prefer an index that uses a lookback with an observational shift, rather than a lookback without an observational shift, also known as a lag. IBA has decided not to publish explicit shifted indexes as users can manually shift one of the published indexes with no lag, to create their own lagged index.

It is important to note that when using a shifted index, the user must consider the potential difference in duration between the loan period and the shifted observation period, as these may not be for the same number of days. This will occur when shifting the start and end dates by N business days results in the shifted start date moving a different number of calendar days than the shifted end date. (This is illustrated in the example below.)

To manually shift one of the indexes with no lag (one of which has a 0% floor) the following steps should be followed to calculate the annualised interest rate and the interest amount:

- **Step 1** - Shift the start date and the end date of the loan back by the required number (N) of business days. Note - that a user can choose any value of N that they wish.
- **Step 2** - Refer to the ICE SONIA Index values on each of these **shifted** dates.
- **Step 3** - Calculate the annualised interest rate, with the duration determined by the number of calendar days between the **shifted** loan start and end dates.
- **Step 4** - Calculate the interest amount, with the duration determined by the number of calendar days between the **actual** loan start and end dates, i.e. the dates before applying the shift.

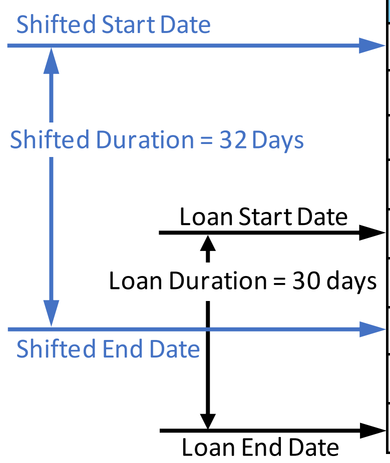


Example Annualised Interest Rate Calculation for a Shift

The following example is for a 30-day loan, from Monday 21 December 2020 to Wednesday 20 January 2021. The loan is based upon the ICE SONIA Index with a 0% floor and a **2 business day shift** is applied.

- **Step 1** - Shift the start date and the end date of the loan back by 2 business days.

The following diagram shows the original loan dates in **black** and the shifted dates in **blue**.



Index Publication Date	Index Date	Index Value
Thu 17 Dec 2020	Thu 17 Dec 2020	101.32072045
Fri 18 Dec 2020	Fri 18 Dec 2020	101.32085564
Sat 19 Dec 2020	Sat 19 Dec 2020	101.32098972
Sun 20 Dec 2020	Sun 20 Dec 2020	101.32112379
Mon 21 Dec 2020	Mon 21 Dec 2020	101.32125787
....	....	....
Mon 18 Jan 2021	Mon 18 Jan 2021	101.32493409
Tue 19 Jan 2021	Tue 19 Jan 2021	101.32507150
Wed 20 Jan 2021	Wed 20 Jan 2021	101.32521030

In this case the end date has been shifted back by 2 calendar days, whereas the start date has moved across a weekend and as a result has moved back by 4 calendar days. The shifted period is now 32 days, 2 days longer than the actual loan period. This difference in dates must be taken into account when calculating the annualised interest and the interest amount for the loan.

- **Step 2** - Refer to the ICE SONIA Index values on each of these **shifted** dates.

SONIA Index Value on shifted Start Date (17 Dec 2020) = 101.32072045
SONIA Index Value on shifted End Date (18 Jan 2021) = 101.32493409

- **Step 3** - Calculate the annualised interest rate, with the duration determined by the number of calendar days between the **shifted** loan start and end dates.

Shifted Duration (17 Dec 2020 to 18 Jan 2021) = 32 days

$$Annualised\ Interest\ Rate = \left(\frac{101.32493409}{101.32072045} - 1\right) \times \frac{365}{32}$$

$$Annualised\ Interest\ Rate = 0.047435343\%$$

- **Step 4** - Calculate the interest amount, with the duration determined by the number of calendar days between the **actual** loan start and end dates, i.e. the dates before applying the shift.

Using the previous example, together with an annualised interest rate rounding of 5dp and a spread value of 0.03% for a loan of £100m the interest would be:

Actual Duration = 30 days

$$Interest\ Amount\ = £100m \times (0.04744\% + 0.03\%) \times \frac{30}{365}$$

$$Interest\ Amount\ = £6{,}364.93$$

How to Access the ICE SONIA Indexes

IBA is currently publishing the ICE SONIA Indexes which can be referenced in lending contracts or used to help verify interest accruals in loan agreements.

The ICE SONIA Indexes are published every day at around 9.30am via secure file transfer protocol and through authorised market data vendors.

For more information, refer to the ICE SONIA Indexes website or contact IBA at IBA@ice.com

Appendix - Calculation of Index Values for Non-Business Days

The industry standard for calculating interest over a period separated by non-business days has a single compounding "step" from one business day to the next with a weighting applied to the overnight rate to account for the additional calendar days. For example, the interest from Friday to Monday is calculated using Friday's interest rate, multiplied by a weighting of 3, to account for the three calendar days from Friday to Monday.

Any approach for calculating index values for non-business days must conform to this approach for compounding from business day to business day.

Having a single compounding step results in slightly less interest than would have been calculated had Friday's interest rate instead been compounded on each consecutive calendar day, i.e. from Friday to Saturday, then from Saturday to Sunday and finally from Sunday to Monday.

In the following example, the interest rate on Friday is 2% and the index value on Friday is 100.

The industry standard approach for calculating the index for Monday would be:

$$Monday\ Index\ Value = 100 \times \left(1 + \frac{2\% \times 3}{365}\right)$$

$$Monday\ Index\ Value = 100.016438356164\ (12dp)$$

$$Monday\ Index\ Value = 100.01643836\ (Rounded\ to\ 8dp)$$

If the interest had instead been compounded on each of these three calendar days individually, then the calculation for Monday's index value would have been as follows:

$$Monday\ Index\ Value = 100 \times \left(1 + \frac{2\% \times 1}{365}\right)^3$$

$$Monday\ Index\ Value = 100.016439256913\ (12dp)$$

$$Monday\ Index\ Value = 100.01643926\ (Rounded\ to\ 8dp)$$

The additional compounding on each individual calendar day increases the total amount of interest by a small amount. The resulting index value for Monday is 0.000000900749 higher than the result from the industry standard business-day to business-day compounding approach. This is equivalent to an increase in daily interest of 0.00011%. Therefore, to fit in with existing conventions the index values for non-business days cannot be calculated by compounding each calendar day using the RFR rate from the previous business day.

In line with ISDA standards, IBA has adopted an approach where each non-business day index value is based upon the index value for the preceding business day. The interest rate applied is that for the preceding business day, together with a weighting that is equal to the number of calendars days since that preceding business day. For example, Saturday's index value is calculated using Friday's index value and Friday's interest rate with a weighting of 1. Sunday's index value is calculated using Friday's index value and Friday's interest rate with a weighting of 2. The index value for a non-business day is never calculated using the index value for another business day. For example, a Sunday index value is never calculated using the index value for Saturday.

This approach is essentially the same as linearly interpolating non-business day values using the index values for the business days either side of the non-business days.

IBA adopted this approach as it has the following key advantages:

- It corresponds to the upcoming ISDA standards for use of SONIA index values.

- It is easy for users of the ICE SONIA Indexes to understand.
- It fits with the existing business-day to business-day compounding convention.

It is important to note that any approach for calculating index values for non-business days cannot both exactly mimic the effect of calendar day compounding for every calendar day at the official RFR rate **and** remain compatible for with the existing business day to business day calculation convention.

Implied Overnight Interest Rates

It is possible to imply the overnight interest rate between any two consecutive index values as follows:

$$Implied\ Overnight\ Rate = \left(\left(\frac{Index\ Value_n}{Index\ Value_{n-1}}\right) - 1\right) \times 365$$

Where:

Index $Value_n$	=	The index value for any calendar day, n.
Compounded $Index_{n-1}$	=	The index value for the calendar day prior to day n

Index values published by IBA are rounded to 8dp. Using these rounded index values to imply an overnight interest rate will always result in a slight approximation of the actual overnight interest rate that was used. This will be the case even for consecutive business days. For example:

Index value for Monday 22 March 2021 - 101.33352541
Index value for Tuesday 23 March 2021 - 101.33366117
Implied overnight interest rate for Monday to Tuesday = 0.0489003%
Actual SONIA rate effective on Monday = 0.0489%

The ICE SONIA Index uses an index base of 100 and 8 decimal places of precision. This provides sufficient accuracy to ensure that, for two consecutive business days, when the implied interest rate is rounded to the same precision as SONIA itself, i.e. 4dp, then the implied interest rate will match the official SONIA rate.

For some users on ICE SONIA Index values for non-business days it is useful to understand the behaviour of implied overnight rates on those non-business days.

The implied overnight interest rates are as follows when using the IBA calculation approach for non-business days for the Friday to Monday example used previously:

Day	IBA Calculated Index Values (Rounded to 8dp)	Implied Overnight Interest Rate (Rounded to 4dp)
Friday	100	2.0000%
Saturday	100.0054795	1.9999%
Sunday	100.0109589	1.9998%
Monday	100.0164384	

The rounded implied interest rate implied for Friday to Saturday is equal to the RFR value on Friday of 2%. The implied interest rate for Saturday to Sunday is slightly lower than the official rate and the interest rate implied for Sunday to Monday is lower still. This will always be the case, with each successive non-business day having a slightly lower implied interest rate than the day before.

IBA considered alternative approaches for calculating index values for non-business days. These approaches aim to either make the implied overnight rate more consistent for non-business days or to ensure that the implied overnight rate matches the official RFR rate for more days:

> **Approach 1 -** Equalising the interest rate over the weekend. This approach requires determining the interest rate that when compounded every day over a weekend, would result in the same index value on Monday as the industry standard approach. This approach ensures that the implied overnight interest rate is identical for every day of the weekend. However, this implied rate will always be lower than the official RFR rate for the Friday before the weekend.
>
> **Approach 2 -** Using the Official RFR rate for Friday night's overnight rate and then determining the interest rate that when compounded daily for the remaining two days, would result in the same index value on Monday. This approach ensures that the implied interest rate matches the official rate for Friday night. The implied rates for the remaining two nights are identical - although again this rate will be lower than the official RFR rate - and also lower than the rate set under approach 1.
>
> **Approach 3 -** This approach requires the calculation of two indexes - a Start Index and an End Index. The interest for a period is determined by taking the index value from the Start Index on the loan start date and the index value from the End Index on the loan end date. These indexes have the same index values for business days but use different approaches for calculating index values for non-business days. For the weekend, the Start Index essentially works backwards from the Monday. Sunday's index value is Monday's index value less the interest for one day, calculated using the RFR on Friday and a weighting of one. Saturday's index value is Monday's index value, less two days interest calculated using the RFR on Friday and a weighting of two. The End Index is calculated in the same way as IBA calculates values for non-business days. The overall result is that the implied overnight interest rate for both Friday to Saturday and Sunday to Monday match the official RFR rate for Friday.

The above approaches could potentially be viewed as being more "mathematically correct" by some users. However, IBA decided that the added complexity of such approaches outweighed any such potential advantages. These issues of extra complexity were regarded as significant as the ICE SONIA Indexes are aimed primarily at providing a simple mechanism for calculating interest for a broad section of lenders and borrowers with differing levels of understanding of daily compounding using an RFR. Such issues of complexity were especially acute for Approach 3, as it requires the calculation and publication of separate start and end indexes and would require end users to use these two separate indexes correctly when calculating interest. This would significantly increase the potential for errors.

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