

REFINITIV BENCHMARK SERVICES (UK) LIMITED

Methodology

Refinitiv Term SONIA

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1. INTRODUCTION

1.1 Overview

This document specifies the Methodology of the Refinitiv Term SONIA benchmark (“Benchmark”). It is published on the Refinitiv website¹ and is available on request.

The purpose of the Refinitiv Term SONIA benchmark is to represent the risk-free interest rate for Sterling over the relevant forward-looking tenors as implied by Overnight Index Swap (“OIS”) contracts that reference SONIA.

1.2 Benchmark Administrator

Refinitiv Benchmark Services (UK) Limited (“RBSL”) is the Administrator of the Benchmark. RBSL is incorporated in England and Wales with company number 08541574 and is a wholly owned subsidiary of Refinitiv Limited (“RL”), itself a wholly owned subsidiary within the Refinitiv Group.

RBSL is authorised and regulated in the UK by the Financial Conduct Authority (“FCA”), FCA Reference Number 610678.

As Administrator, RBSL is responsible for collecting input data, determining and publishing the Benchmark, and for all aspects of governance, oversight, compliance and integrity of the Benchmark.

1.3 Description of the Benchmark

The Refinitiv Term SONIA benchmark comprises four tenors: 1 month, 3 months, 6 months and 12 months. It is calculated using a waterfall methodology comprised of two levels (“Level 1” and “Level 2”) and a final integrated fallback level.

Input data for the calculation of Level 1 and Level 2 are committed (i.e. executable) quotes for spot starting SONIA Overnight Index Swap (“OIS”) contracts taken from, respectively, dealer-to-dealer Multilateral Trading Facilities (“MTFs”) and a dealer-to-client trading platform. Input data for the integrated fallback level is compounded overnight SONIA and historical Refinitiv Term SONIA benchmark values.

The Refinitiv Term SONIA benchmark is published on every Business Day at 11:50am London Time.

The Refinitiv Term SONIA benchmark is calculated for Level 1 and Level 2 as the median of mid-rates taken from the MTFs and trading platform over a 20-minute window centred on 11:00am London time. The

¹ www.refinitiv.com/termsonia

integrated fallback level is calculated by applying the historical spread of the Refinitiv Term SONIA benchmark to compounded overnight SONIA to an updated value of compounded overnight SONIA.

1.4 Intended Readership

This document is intended for Stakeholders of the Benchmark.

1.5 Document Publication

This document is available on the Refinitiv website and on request.



2. INPUT DATA

2.1 Level 1 Input Data

Input data for Level 1 of the Methodology is taken from the central limit order books (“CLOB”) of two dealer-to-dealer multilateral trading facilities (“MTF”). Input data comprises committed (i.e. executable) quotes from each CLOB captured every 30 seconds over a 20 minute window from 10:50am to 11:10am London time. The precise time of capture within each 30 second period varies. Quotes are captured 40 times for each MTF over the 20 minute window.

Quotes are captured for spot starting SONIA OIS in respect of the relevant tenors for the Refinitiv Term SONIA benchmark.

2.2 Level 2 Input Data

Input data for Level 2 of the Methodology is taken from a dealer-to-client trading platform. Input data comprises quotes from each dealer captured every 30 seconds over a 20 minute window from 10:50am to 11:10am London time. The precise time of capture within each 30 second period varies. Quotes are captured 40 times over the 20 minute window.

Quotes are captured for spot starting SONIA OIS in respect of the relevant tenors for the Refinitiv Term SONIA benchmark.

2.3 Integrated Fallback Level Input Data

Input data for the integrated fallback level comprises overnight SONIA published daily by the Bank of England and historical values of the Refinitiv Term SONIA benchmark.



3. DETERMINATION OF THE BENCHMARK

3.1 Waterfall Methodology

The Refinitiv Term SONIA benchmark is calculated using Level 1 of the Methodology subject to a threshold. If the threshold is not reached, the Benchmark is calculated using Level 2 of the Methodology subject to a second threshold. If the second threshold is not met, the Benchmark is calculated using the integrated fallback level. The Level 1 and Level 2 thresholds have been calibrated to ensure a sufficient quantity of eligible input data. Any use of the integrated fallback level is indicated when the resulting Benchmark value is published.

The waterfall is applied individually to each tenor of the Benchmark. Consequently, it is possible that different tenors are determined using different levels of the waterfall on the same day.

3.2 Level 1 Determination

Every 30 seconds between 10:50am and 11:10am London time, the committed quotes from the CLOBs of two dealer-to-dealer MTFs are captured. For each set of captured quotes, volume weighted bid and volume weighted offer rates are calculated using a standard clearing notional amount that is specified for each tenor.

A mid-rate is calculated using the volume weighted bid and offer rates, resulting in up to 40 mid-rates for each of the two MTFs. The Refinitiv Term SONIA benchmark is then determined as the median rate of the mid-rates.

In order for a mid-rate to be valid, the volumes of the captured quotes must exceed the standard clearing notional amount on both the bid side and the offer side, and the spread between the volume weighted bid and volume weighted offer rates must be less than or equal to a maximum spread that is specified for each tenor.

The threshold for use of Level 1 in the determination of the Refinitiv Term SONIA benchmark is that at least 36 valid mid-rates are available.



3.3 Level 2 Determination

Every 30 seconds between 10:50am and 11:10am London time, the quotes from a dealer-to-client trading platform are captured. In order to be valid, each bid rate to offer rate must be less than or equal to a maximum spread that is specified for each tenor, and the volume on the bid and offer rate must be greater than or equal to a minimum notional amount.

A mid-rate is calculated using each valid bid rate and offer rate pair. The Refinitiv Term SONIA benchmark is then determined as the median rate of the mid-rates.

The threshold for use of Level 2 in the determination of the Refinitiv Term SONIA benchmark is that at least 100 valid mid-rates are available and that these rates comprise at least a minimum number of valid mid-rates from each of a minimum number of separate dealers.

3.4 Integrated Fallback Level Determination

If the thresholds for use of Level 1 and Level 2 of the waterfall are not reached, the Refinitiv Term SONIA benchmark is determined in accordance with the integrated fallback level.

Under the integrated fallback level, the spread between the Refinitiv Term SONIA benchmark on the previous business day and overnight SONIA compounded to the previous business day is applied to SONIA compounded to the day of the benchmark determination.

On each day t , the spread for Benchmark tenor f , denoted $S(t, f)$ is calculated as

$$S(t, f) = RTS(t - 1, f) - \frac{365}{d(t_0, t - 1)} \cdot \left[\prod_{\tau=t_0}^{t-2} \left(1 + \frac{d(\tau, \tau + 1) \cdot R(\tau)}{365} \right) - 1 \right]$$

where $RTS(t - 1, f)$ is the Refinitiv Term SONIA benchmark published on the preceding Business Day ($t - 1$) for tenor f , $R(\tau)$ is the SONIA rate published by the Bank of England in respect of the day τ , $d(\tau, \tau + 1)$ is the number of calendar days from τ to $\tau + 1$ and $d(t_0, t - 1)$ is the number of calendar days from t_0 to $t - 1$. The product is over all Business Days from t_0 to $t - 2$ where t_0 is 30 calendar days before $t - 2$. If t_0 does not fall on a Business Day, it is moved back to the first preceding Business Day.

The integrated fallback for the Benchmark with tenor f on day t , denoted $IF(t, f)$ is then calculated as

$$IF(t, f) = S(t, f) + \frac{365}{d(t_1, t)} \cdot \left[\prod_{\tau=t_1}^{t-1} \left(1 + \frac{d(\tau, \tau + 1) \cdot R(\tau)}{365} \right) - 1 \right]$$



The product is over all Business Days from t_1 to $t - 1$ where t_1 is 30 calendar days before $t - 1$. If t_1 does not fall on a Business Day, it is moved back to the first preceding Business Day.

3.5 Exercise of Expert Judgment by the Administrator

The administrator, Refinitiv, will not exercise Expert Judgment in the determination of the Refinitiv Term SONIA benchmark.



4. PUBLICATION AND REFIX POLICY

4.1 Publication

The Refinitiv Term SONIA benchmark is published at 11:50am London time on each Business Day. The benchmark is published to 4 decimal places. Any use of the integrated fallback level is indicated when the resulting Refinitiv Term SONIA benchmark value is published.

The Benchmark will be made available on the following Refinitiv EIKON RICs:

- 1-month: <GBPTRR1M=RFTB>
- 3-month: <GBPTRR3M=RFTB>
- 6-month: <GBPTRR6M=RFTB>
- 12-month: <GBPTRR1Y=RFTB>

The benchmark is also available via additional Refinitiv products including Elektron, DataScope and Workspace and is published on a delayed basis at www.refinitiv.com/termsonia.

4.2 Delayed Publication

The Administrator, Refinitiv, may at its discretion delay publication of the Refinitiv Term SONIA benchmark in the event that technical difficulties are preventing receipt of input data or if Refinitiv has reason to believe that either the input data or the determination of the Benchmark includes a potential error. In such cases, all reasonable efforts will be made to publish the Benchmark at the earliest opportunity.

4.3 Refix Policy

If following publication, a material error is identified in the input data or the determination of the Benchmark before 12:50pm London time, the administrator, Refinitiv, will refix the Benchmark.

A material error is one that results in a change of + or – 0.1 basis points to the published value of the benchmark.

Errors that do not result in an intraday refix will be reported quarterly to the independent Oversight Committee and published on the Administrator's public website.



5. Benchmark Methodology Reviews and Change Procedures

5.1 Review of the Methodology and Input Data Providers

The Administrator will carry out a review of the Methodology on at least an annual basis. Additional reviews may be conducted at the Administrator's discretion. Reviews will include an analysis of the underlying market the Benchmark seeks to represent, the availability and sufficiency of quotes from the MTFs and dealer-to-client trading platform, and a review of other potential platforms.

The aim of the review will be to ensure that the Benchmark is still representative of the underlying market, that the input data from the MTFs and dealer-to-client trading platform sufficiently represent the underlying market, and that the current MTFs and dealer-to-client trading platform have been providing input data in an accurate and timely manner. The independent Oversight Committee will provide input into the review.

5.2 Changes to the Methodology

Changes to the Methodology shall be made in accordance with the RBSL Benchmark Methodology Change and Cessation Policy. The combined RBSL Benchmark Methodology Change and Cessation Policy is available at <https://www.refinitiv.com/en/financial-data/financial-benchmarks>.

5.3 Objective of the Methodology

The objective of this Methodology is to reflect best practice across the industry for the calculation and Administration of Benchmarks that seek to represent the behaviour of markets showing similar characteristics as the market for forward SONIA rates. The Methodology shall also comply with all applicable regulations and policies.

5.4 Identification of Potential Limitations of the Benchmark

The ability of the MTFs and dealer-to-client trading platform to provide accurate input data relies on there being a liquid market in SONIA OIS contracts. If any ongoing constraint or fragmentation to liquidity in this market is identified or foreseen, the Administrator will consult with Stakeholders as well as the independent Oversight Committee.



6. GOVERNANCE AND FURTHER INFORMATION

6.1 Benchmark Administrator

Refinitiv Benchmark Services (UK) Limited (“RBSL”) is the Administrator of Refinitiv Term SONIA. RBSL is a Refinitiv company.

As Administrator, RBSL is responsible for collecting input data, determining and publishing the Benchmark, and for all aspects of governance, oversight, compliance and integrity of the Benchmark.

6.2 Oversight Committee

The independent Oversight Committee is responsible for oversight of all aspects of the provision of the benchmark including the reviews of the benchmark definition and Methodology at least annually, overseeing any changes to the benchmark Methodology or cessation of the benchmark, and overseeing the Administrator’s control framework, management and operation of the benchmark.

6.3 Benchmark Manager

A benchmark manager is appointed from time to time by the Administrator who will be a subject matter expert responsible for interpreting the Methodology.

6.4 User Feedback

RBSL shall communicate periodically with stakeholders in order to assess conditions in the market for risk-free interest rates for Sterling over the relevant Benchmark tenors as implied by OIS contracts that reference SONIA and to assess the ongoing fitness and suitability of the Methodology. Such feedback may be used as part of the periodic review of the Methodology.

6.5 Further Information

Refinitiv welcomes feedback and any queries or questions regarding this Methodology or the Refinitiv Term SONIA benchmark should be sent to index_queries@refinitiv.com and include “Refinitiv Term SONIA” in the email subject line.



7. DEFINITION OF KEY TERMS

Capitalised terms used in this document but not otherwise defined are defined in the following table.

Key Term	Definition
Administrator	A natural or legal person that has control over the provision of a benchmark (see Benchmark Regulation)
Authorised Benchmark Administrator	An Administrator that is authorised pursuant to Article 34 of the Benchmarks Regulation
Benchmarks Regulation	Regulation (EU) 2016/1011 (see https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R1011&from=EN)
Business Day	Any day on which banks in London are open for business
Methodology	The written rules and procedures according to which information is collected and the Benchmark is determined
SONIA	The overnight SONIA benchmark administered and published daily by the Bank of England