

Methodology for Calculating and Publishing the RUONIA Index and Averages

Chapter 1. Main terms and definitions

Main terms and definitions used in this Methodology:

The Bank of Russia website – the official website of the Bank of Russia.

RUONIA (Ruble OverNight Index Average) – an interest rate benchmark which is the weighted average interest rate on unsecured overnight ruble lending transactions carried out between the credit institutions put on the list of RUONIA panel banks.

The RUONIA Index – a value equal to one ruble that is capitalised for all RUONIA rates beginning from the first date as of which RUONIA was calculated.

A RUONIA Average – an interest rate benchmark measuring returns on investment for a certain period (term) at RUONIA rates calculated for this period.

The Committee – the RUONIA Oversight Committee established at the Bank of Russia according to Bank of Russia Order No. OD-966, dated 22 June 2020, ‘On the Establishment of the RUONIA Oversight Committee at the Bank of Russia’ (as amended).

Chapter 2. RUONIA Index calculation procedure

2.1. The first value of the RUONIA Index was set as of 11 January 2010 (the first date as of which RUONIA was calculated), with its initial value set equal to one. Further on, the values of the RUONIA Index are calculated as of each

calendar date according to the formula taking into account the actual number of days in a year which the benchmark is related to:

$$\text{Index}(t) = \text{Index}(T) \times \left(1 + \text{RUONIA}(T) \times \left(\frac{d}{366} + \frac{t - T - d}{365} \right) \right), \quad (1)$$

where t – a calendar date as of which the RUONIA Index is calculated;

T – the business day preceding the date t as of which the RUONIA Index was calculated;

$\text{Index}(T)$ – the value of the RUONIA Index as of the date T ;

$\text{RUONIA}(T)$ – the RUONIA value as of the date T expressed in two decimal places; and

d – the number of calendar days in a leap year during the period $[T, t)$.

2.2. The calculation of the RUONIA Index according to the formula specified in paragraph 2.1 of this Chapter enables the calculation of the RUONIA Index as compound interest on the business days when RUONIA was calculated and as simple interest on weekends, holidays, and the days as of which RUONIA was not calculated.

Chapter 3. RUONIA Average calculation procedure

3.1. RUONIA Averages are calculated for one, three and six months based on the RUONIA Index.

3.2. The RUONIA Average for one month is calculated according to the formula:

$$\text{RUONIA}_{1M}(t) = \left(\frac{\text{Index}(t)}{\text{Index}(t - N_{1M})} - 1 \right) \times \frac{D_{1M}}{N_{1M}}, \quad (2)$$

where t – a calendar date as of which the RUONIA Average is calculated;

N_{1M} – the number of calendar days in a one-month period calculated pursuant to paragraph 3.6 of this Chapter;

D_{1M} – the number of days in a year calculated according to the formula:¹

$$D_{1M} = \frac{1}{\frac{w_{1M}}{366} + \frac{1 - w_{1M}}{365}}, \quad (3)$$

where w_{1M} – the portion of calendar days of a leap year in a one-month period calculated as described in paragraph 3.5 of this Chapter.

3.3. The RUONIA Average for three months is calculated according to the formula:

$$RUONIA_{3M}(t) = \left(\frac{\text{Index}(t)}{\text{Index}(t - N_{3M})} - 1 \right) \times \frac{D_{3M}}{N_{3M}}, \quad (4)$$

where t – a calendar date as of which the RUONIA Average is calculated;

N_{3M} – the number of calendar days in a three-month period calculated pursuant to paragraph 3.6 of this Chapter;

D_{3M} – the number of days in a year calculated according to the formula:²

$$D_{3M} = \frac{1}{\frac{w_{3M}}{366} + \frac{1 - w_{3M}}{365}}, \quad (5)$$

where w_{3M} – the portion of calendar days of a leap year in a three-month period calculated as described in paragraph 3.5 of this Chapter.

3.4. The RUONIA Average for six months is calculated according to the formula:

¹ The measures D_{1M} , D_{3M} , D_{6M} can take values within the range of [365, 366] days depending on the number of days in a calendar year during one-, three- and six-month periods, respectively.

² See footnote 1.

$$\text{RUONIA}_{6M}(t) = \left(\frac{\text{Index}(t)}{\text{Index}(t - N_{6M})} - 1 \right) \times \frac{D_{6M}}{N_{6M}}, \quad (6)$$

where t – a calendar date as of which the RUONIA Average is calculated;

N_{6M} – the number of calendar days in a six-month period calculated pursuant to paragraph 3.6 of this Chapter;

D_{6M} – the number of days in a year calculated according to the formula:³

$$D_{6M} = \frac{1}{\frac{w_{6M}}{366} + \frac{1 - w_{6M}}{365}}, \quad (7)$$

where w_{6M} – the portion of calendar days of a leap year in a six-month period calculated as described in paragraph 3.5 of this Chapter.

3.5. The portion of calendar days of a leap year in the period i taking the values 1M (a one-month period), 3M (a three-month period), and 6M (a six-month period) is calculated using the formula:

$$w_i = \frac{v_i}{N_i}, \quad (8)$$

where v_i – the number of calendar days in a leap year during the period i ; and

N_i – the number of calendar days in the period i calculated pursuant to paragraph 3.6 of this Chapter.

3.6. The number of calendar days in the measures N_{1M} , N_{3M} , and N_{6M} , being part of the formulas specified in paragraphs 3.2, 3.3 and 3.4 of this Chapter, is defined as the difference between the date t , as of which a RUONIA Average is calculated, and the dates t_{1M} , t_{3M} , and t_{6M} which are the initial dates of

³ See footnote 1.

the calculation of RUONIA Averages for one, three, and six months, respectively, that are defined as follows.

The dates t_{1M} , t_{3M} , and t_{6M} are defined as the dates in the months of the start of the calculation for one, three, and six months, respectively, before the date t that exactly correspond to the order number of the calendar day of the date t , if such dates exist.⁴

If the months of the start of the calculation do not have dates that would correspond to the order number of the calendar day of the date t , the dates t_{1M} , t_{3M} , and t_{6M} are defined as the last calendar dates of the months of the start of the calculation for one, three, and six months, respectively, before the date t .⁵

Chapter 4. Ensuring the continuity of the calculation

The calculation of RUONIA Averages is based on RUONIA values and is technically related to the RUONIA calculation. Therefore, the risks of errors in the calculation of RUONIA Averages stem entirely from the risks of errors in the RUONIA calculation which the Bank of Russia aims to mitigate by applying the Methodology for Calculating and Publishing RUONIA (Ruble Overnight Index Average) approved by the Bank of Russia Order and published on the Bank of Russia website.

Chapter 5. Publishing the RUONIA Index and Averages

5.1. The values of the RUONIA Index and Averages for one, three and six months as of each day since the date of the previous publication of the RUONIA Index and Averages are published on the Bank of Russia website

⁴ For instance, if the RUONIA Average is calculated as of 15 March for one, three and six months, the dates t_{1M} , t_{3M} , and t_{6M} are 15 February, 15 December, and 15 September, respectively.

⁵ For instance, if the RUONIA Average is calculated as of 31 March for one, three and six months, the dates t_{1M} , t_{3M} , and t_{6M} are 28 February, 31 December, and 30 September, respectively.

no later than at 16:00 (Moscow time) on the RUONIA calculation days after the publication of RUONIA.

5.2. As soon as the RUONIA Index and Averages are published, they may not be changed.

Chapter 6. Changing the calculation procedure of the RUONIA Index and Averages and termination of their calculation and publication

6.1. In order to identify structural shifts in the state of the interbank lending market that might demand changes in the calculation procedure of the RUONIA Index and Averages or termination of their calculation and publication, the Statistics Department analyses the state of the interbank lending market on a continuous basis.

6.2. The Statistics Department presents the papers on this analysis and its proposals about required changes to the calculation procedure of the RUONIA Index and Averages or termination of their calculation and publication for consideration to the Committee and includes them in the report on the Committee's activity published on the Bank of Russia website.

6.3. If decided by the Committee, the papers on the analysis may be published on the Bank of Russia website for consultations or forwarded to the users concerned.

6.4. If any errors are detected that affect the published values of the RUONIA Index and Averages, the Statistics Department presents a summary of these errors for consideration to the Committee within the preparation of the report on the Committee's activity.

The summary of errors should contain data on the number and types of the errors, specifying the absolute impact of the errors on the published data for each type of the errors, that is, the absolute difference between the published values of the RUONIA Index and Averages and their values calculated based on accurate data.

6.5. If the Committee approves the proposal to terminate the calculation and publication of the RUONIA Index and Averages, the Statistics Department shall present the papers on the analysis and documents for making a decision on terminating the calculation and publication to the Bank of Russia Governor at least six months prior to the proposed date of termination of the calculation and publication of the RUONIA Index and Averages.

6.6. The Statistics Department is responsible for releasing the information on the approved decision to terminate the calculation and publication of the RUONIA Index and Averages on the Bank of Russia website and, when needed, for providing this information to stakeholders in another way, at least six months before their calculation and publication are terminated.