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|  | **APPROVED**By the Moscow Exchange Executive Board\_\_ June 2025, Minutes No. \_\_ CEO of Moscow Exchange\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ V. Zhidkov |

**Calculation Methodology
CCP Repo Rates**

MOSCOW EXCHANGE 2025

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**1. General provisions**

* 1. This Methodology sets out the calculation procedures in relation to the CCP Repo Rates (hereinafter referred to as the "Indicators") performed by Public Joint-Stock Company Moscow Exchange (the "Exchange") on the basis of information on CCP-cleared repo orders and transactions ("CCP-cleared Repo").
	2. This Methodology as amended from time to time is subject to approval by the Exchange. The Exchange establishes the date when the Methodology as amended comes into force.
	3. The names of the Indicators are as follows:
		1. Indicators for the CCP-cleared repo in general collateral certificates from the GC Bonds pool, comprising all bonds from the pool ("GCC Bonds"):

Full names in Russian: "Ставка денежного рынка Московской Биржи RUSFAR REAL RUSFAR", "Ставка денежного рынка Московской Биржи RUSFAR REAL TIME" and "Ставка денежного рынка Московской Биржи RUSFAR REAL TIME COMPOUND";

Full names in English: "Russian Secured Funding Average Rate", "Russian Secured Funding Average Rate Real Time", and "Russian Secured Funding Average Rate Real Time COMPOUND";

Short names: "RUSFAR", "RUSFAR REAL TIME", "RUSFAR REAL TIME COMPOUND".

* + 1. The indicators are assigned codes as shown in Appendix 1. These codes are compiled depending on the calculation times of the indicators, the currency of the repos with the CCP and the settlement period of the first and second legs of the repo transactions with the CCP.
	1. The word mark "RUSFAR" is a trademark of Moscow Exchange registered by the Federal Service for Intellectual Property in the State Register of Trademarks and Service Marks of the Russian Federation on 11 April 2019 (Trademark Certificate No. 0707709).
	2. This Methodology, as amended from time to time, is subject to the recommendations of the Repo and Securities Lending Committee of the Exchange.
	3. The creation and calculation of the indicators as well as the introduction of amendments to this Methodology are based on a set of administrative principles and rules described in the Moscow Exchange Index Management Policy.
	4. The Methodology as approved (with amendments and supplements thereto) shall be published on the official website of Moscow Exchange not later than three working days prior to its effective date, unless the Exchange resolves otherwise.
	5. Terms and definitions used in the Methodology shall be used in accordance with their meanings given in internal documents of the Exchange, as well as the laws of the Russian Federation, the Bank of Russia regulations and other legal acts of the Russian Federation.
1. **Algorithm for Calculating RUSFAR and RUSFAR REAL TIME COMPOUND**
	1. RUSFAR and RUSFAR REAL TIME COMPOUND indicators are calculated on the basis of orders and transactions in GCC Bonds submitted/executed in the trading mode "CCP Repo with settlement in Russian rubles or Chinese yuan, depending on the currency of the indicator calculation, and orders submitted in the trading mode "Deposits with the CCP - order book orders" (hereinafter both modes the “Order Book Orders”) with settlement in Russian rubles or Chinese yuan, depending on the currency of the indicator calculation.- order book orders”
	2. Repo rates per second (the "Rates") for each RUSFAR and RUSFAR REAL TIME COMPOUND indicators are calculated according to the following algorithm in the period from 10:00:00 Moscow time up to and including the moment of calculation of the corresponding RUSFAR and RUSFAR REAL TIME COMPOUND indicators specified in Appendix 1 to the Methodology (the "Calculation Time"), unless another time is determined by the decision of the Exchange. The Rates are calculated on the basis of the information on the Order Book Orders in GCC Bonds and Order Book Orders for deposit agreements (the "Orders"):
		1. Every second, ranges of Orders are determined that are price-matched separately for placing and raising cash (the "Price Levels"). All Orders with the same price are assigned to the same Price Level.
		2. For each RUSFAR and RUSFAR REAL TIME COMPOUND indicators, the values of the minimum and maximum volume of Price Level Orders are set out in Appendix 2 to the Methodology. If the minimum volume of the Price Level is not met, the value is not taken into account in the calculation of the Rate for this indicator. If the volume of an Order exceeds the value of the maximum volume of Price Level Orders, the value equal to the value of the maximum volume of the Price Level shall be taken into account.

 A weighting factor k is assigned to each Price Level which relates to transactions for both placing and raising cash. The weighting factor is assigned in descending order from largest to smallest, respectively 1, 1/2, 1/4, ... 1/2^m. Price Levels with Order volumes that do not satisfy the minimum volume requirement for that Price Level are excluded.

* + 1. The average value of the price of the Asks (Rask) placed by the trading members at each calculation moment and meeting the requirements of clause 2.2.2 of the Methodology is calculated:



where:

ri – value of the ith Price Level, expressed as a percentage;

Vi – total volume of the Orders constituting the ith Price Level;

ki– the price coefficient.

* + 1. The average value of the price of Bids (Rask) placed by the trading members at each calculation moment and meeting the requirements of clause 2.2.2 of the Methodology is calculated:



where:

rj – value of the jth Price Level, expressed as a percentage;

Vj – total volume of the Orders constituting the jth Price Level;

kj– the price coefficient.

* + 1. The average value of the prices of the Bids and Asks (Rmid) is calculated:



If, at the time of calculation of the Rate, there are no available Binds and/or Asks, the Rate for this time period is not calculated.

* + 1. The average Rate across the Orders (Rorders) is calculated on the basis of all Rates calculated in accordance with clause 2.2.5 of the Methodology:



where:

J – the number of Rates in the calculation.

* 1. The average Rate across transactions made based on Order Book Orders from 10:00 to the time of calculation (Rtrades) is calculated according to the following formula:



where:

rt - value of the Rate in the transaction, expressed as a percentage;

vt - volume of the transaction, expressed in the indicator calculation currency.

* 1. The minimum required transaction volume is defined for each of the RUSFAR and RUSFAR REAL TIME COMPOUND indicators.
		1. For the RUSFAR and RUSFAR REAL TIME COMPOUND indicators calculated from 12:30 to 18:00 (inclusive), when the settlement currency is Russian roubles (RUB), the minimum required transaction volume is set at RUB 30 billion. For the RUSFAR and RUSFAR REAL TIME COMPOUND indicators calculated from 12:30 to 18:00 (inclusive) when the settlement currency is Chinese yuan (CNY), the minimum required transaction volume is set at CNY 1 billion.
		2. For each RUSFAR REAL TIME COMPOUND indicator calculated from 10:15 to 12:15 (inclusive), the minimum required transaction volume is determined using the following formula:

where:

MinVol – value of the minimum required transaction volume;

T – the duration in minutes of the period from 10:00 to the corresponding calculation time, expressed as an integer;

MinVollevel – the minimum required transaction volume set in clause 2.4.1 of the Methodology.

* 1. In the case the volume of transactions executed based on Order Book Orders from 10:00 to the time of calculation, exceeds the value of the minimum required volume of transactions for the relevant indicator set out in clause 2.4 of the Methodology, the value of the RUSFAR и RUSFAR REAL TIME COMPOUND indicators is determined by the following formula:



where:

R – the value of the Indicator;

– the average Rate across transactions which is determined according to clause 2.3 above;

* 1. In the case the volume of transactions executed based on Order Book Orders from 10:00 to the time of calculation exceeds the value of the minimum required volume of transactions for the relevant indicator set out in clause 2.4 of the Methodology, the value of the indicator is determined by the following formula:

where:

R – the value of the Indicator;

– the average Rate across transactions which is determined according to clause 2.2 above;

– the average Rate across transactions which is determined according to clause 2.3 above;

Vol - volume of transactions executed based on Order Book Orders from 10:00 to the time of calculation, with maturities corresponding with the settlement method indicated with respect to the Indicator in Appendix 1;

MinVol – value of the minimum required volume of transactions set out in clause 2.4 above.

* 1. The values of the RUSFAR и RUSFAR REAL TIME COMPOUND indicators are expressed as a percentage per annum. The index values are accurate to two decimal places.
1. **Algorithm for the Calculation of RUSFAR REAL TIME Indicators**
	1. The RUSFAR REAL TIME indicators are calculated at the following times: 10:15, 10:30, 11:00, 11:15, 11:30, 11:45, 12:00, 12:15, 12:30, 12:45, 13:00, 13:15, 13:30, 13:45, 14:00, 14:15, 14:30, 14:45, 15:00, 15:15, 15:30, 15:45, 16:00, 16:15, 16:30, 16:45, 17:00, 17:15, 17:30, 17:45, and 18:00 Moscow time, unless the Exchange specifies an alternative schedule. The calculation is based on data on Orders and order book transactions executed during the 15-minute period preceding the calculation time.
	2. The calculation of RUSFAR REAL TIME indicators at the above times follows this algorithm:
		1. The average Rate for Orders (Rorders rt) for the 15-minute period preceding the calculation is computed in a manner similar to that applied to the RUSFAR and RUSFAR REAL TIME COMPOUND indicators, as defined in clauses 2.2.1–2.2.6 of the Methodology.
		2. The average Rate across order book transactions during 15 minutes preceding the time of calculation (Rtrades rt) is computed using the following formula:



where:

Rtrades rt is the value of the Rate in transactions made during the period leading up to the time of calculation, expressed as a percentage;

vt - volume of the transaction, expressed in the indicator calculation currency.

* + 1. The values of the indicators are determined by the following formula:



where:

Rrt – the value of the Indicator;

Rtrades rt – the value of the Rate in transactions made during the period leading up to the time of calculation, expressed as a percentage;

Rorders rt – the value of the average Rate across orders (Rorders rt) for the preceding 15-minute period.

* + 1. If there are no available transactions executed based on Order Book Orders during 15 minutes preceding the time of calculation (Rtrades rt), the indicators are calculated according to the following formula:

Rrt – the value of the Indicator;

Rorders rt – the value of the average Rate across orders (Rorders rt) for the preceding 15-minute period.

* + 1. In the absence of the orders necessary to determine the value of the average Rate (Rorders rt) for the previous fifteen-minute period, the indicator values are determined according to the following formula:

Rrt – the value of the Indicator;

Rtradesrt – the value of the Rate in transactions made during the period leading up to the time of calculation, expressed as a percentage.

* + 1. In the absence of orders and trades that allow the values of the average Rate for orders (Rorders rt) and average Rate (Rtradesrt) for the previous fifteen minutes to be determined, the values of the indicators are not calculated.
	1. The values of RUSFAR REAL TIME indicators are expressed as a percentage per annum. The index values are accurate to two decimal places.
1. **Schedule of Indicator Calculation**
	1. Indicator values shall not be calculated if the first or second part of a repo transaction of the respective term falls on a trading non-business day, trading days falling on Saturday and/or Sunday, as well as on the last trading day of the calendar year.
	2. Indicator calculation times are given in Appendix 1 to this Methodology. The indicator calculation times may be changed by decision of the Exchange.
	3. The Exchange may change the start time and/or end time of Indicators calculation. Information on the decisions taken by the Exchange pursuant to this paragraph shall be made available to the trading members of the Exchange no later than one business day before the date of entry into force of the respective changes, unless the Exchange has set a different deadline for the publication of the information.
2. **Indicator Calculation Supervision**
	1. In case of suspension of trading in trading modes, which are taken into account for the calculation of the indicators, during the periods set for the calculation of such indicators in accordance with this Methodology, or in case of closure of trading in the relevant trading modes on a given trading day, the value of the RUSFAR indicator (GCC Bonds overnight) is set equal to the key rate set by the Bank of Russia for that day, unless the Exchange decides otherwise. The values of other indicators are not determined on this trading day.
	2. In the event of a technical failure during the calculation of indicators or a technical failure during trading of CCP repos and/or on the deposit market concerning Order Book Orders resulting in distortion of data used for the calculation of indicators, recalculation of previously calculated indicator values shall be permitted. This recalculation is carried out as soon as possible after the technical failure has been detected. In the event of a recalculation, a notice is published on the official website of the Exchange.
	3. In case the deviation of the value calculated on the basis of quotes (Rorders) from the value calculated on the basis of transactions (Rtrades) exceeds 5%, the Exchange has the right to cancel the results of RUSFAR indicator calculations. When cancelling calculation results, the Exchange shall disclose on the official website information on circumstances taken into account when making this decision, not later than 19:00 MSK of the day of calculation.
	4. The Moscow Exchange Regulations on Recalculation of Index Values outline principles guiding the Exchange when developing, calculating, and distributing the indicators in the event of errors in their values.

1. **Publication**
	1. Disclosure of indicator values is made daily on the Exchange official website.
	2. In case of an event specified in clause 5.2 of this Methodology, Exchange may delay the publication of the RUSFAR indicator values until 19:00 MSK.
	3. Archived data for the entire calculation period, as well as information about the total volume of transactions based on which the calculation was made, is disclosed on the Exchange official website.
	4. The information that must be published on the official website of the Exchange in accordance with this Methodology may also be disseminated through other means, including information agencies that disseminate MOEX market data.

**Appendix 1**

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| Indicator code | Name | Board | Instrument type | Settlement method | Settlement currency | Calculation time |
| RUSFAR | RUSFAR | GCRP | GCC Bonds | Overnight | RUB | 12:30 Moscow time |
| RUSFAR1W | RUSFAR 1 week | GCOW | GCC Bonds | One week | RUB | 12:30 Moscow time |
| RUSFAR2W | RUSFAR 2 weeks | GCSW | GCC Bonds | 2 weeks | RUB | 12:30 Moscow time |
| RUSFAR1M | RUSFAR 1 month | GCOM | GCC Bonds | 1 month | RUB | 12:30 Moscow time |
| RUSFAR3M | RUSFAR 3 month | GCTM | GCC Bonds | 3 months | RUB | 12:30 Moscow time |
| RUSFARCNY | RUSFAR CNY | GYRP | GCC Bonds | Overnight | CNY | 12:30 Moscow time |
| RUSFARCN1W | RUSFAR CNY One Week | GYOW | GCC Bonds | One week | CNY | 12:30 Moscow time |
| RUSFARRT | RUSFAR REAL TIME | GCRP | GCC Bonds | Overnight | RUB | 10:15-18:00\* |
| RUSFAR1WRT | RUSFAR REAL TIME One week | GCOW | GCC Bonds | One week | RUB | 10:15-18:00\* |
| RUSFAR2WRT | RUSFAR REAL TIME Two weeks | GCSW | GCC Bonds | 2 weeks | RUB | 10:15-18:00\* |
| RUSFAR1MRT | RUSFAR REAL TIME One month | GCOM | GCC Bonds | 1 month | RUB | 10:15-18:00\* |
| RUSFAR3MRT | RUSFAR REAL TIME Three months | GCTM | GCC Bonds | 3 months | RUB | 10:15-18:00\* |
| RUSFARCNRT | RUSFAR REAL TIME CNY | GYRP | GCC Bonds | Overnight | CNY | 10:15-18:00\* |
| RUSFARC1WR | RUSFAR REAL TIME CNY One Week | GYOW | GCC Bonds | One week | CNY | 10:15-18:00\* Moscow time |
| RUSFARN | RUSFAR REAL TIME COMPOUND | GCRP | GCC Bonds | Overnight | RUB | 10:15-18:00\* Moscow time |
| RUSFAR1WN | Индикатор RUSFAR REAL TIME COMPOUND One week | GCOW | GCC Bonds | One week | RUB | 10:15-18:00\* Moscow time |
| RUSFAR2WN | RUSFAR REAL TIME COMPOUND Two weeks | GCSW | GCC Bonds | 2 weeks | RUB | 10:15-18:00\* Moscow time |
| RUSFAR1MN | RUSFAR REAL TIME COMPOUND One month | GCOM | GCC Bonds | 1 month | RUB | 10:15-18:00\* Moscow time |
| RUSFAR3MN | RUSFAR REAL TIME COMPOUND Three months | GCTM | GCC Bonds | 3 months | RUB | 10:15-18:00\* Moscow time |
| RUSFARCNN | RUSFAR REAL TIME COMPOUND Chinese Yuan | GYRP | GCC Bonds | Overnight | CNY | 10:15-18:00\* Moscow time |
| RUSFARC1WN | RUSFAR REAL TIME COMPOUND Chinese Yuan One week | GYOW | GCC Bonds | One week | CNY | 10:15-18:00\* Moscow time |

\* 10:15, 10:30, 11:00, 11:15, 11:30, 11:45, 12:00, 12:15, 12:30, 12:45, 13:00, 13:15, 13:30, 13:45, 14:00, 14:15, 14:30, 14:45, 15:00, 15:15, 15:30, 15:45, 16:00, 16:15, 16:30, 16:45, 17:00, 17:15, 17:30, 17:45, 18:00.

**Appendix 2**

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| Indicator code | Minimum order size per Price Level | Maximum volume of transactions per Price Level. |
| RUSFAR RUSFARRT RUSFARN | RUB 20,000,000 | RUB 3,000,000,000 |
| RUSFAR1W RUSFAR1WRT RUSFAR1WN | RUB 10,000,000 | RUB 2,000,000,000 |
| RUSFAR2W RUSFAR2WRT RUSFAR2WN | RUB 10,000,000 | RUB 2,000,000,000 |
| RUSFAR1M RUSFAR1MRT RUSFAR1MN | RUB 10,000,000 | RUB 2,000,000,000 |
| RUSFAR3M RUSFAR3MRT RUSFAR3MN | RUB 10,000,000 | RUB 2,000,000,000 |
| RUSFARCNYRUSFARCNRT RUSFARCNYN | CNY 1,000,000 | CNY 200,000,000 |
| RUSFARCN1WRUSFARC1WR RUSFARC1WN | CNY 1,000,000 | CNY 200,000,000 |