# APPROVED

By the Moscow Exchange Executive Board

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Chairman of the Management Board

Moscow Exchange

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Yu. Denisov

# Methodology for calculation of indicative rates

1. This Methodology defines the procedure for calculation of the indicative rates (the "Indicators") with respect to trades executed on the Exchange as specified in clause 5 of this Methodology, by Public Joint-Stock Company Moscow Exchange MICEX-RTS (the "Exchange").
2. The business of creating, calculating, revising and updating the Indicators as well as revising this Methodology is based on a set of administrative principles and rules described in the Moscow Exchange Index Management Policy.
3. This Methodology, as well as all amendments and additions hereto are approved by the Exchange and come into effect on the date determined by the Exchange.
4. The text of the Methodology (as amended and supplemented) approved by the Exchange shall be disclosed on the Exchange website at least one working day prior to its effective date, unless otherwise provided for by the Exchange decision.
5. The Exchange calculates Indicators for each of the following instruments: USD\_TODTOM, EUR\_TODTOM, EURUSDTDTM, CNY\_TODTOM, USD\_TOM1W, USD\_TOM2W, USD\_TOM1M, USD\_TOM2M, USD\_TOM3M, USD\_TOM6M, USD\_TOM9M, USD\_TOM1Y (the "Instruments").
6. The Exchange calculates Indicators based on the following market data on Instruments derived from MOEX’s markets:
	1. orders to all trading members (the "order book orders");
	2. trades executed on the basis of order book orders.
7. Indicators are calculated based on the aggregate information about the 20 best bids and 20 best offers with respect to order book orders.
8. Indicators are calculated daily as of 12:30:00 pm MSK.
9. Values of Indicators (Pn) are determined based on averaged prices of trades and orders (PFIX), calculated per second over the period 12:25:01 - 12:30:00 pm MSK inclusive, unless otherwise set by the Exchange, by the formula:



1. The value (PFIX) at every time n is determined by the following algorithm:
	1. The average price of order book orders (PBID), submitted by the trading member at time n:



Pi - the price of the ith order book order to buy;

Qi - the volume of the ith order book order to buy;

N - number of order book orders to buy at time n;

Wi - weighting coefficient, determined by the following formula:



k=2, unless other value of the parameter is set by the Exchange.

i - notional number of the orders group, determined according to the following formula by rounding the result to the nearest whole number:

,

 - best bid,

m – the price tick set by the Exchange for the Instrument used to calculate the Indicator concerned.

* 1. The average price of order book orders to sell (PASK), submitted by the trading members at time n is calculated:



Pi - the price of the ith order book order to sell;

Qi - the volume of the ith order book order to sell;

N - number of order book orders to sell at time n;

Wi - weighting coefficient, determined by the following formula:



k=2, unless otherwise specified by the Exchange.

i - notional number of the orders group, determined according to the following formula by rounding the result to the nearest whole number:

,

 - best ask,

m – the price tick set by the Exchange for the Instrument used to calculate the Indicator concerned.

* 1. The average value of prices of order book order to buy and sell (PMID) is calculated:

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* 1. If there are no orders to buy and/or sell at time n, PMID is assumed to be equal to its value at time n-1.
	2. The average price of trades (PDEAL), executed for the period t, where  (n - the time of calculation of the current value of Indicators, n-1 - the time of calculation of the previous value of Indicators) is calculated:

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Pj - the price of the jth trade;

Qj - the volume of the jth trade;

M - number of trades over the period.

* 1. The average price (PFIX) of trades executed over the period t, where  (n - the time of calculation of the current Indicators value, n-1 - the time of calculation of the previous Indicators value), and the quotes at time n are calculated:

,

where:

q – the parameter, ;

;

Qt – the volume of trades over second t;

= 1,000,000, unless otherwise is set by the Exchange.

* 1. If, in the period t, where  (n - the time of calculation of the current Indicators value, n-1 - the time of calculation of their previous value), no trades were executed that can be taken to calculate the Indicators, PDEAL is not calculated, and PFIX is set to equal to PMID.
1. Values of the Indicators are published daily on the Exchange website within 5 minutes after their calculation.
2. All terms and definitions not specifically defined in this Methodology are used in the meanings assigned to them in the Exchange trading rules for the Instruments.

Annex 1 to the Indicative Rates Methodology

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| Indicator name | Name of swap instruments used to calculate the indicator |
| SRATE\_USD\_ON | USD\_TODTOM |
| SRATE\_EUR\_ON | EUR\_TODTOM |
| SRATE\_ED\_ON | EURUSDTDTM |
| SRATE\_CNY\_ON | CNY\_TODTOM |
| SRATE\_USD\_1W | USD\_TOM1W |
| SRATE\_USD\_2W | USD\_TOM2W |
| SRATE\_USD\_1M | USD\_TOM1M |
| SRATE\_USD\_2M | USD\_TOM2M |
| SRATE\_USD\_3M | USD\_TOM3M |
| SRATE\_USD\_6M | USD\_TOM6M |
| SRATE\_USD\_9M | USD\_TOM9M |
| SRATE\_USD\_1Y | USD\_TOM1Y |