Procedure for Calculating and Publishing the Implied Rate on CNY/RUB Overnight FX Swaps

1. Main terms and definitions

The FX swap implied interest rate is the weighted average interest rate that reflects returns on a CNY/RUB overnight FX swap transaction under covered interest rate parity.

The fallback value of the FX swap implied interest rate is the value of the FX swap implied interest rate calculated for the purpose of ensuring the continuity of the calculation of this indicator.

An overnight FX swap is a foreign exchange transaction with the settlement date 'today' (the first leg of the FX swap) involving the obligation to then reverse the transaction in the same currencies (the second leg of the FX swap) on a predetermined date (the settlement date 'tomorrow' according to the Russian business days calendar for a five-day work week and weekends or public holidays of the People's Republic of China according to the official calendar).

The swap difference is the difference between the exchange rates of the second and first legs of a FX swap.

The base exchange rate is the exchange rate of the first leg of a FX swap.

RUONIA (Ruble Overnight Index Average) is a benchmark which is the weighted interest rate on unsecured overnight ruble lending transactions between credit institutions put on the RUONIA List.

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

Bank of Russia Ordinance No. 6406-U is Bank of Russia Ordinance No. 6406-U, dated 10 April 2023, 'On the Forms, Deadlines, and Procedure for Compiling and

Submitting the Reporting of Credit Institutions (Banking Groups) to the Central Bank of the Russian Federation'.

Form 0409701 is Daily Reporting Form 0409701'Report on Transactions in Foreign Exchange and Money Markets', established by Bank of Russia Ordinance No. 6406-U.

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

2. Data to calculate the FX swap implied interest rate

2.1. The FX swap implied interest rate is calculated based on Reporting Form 0409701 and data from Moscow Exchange.

2.2. As for the data provided in Reporting Form 0409701, the calculation of the FX swap implied interest rate includes overnight FX swap transactions conducted by credit institutions that are respondents under Reporting Form 0409701 in the over-the-counter segment during the business day for which the calculation is done.

3. Procedure for calculating the FX swap implied interest rate

3.1. The FX swap implied interest rate is calculated as the weighted average of interest rates that equals the sum of the products of the yuan-denominated amount of each transaction included in the calculation by the yuan interest rate of this transaction, divided by the yuan-denominated amount of the transactions included in the calculation.

The yuan interest rate of transaction *i* is calculated as follows:

$$IR_i = \left(\frac{BER_i}{BER_i + SD_i} * \frac{Index_{T_2}}{Index_{T_1}} - 1\right) * \frac{D_i}{N_i} * 100 \ ,$$

where:

IR_i is the yuan interest rate of transaction *i*;

i is the ordinal number of the transaction included in the calculation of IR_i;

BER_i is the base exchange rate of transaction *i*;

SD_i is the swap difference of transaction *i*;

T_1 is the date of calculations for the first leg of the overnight FX swap;

T_2 is the date of calculations for the second leg of the overnight FX swap;

$Index_{T_1}$ is the value of the RUONIA Index on the date of calculations for the first leg of the overnight FX swap;

$Index_{T_2}$ is the value of the RUONIA Index on the date of calculations for the second leg of the overnight FX swap;

N_i is the number of calendar days between the dates of calculations for the first and second legs of the overnight FX swap;

D_i is the number of days of a year, calculated using the formula

$$D_i = \frac{1}{\frac{w_i}{366} + \frac{1-w_i}{365}},$$

where:

w_i is the share of calendar days of a leap year in the period between the dates of calculations for the first and second legs of the overnight FX swap.

3.2. The calculation of the FX swap implied interest rate includes all transactions conducted on Moscow Exchange and over-the-counter transactions conducted during the business day for which the calculation is done. As for over-the-counter transactions conducted not on Moscow Exchange, the calculation cuts off 10% of the amount of transactions at minimum yuan interest rates IR_i and 10% of the amount of transactions at maximum yuan interest rates IR_i among over-the-counter transactions.

The FX swap implied interest rate is calculated as follows:

$$Rate_t = \frac{\sum_{i=1}^{n} IR_i * V_i}{\sum_{i=1}^{n} V_i},$$

where:

t is the date for which the FX swap implied rate is calculated;

i is the ordinal number of the transaction included in the calculation;

n is the sum of the number of transactions conducted on Moscow Exchange during the business day for which the calculation is done and the number of over-the-counter transactions remaining after the cutoff described in Clause 3.3 hereof;

V_i is the yuan-denominated amount of transaction i of the first leg of the FX swap.

4. Ensuring the continuity of the calculation of the FX swap implied interest rate

4.1. The calculation of the FX swap implied interest rate uses the values of the RUONIA Index and, therefore, the risks of errors in the calculation of the FX swap implied interest rate arise from, among other things, the risks of errors in the RUONIA calculation, which are mitigated through measures stipulated in the Methodology for Calculating and Publishing the RUONIA Index and Averages, approved by Bank of Russia Order No. OD-731, dated 12 April 2022, and published on the Bank of Russia website.

4.2. The continuity of the calculation of the FX swap implied interest rate is ensured by calculating the fallback value of the FX swap implied interest rate when at least one of the following conditions is relevant:

– the number of credit institutions that conducted FX swap transactions is less than three; or

– the calculation of the FX swap implied interest rate is technically impossible.

4.3. If the previous value of the FX swap implied interest rate was not the fallback value of the FX swap implied interest rate, as well as if the information about credit institutions’ transactions and the RUONIA Index is available as of the reporting date and the calculation of the FX swap implied interest rate is technically possible, the fallback value of the FX swap implied interest rate is calculated as the weighted average of the two values (the value of the previous FX swap implied interest rate and the value of the FX swap implied interest rate calculated based on the available information for the current date), with the respective transaction amounts used as weights in the calculation:

$$FallbackRate_t = \frac{V_{i-1} * Rate_{t-1} + V_t * Rate_t}{V_{t-1} + V_t},$$

where:

t is the date for which the FX swap implied rate is calculated;

$FallbackRate_t$ is the fallback value of the FX swap implied interest rate;

$Rate_t$ is the value of the FX swap implied interest rate calculated based on the available information for date *t*;

$Rate_{t-1}$ is the value of the FX swap implied interest rate for date *t*-1;

V_t is the yuan-denominated amount of transactions included in the calculation based on the available information for date *t*;

V_{t-1} is the yuan-denominated amount of transactions included in the calculation for date *t*-1.

4.4. If the conditions of Clause 4.3 hereof cannot be met, the previous value of the FX swap implied interest rate is used as its fallback value.

5. Publication of the FX swap implied interest rate

5.1. The value of the FX swap implied interest rate is published on the Bank of Russia website daily on business days no later than 17.30 Moscow time of the business day following the business day for which the calculation is done and corresponding to the business day for the Russian ruble and Chinese yuan. The FX swap implied interest rate is not calculated and published for days that are weekends or public holidays in Russia or China.

5.2. If it is technically impossible to calculate and publish the FX swap implied interest rate in due time, the Bank of Russia posts a relevant notice on its website and the FX swap implied interest rate is published no later than the next business day following the date of the notice.

5.3. After its publication, the FX swap implied interest rate may not be changed.

6. Termination of the calculation and publication of the FX swap implied interest rate

6.1. If the Bank of Russia Deputy Governor supervising the Statistics Department of the Bank of Russia approves a proposal to terminate the calculation and publication of the FX swap implied interest rate, the Statistics Department of the Bank of Russia shall submit the analysis materials and documents on the termination of the calculation and publication of the FX swap implied interest rate to the Bank of Russia Governor for approval.

6.2. After the Bank of Russia approves the decision to terminate the calculation and publication of the FX swap implied interest rate, the calculation and publication of the FX swap implied interest rate shall continue for the period established by this decision but for no less than six months. The Statistics Department of the Bank of Russia is responsible for publishing the information about the approved decision on the Bank of Russia website and, where needed, for providing it to the parties concerned by other means determined by the Bank of Russia.