**APPROVED**

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Chairman of the Executive Board

Moscow Exchange

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Yury Denisov

**MOEX Warehouse Real Estate Index Calculation Methodology**

**Moscow 2023**

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# Introduction

* 1. Terms and definitions
     1. The following terms and definitions shall apply in this MOEX Warehouse Real Estate Index Calculation Methodology by Public Joint-Stock Company "Moscow Exchange MICEX-RTS" (the "Methodology"):
        + - Index Constituents means the established Warehouse Facilities used to calculate the Index.
          - The Exchange, Moscow Exchange means Public Joint-Stock Company Moscow Exchange MICEX-RTS.
          - Index Review Date means the day on which the statistics used to determine the parameters of the Constituents are calculated. This is the last Friday preceding 1 March, 1 June, 1 September and 1 December.
          - Data Provider means a supplier of data on the Warehouse Facilities.
          - Index means an indicator calculated by the Exchange based on the data on the value of the real estate property provided by the data providers and tracking the change in the total value of a certain group of the Warehouse Facilities that are Index Constituents.
          - Total Return Index means an Index that measures the price performance of the Warehouse Facilities that are Index Constituents, as well as the reinvestment performance of the net operating income generated from them.
          - Warehouse Facility is a warehouse facility on the territory of the Russian Federation that meets the criteria specified in clause 2.1.1 of the Methodology, determined on the basis of the class, type and area of the Facility.
          - Expert Council means an advisory and consultative body of the Exchange acting on a permanent basis.
     2. Terms not specifically defined herein shall be construed in accordance with other documents of the Exchange as well as the law and regulatory acts of the Bank of Russia.
  2. General provisions
     1. Under this Methodology, the Exchange calculates:
        1. The composite price Index. The name of the Index in Russian is "Индекс МосБиржи складской недвижимости", the name of the Index in English is "MOEX Warehouse Real Estate Index". The Index code is “CREI”.
        2. The Total Return Index. The name of the Index in Russian is "Индекс МосБиржи складской недвижимости полной доходности", the name of the Index in English is "MOEX Warehouse Real Estate Total Return Index". The Index code is “CREITR”.
     2. The word mark "MOEX Index" is a trademark of Moscow Exchange registered by the State Register of Trademarks and Service Marks of the Russian Federation on 18 September 2017 (Trademark Certificate No. 630519). The word mark "MOEX" 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 29 August 2014 (trademark certificate No. 521450).
     3. This Methodology as amended from time to time is subject to recommendations of the Expert Council.
     4. This Methodology as amended from time to time is subject to approval by the Exchange and come into effect on the date determined by the Exchange.
     5. It may be amended and supplemented no more frequently than once a quarter. Information on changes introduced, including in the form of a new version of the Methodology, shall be disclosed by the Exchange not later than three business days prior to the effective date.

# Index Calculation

* 1. Input data for the calculation of Index
     1. To calculate the Index, data on Warehouse Facilities provided by data providers in the form provided in Appendix 1 to the Methodology and containing all necessary information on the value, qualitative and quantitative characteristics of the Facilities shall be taken into account. The Warehouse Facility must meet the following criteria:  
        + Built not earlier than 2010;
        + Class "A", the requirements for class "A" are given in Appendix 2 to the Methodology;
        + Category of dry and/or multi-temperature warehouses;  
          Total area not less than 20 thousand square metres.
  2. General procedure for calculating the Price Index
     1. The Index is computed by dividing the aggregate value of all Warehouse Facilities as of the calculation moment by the value of Divisor Dn using the following formula:

where:

In – value of the Index as of the nth moment;

MCn – total value of all Warehouse Facilities as of the nth moment, determined according to paragraph 2.2.3 of the Methodology;

Dn – value of the Divisor as of the nth moment;

The Divisor is the aggregate value of all Warehouse Facilities as of the first day of calculation of the Index, adjusted for the changes in the Index constituents and the initial value of the Index. On the first day of calculation of the Index, the Divisor is calculated according to the formula:

where:

MC1 – the total value of all Warehouse Facilities on the date the Index was first calculated;

I1 – the initial value of the Index.

Thereafter, the Divisor remains unchanged (Dn=Dn-1), except for the cases described in clause 2.3.

* + 1. The initial value of the Index: I1 = 1,000 as of 29 March 2019.
    2. The total value of all Warehouse Facilities at the nth moment of calculation is determined according to the formula:

where:

N - the total number of Warehouse Facilities;

MCi - the value of the ith Warehouse Facility.

* + 1. The Indices are expressed in points and rounded to two decimals.
  1. Calculation of the Divisor
     1. The Dn divisor is calculated if the Index Constituents are changed.
     2. Divisor Dn is calculated according to the following formula:

where:

Dn+1 – the new value of Divisor D;

Dn – the current value of Divisor D;

MCn – total value of all Warehouse Facilities before the occurrence of the circumstance that is the basis for recalculation of Divisor D in accordance with clause 2.3.1 of this Methodology;

MCn – total value of all Warehouse Facilities after the occurrence of the circumstance that is the basis for recalculation of Divisor D in accordance with clause 2.3.1 of this Methodology;

* + 1. Divisor Dn is calculated to four decimal places using the mathematical rounding rule.
  1. Calculating the Total Return Index
     1. The Total Return Index is calculated using the Index Constituents, values and parameters of the Price Index including net operating income for Warehouse Facilities in the Price Index.
     2. Information on payment of net operating income is provided by the data providers simultaneously with information on the estimated value of the Warehouse Facilities and is taken into account in the calculation of the Total Return Index on the date of calculation of the Price Index and the Total Return Index.
     3. If information on payment of net operating income comes to the Exchange after the date when it should be processed in accordance with clause 2.4.2 of the Methodology, it is processed on the date of its receipt by the Exchange.
     4. It is the data providers who are the sources of data on net operating income payments.
     5. The initial value of the Total Return Index: I1=1,000 as of 29 March 2019.
     6. The Total Return Index is calculated without taking into account taxation of income received in the form of net operating income.
     7. The amount of net operating income taken into account in calculating the Total Return Index is determined by the formula:

where:

TRentn - the total net operating income from Warehouse Facilities in the Index, taken as of day n;

N - the number of Warehouse Facilities in the Index;

Rentin - the amount of net operating income for the ith Warehouse Facility.

* + 1. Net operating income expressed in points of Total Return Indexes:

where:

Dn – the Divisor of the relevant price-weighted Index as of the nth moment.

* + 1. The yield resulting from reinvestment of net operating income is determined according to the formula:

where:

In – the Price Index value on day n;

In-1– the Price Index value on day n-1.

* + 1. The Total Return Index is determined as follows:

# Index Construction and Review

* 1. Index Construction Principles
     1. The Index Constituents list contains codes and names of the Warehouse Facilities.
     2. The list of Warehouse Facilities (Index Constituents) is based on data from data providers submitted to the Exchange. Upon recommendation of the Expert Council, the Exchange may decide to redefine Index Constituents in accordance with the procedure set out in clause 3.2 of this Methodology.
     3. Upon the scheduled Index Review, parameters of the Index Constituents are determined on the basis of data sent by data providers to the Exchange not later than the date of the Index Review date.
  2. Index Review
     1. Changes in the list of Warehouse Facilities (Index Constituents), as well as in the weighting factors used in the calculation of the Index (parameters of the Index Constituents), are made at the Index Review.
     2. Regular Index Reviews and review of parameters of the Index Constituents shall be carried out no more frequently than once a quarter, except as provided for in this Methodology. Index Constituents after the Index Review are effective from the beginning of the main trading session of the trading day following the first Thursday of March, June, September and December. The Exchange may decide to set other dates of coming into effect of the Index Constituents after review.
     3. An extraordinary Index Review and review of Constituents' parameters may be carried out in cases that may have a significant impact on the calculation of the Index and require an immediate Index Review or the parameters.

# Index Calculation Frequency and Disclosure

* 1. Expert Council
     1. The Exchange is entitled to set up an Expert Council, which will exercise general control and develop recommendations on changes to the Methodology.
     2. The business of creating, calculating, revising and updating the Index as well as this Methodology is based on a set of administrative principles and rules described in the Moscow Exchange Index Management Policy.
  2. Schedule for calculation of the Index values
     1. Index values are calculated once a month. The single monthly value of the Index is both the current value and the closing value before the next Index calculation in the following month. The specified frequency of calculation of the Index may be changed by the Exchange's decision.
     2. The Index value is published no later than three working days following the date of calculation.
     3. Unless otherwise specified by the Bank of Russia regulations, the Exchange is entitled to change the frequency of Index calculation. Decisions taken by the Exchange in compliance with this clause shall be notified to MOEX trading members not less than five working days prior to the date of coming into effect of respective changes, unless the Exchange has set another term, by announcement of respective information.
  3. Control Over Index Calculation
     1. In the event of a technical failure in the calculation of the Index, which resulted in a distortion of the data used to calculate the Index, the previously calculated Index values may be recalculated. This recalculation shall be carried out within the shortest possible time from the moment of detection of the technical failure. Upon recalculation of the Index, the Exchange posts the relevant announcement on its website.
     2. In the event of circumstances that may adversely the Index's ability to reflect actual indicators of the Russian warehouse market, the Exchange may take any actions required to ensure the Index representativeness, also by requesting from data providers initial data for auditing the calculation of parameters, as well as setting the values of parameters used to calculate benchmarks stipulated by this Methodology, etc.

* 1. Disclosure
     1. Information provided for by the Methodology and regulations of the Bank of Russia is disclosed on the Exchange official website.
     2. In case of changes in factors used in calculation of the Index based on judgment (expert opinion), the Exchange discloses on the official website circumstances taken into account in changing these factors and justification of such changes not later than the day following the day of their change.
     3. In addition to the information disclosed according to this Methodology, the Exchange discloses the closing value of the Index on a monthly basis.
     4. This Methodology and closing values of the Index for the past year is available to any interested person on the Exchange official website.
     5. Information subject to disclosure in accordance with this Methodology may be additionally disseminated by other means, including through information agencies disseminating MOEX market data.

# Appendix I

**Form for data providers to submit data on Warehouse Facilities to the Exchange**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project** | **Facility** | **Region** | **Facility class** | **Type of warehouse** | **Year of construction of the Facility** | **Total area of permanent facility,**  **square metres** | **Beginning of the reporting period, dd.mm.yyyyy** | **End of the reporting period, dd.mm.yyyyy** | **Estimation, RUB ‘000** | **Other operating income,**  **RUB ‘000** |
| Project 1 |  |  |  |  |  |  |  |  |  |  |
| … |  |  |  |  |  |  |  |  |  |  |
| Project N |  |  |  |  |  |  |  |  |  |  |

# Appendix 2

**Description of Class A warehouses**

Class A+ warehouse is a modern rectangular building of single-storey type, constructed using sandwich panels or lightweight metal structures. Main characteristics:

* columns are absent or spaced at a pitch of about 12 m;
* ceiling height of approximately 13 m to accommodate 6-7 tiers of shelving;
* concrete floor with additional anti-dust coating, designed for a load of at least 5 tonnes/m2 at a height of 1.2 m;
* heating and temperature control are mandatory requirements for class "A" warehouse;
* fire alarm system, automatic ventilation and fire extinguishing;
* round-the-clock security, security cameras, alarm system;
* stand-alone boiler house and electric substation;
* one dock gate for every 500 m2, with platforms (adjustable in height) for loading and unloading works;
* areas for car and lorry transport;
* Class "A" logistics warehouses have areas for turning large-tonnage vehicles;
* site access control management (operated by the tenant as the case may be);
* the protected territory is fenced, landscaped and illuminated (40‑45% built-up);
* there are premises for employees, office rental service;
* fibre optic communications and a professional management system are in place.

Optional requirements for A+ class warehouses include the presence of a railway line right next to the territory.

**Class A warehouses**

The general characteristics of an A warehouse are the same as for higher class warehouses, except for a few parameters:

* column spacing more than 9 m is permissible;
* ceiling height of 10 m or more;
* the territory is built up by 45-55%.

Stand-alone heat and power plant, access control for employees and railway line are not obligatory. Lighting in a Class A warehouse should be provided throughout the entire territory.