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|  | **APPROVED**by the Executive Board of Moscow Exchange \_\_\_ October 2023, Minutes No.\_\_\_\_ Chairman of the Executive BoardMoscow Exchange\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Yu.O. Denisov |

**Calculation Methodology for**

**MOEX High Yield Increased Investment Risk Bond Index**

Moscow Exchange, 2023

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1. **General Provisions**
	1. Terms and Definitions

1.1.1. For the purposes of this Calculation Methodology for MOEX High Yield Increased Investment Risk Bond Index (hereinafter, the “Methodology”), the following terms and definitions apply:

- *List of Constituents* means a list of Bonds used to calculate the Index as approved by the Exchange in the manner outlined in this Methodology;

- *Exchange, Moscow Exchange* means Public Joint-Stock Company Moscow Exchange MICEX-RTS;

- *Index Review Date* means 1 February, 1 May, 1 August and 1 November;

- *Maturity Date* the date of maturity or the date of the nearest put option, if the put option is stipulated by the issue documents;

- *Additional Factors* are Weighted Average Return and Duration of the Index;

- *Total Return Index* means the Index calculated on the basis of the value of the Bonds, determined as the sum of the price and the Accumulated Coupon Income of the Bond, subject to coupon payments reinvestment;

- *Credit Rating* means the national scale creditworthiness rating assigned to the Issuer of the Bonds or the issue of the Bonds by the National Rating Agencies;

*Zero Coupon Yield Curve, the Curve* means the zero coupon yield curve for the government bond market, calculated in accordance with the Moscow Exchange's Zero Coupon Yield Curve Methodology for Government Securities (Federal Government Bonds (OFZ));

- *Accumulated Coupon Income, ACI* means the earnings accumulated on the Bond in RUB;

- *National Rating Agencies* are Analytical Credit Rating Agency (ACRA), Rating Agency Expert RA (Expert RA), «National Credit Ratings (NCR), and National Rating Agency (NRA);

- *Bonds* means bonds issued by Russian corporate issues and admitted to trading on the Exchange, including the bods admitted to the Increased Investment Risk (IIR) Sector;

- *Call Option* means the possibility of early redemption of the Bonds issue at the initiative of the Issuer;

- *Put Option, offer* means the possibility of early redemption of the Bonds issue at the initiative of the Bond holders;

- *Weighted Average Return* means the weighted average return of Bond issues included in the Index Constituents;

- *Weighted Average Duration* means the weighted average duration of Bond issues included in the Index Constituents;

- *Increased Investment Risk Sector* means total securities included in the Third Level of Moscow Exchange, which the Exchange has decided to admit to this Sector, including with the limitation of the list of acceptable trading modes for the purposes of mitigating risks of investors' financial losses from acquisition on the Exchange's trades of securities with uncertain investment risk, as well as securities previously included in the Uncertain Investment Risk Securities Sector;

- *Average Return* means return of the Bonds issue determined as the average of returns at the weighted average price of the Bonds issue calculated for ten trading days preceding the date of revision of the Index;

- *Term to Maturity* means the period to the maturity date of the Bond Issue or the date of the nearest offer;

-*Weight* means the percentage of the Bond issue value in the total value of all Bonds in the Index;

-*Price Index* means the Index computed based on Bond prices without Accumulated Coupon Income and coupon payments reinvestment factored in.

1.1.2. Terms and definitions used in this Methodology shall have the meanings ascribed to them in the internal documents of Moscow Exchange, Russian law, regulatory acts of the Bank of Russia and other regulations of the Russian Federation.

* 1. This the Methodology establishes procedures for Moscow Exchange to calculate Index of Bonds admitted to trading on Moscow Exchange and select the Bonds whose trading prices are used in calculating the Index and additional factors.
	2. The Index calculated under this Methodology has the names and codes below:
* The Index’s name in Russian: «Индекс МосБиржи Высокодоходных Облигаций Повышенного Инвестиционного Риска»;
* Short name in Russian: «Индекс МосБиржи ВДО ПИР»;
* The Index's name in English: «MOEX High Yield Increased Investment Risk Bond Index»;
* The Total Income Index code: RUCBHYTR
* The Price Index code: RUCBHYCP.

The wording “Индекс МосБиржи” in the Index name is a trademark of Moscow Exchange registered by the Federal Service for Intellectual Property in the Russian Public Register of Trademarks and Service Marks on 18 September 2017 (trademark certificate No. 630519). The wording “MOEX” in the Index name is a trademark of Moscow Exchange registered by the Federal Service for Intellectual Property in the Russian Public Register of Trademarks and Service Marks on 29 September 2014 (trademark certificate No. 521450).

* 1. The Exchange shall approve this Methodology and any amendments and supplements thereto and they shall come into effect on the date determined by the Exchange. Amendments and supplements to this Methodology may be made once a quarter at latest.
	2. The approved text of this Methodology with any amendments and supplements thereto shall be disclosed on the official website of the Exchange on the Internet no later than three working days of its effective date unless otherwise is stipulated in the resolution of the Exchange.
1. **General Calculation Method**
	1. The Index is calculated on the basis of information about trades in Bonds which are executed on the Exchange. The Index and Additional Indicators are calculated every trading day after trading in the Main Trading Mode closes. The Exchange has the right to change the frequency of Index and Additional Indicators calculation.
	2. The Methodology sets out the following calculation method for the Index:
		1. The Price Index is calculated according to the following formula:

$$PI\_{n}=PI\_{n-1} ∙\frac{\sum\_{i=1}^{N}\frac{P\_{i,n}}{100}∙FV\_{i,n}∙ N\_{i,n}∙ W\_{i,n},}{\sum\_{i=1}^{N}\frac{P\_{i,n-1}}{100}∙FV\_{i,n-1}∙ N\_{i,n},∙ W\_{i,n}}$$

where:

PIn – the Price Index value at time n.

Pi,n – the average weighted price of the i-th Bond issue calculated at time n, in per cent of the par value.

FVi,n – the average par value of the i-th Bond issue calculated at time n, in RUB.

Ni,n – the volume of i-th Bond issue at time n, in securities units.

Wi,n – the coefficient limiting the share of capitalisation of the i-th Bond Issuer (“Weighting Coefficient”) is equal to 1, unless otherwise is provided in section 5 hereof.

* + 1. The Total Return Index is calculated according to the following formula:

$$CI\_{n}=CI\_{n-1} ∙\frac{\sum\_{i=1}^{N}(\frac{P\_{i,n}}{100}∙FV\_{i,n}+A\_{i,n}+G\_{i,n})∙ N\_{i,n}∙ W\_{i,n},}{\sum\_{i=1}^{N}(\frac{P\_{i,n-1}}{100}∙FV\_{i,n-1}+A\_{i,n-1})∙ N\_{i,n},∙ W\_{i,n}}$$

where:

CIn – the Total Return Index value at time n;

Pi,n – the average weighted price of the i-th Bond issue calculated at time n, in per cent of the par value;

Pi,n – the face value of the i-th Bond issue calculated at time n, in RUB;

Ai,n – the Accumulated Coupon Income on the i-th Bond issue calculated at time n, in RUB;

Gi,n – the Coupon Income paid on the i-th Bond issue at time n, in RUB;

Ni,n – the volume of i-th Bond issue at time n, in securities units;

Wi,n – the coefficient limiting the share of capitalisation of the i-th Issuer of Bond (the “Weighting Coefficient”) is equal to 1, unless otherwise is provided in section 5 of this Methodology.

* + 1. Additional Indicators are calculated using the formulae below:
			1. The Weighted Average Duration of the Index is calculated as follows:

$$D\_{n}=\frac{\sum\_{i=1}^{N}D\_{i,n}(\frac{P\_{i,n}}{100}∙FV\_{i,n}+A\_{i,n}+G\_{i,n})∙ N\_{i,n}∙ W\_{i,n},}{\sum\_{i=1}^{N}(\frac{P\_{i,n}}{100}∙FV\_{i,n}+A\_{i,n}+G\_{i,n})∙ N\_{i,n},∙ W\_{i,n}}$$

where:

Dn – the Weighted Average Duration at time n.

Di,n – the Duration of the i-th Bond issue calculated at time n, in days.

Pi,n – the average weighted price of the i-th Bond issue calculated at time n, in per cent of the par value.

FVi,n – the average par value of the i-th Bond issue calculated at time n, in RUB.

Ai,n – the Accumulated Coupon Income of the Bond calculated at time n, in RUB.

Gi,n – the Coupon Income paid on the day n for the i-th Bond issue at time n, in RUB.

Ni,n – the volume of i-th Bond issue at time n, in securities units;

Wi,n – the coefficient limiting the share of capitalisation of the i-th Bond Issuer (“Weighting Coefficient”) is equal to 1, unless otherwise is provided in section 5 hereof.

* + - 1. The Weighted Average Return is calculated as follows:

$$Y\_{n}=\frac{\sum\_{i=1}^{N}Y\_{i,n}(\frac{P\_{i,n}}{100}∙FV\_{i,n}+A\_{i,n}+G\_{i,n})∙ N\_{i,n}∙ W\_{i,n},}{\sum\_{i=1}^{N}(\frac{P\_{i,n}}{100}∙FV\_{i,n}+A\_{i,n}+G\_{i,n})∙ N\_{i,n},∙ W\_{i,n}}$$

where:

Y n – the Weighted Average Return at time n.

Yi,n – the Return of the i-th Bond issue calculated at time n in days.

Pi,n – the average weighted price of the i-th Bond issue calculated at time n, in per cent of the par value.

FVi,n – the average par value of the i-th Bond issue calculated at time n, in RUB.

Ai,n – the Accumulated Coupon Income of the Bond calculated at time n, in RUB.

Gi,n – the Coupon Income paid on the day n for the i-th Bond issue at time n, in RUB.

Ni,n – the volume of i-th Bond issue at time n, in securities units;

Wi,n – the coefficient limiting the share of capitalisation of the i-th Bond Issuer (“Weighting Coefficient”) is equal to 1, unless otherwise is provided in section 5 hereof.

* + 1. The Indices and the Weighted Average Return are calculated to two decimal places. The Weighted Average Duration is calculated to the nearest integer.
		2. The Index inception date is 30 December 2019. The initial value of the Index is 100.
		3. If trading in a Bond issue included in the Index Constituents was suspended (stopped), the last value of the weighted average price of such Bond issue is to be used to calculate the Index until the trading is resumed or the Bond issue is removed from the Index Constituents.
1. **Index Construction Principles**
	1. The Bonds, which prices are used to calculate the Index, are eligible as Index Constituents if they comply with the following criteria:
		1. The Issuer has discharged its obligations to pay coupons, redeem the issue through the Offer, or redeem all Bond issues admitted to trading on the Exchange in full. If the Issuer has failed to meet all obligations arisen out of its technical default and/or a default of a Bond issue admitted to trading on the Exchange, the Bonds can be included in the Index Constituents provided that the Issuer discharges such failed due to technical default and/or default obligations with regard to all Bond issues admitted to trading on the Exchange and due and timely discloses the material event as required by the Bank of Russia’s regulatory acts.
		2. The Bond issue currency is RUB.
		3. The rates of all coupons stipulated in the issue documents for the period until the Maturity Date have been determined.
		4. The volume of Bond issue at par value is at least RUB 200 million.
		5. The National Rating Agencies have assigned to the Issuer and/or the issue of the Bonds a credit rating of at least ruB-/B-(RU)/B-.RU/ B-|ru|, and up to a maximum of ruBBB/BBB(RU)/BBB.RU/BBB|ru|.
		6. The term to maturity is at least three months
		7. The terms of the Bond issue do not provide for the expiry of the call option earlier than three months after the Index Constituents become effective.
		8. The number of trading days for the Bond issue in the Main Trading Session of the Main Trading Mode T+ (the Main Trading Mode) is not less than 30% of total trading days in the Main Trading Mode for three months preceding the date the Index Constituents are selected.
		9. The Value of Average Return does not exceed the sum of 30% and the Curve (the Maximum Yield Spread), calculates as the average of the Curve as of Maturity Date for 10 trading days preceding the Index Constituents Date. The Maximum Yield Spread value is indicative and can be adjusted depending on the interest rates existing in the Russian debt market at the time of Index review.
		10. The Bond issuer is not a specialised financial organisation.
	2. The Exchange is entitled to make a decision on inclusion in the Index of Bond Issues that do not meet requirements specified in clauses 3.1.3-3.1.10 of the Methodology. hereof.
2. **Index Review**
	1. The Bonds shall be included in or removed from the Index when the Index is reviewed in accordance with the Exchange’s decision.
	2. Normally, the list of Index Constituents is reviewed at most on a quarterly basis, unless otherwise is indicated in this Methodology. The reviewed Constituents shall come into effect upon commencement of the Main Trading Session on the first trading day of March, June, September and December. The Exchange may decide on other dates for the reviewed Index Constituents to come into effect.
	3. The Exchange is entitled to set a date for an extraordinary review of the Index Constituents in the following cases:

- upon exclusion of a Bonds issue from the list of securities admitted to trading on the Exchange (termination of Exchange trade in the corresponding Bond issue);

- if the issuer of Bonds in the Index Constituents fails to meet coupon payment obligations, redeem the issue through the Offer, or redeem Bond issue(s) of the issuer admitted to trading on the Exchange (default).

- if the National Rating Agency cancels or downgrades the rating of the Issuer and/or Issue of Bonds;

- in other cases which can have a material effect on Index calculation.

* + 1. The new Weighting Coefficients for Bonds in the list of Index Constituents calculated using the information on Bonds as at the date preceding the date the new Index Constituents come into effect shall ally as of the date the Index Constituents have been reviewed.
		2. If trading in a Bond issue included in the Index Constituents list was suspended (stopped), the last value of the weighted average price of the Bond issue shall be used to calculate the Index during the period of suspension of trading in the issue (until resumption of trading or until the date of exclusion of the issue from the Index).

1. **Limitation on the Share of Bond Value in theIndex**
	1. If the number of issuers in the Index is at least 20, the maximum weight of the capitalisation of the Issuer's Bonds (total capitalisation of various Bond issues of the Issuer, if the Index Constituents include various Bond issues of the Issuer) in the total capitalisation of the Bond within Index is limited to 5% (S=5%).
	2. If the list of Index Constituents includes Bonds issued by microfinance organisations (hereinafter, Microfinance Organisation Bonds), and the number of issuers of Bonds in the Index totals at least 20, the maximum weight of Microfinance Organisation Bonds in total capitalisation of the Bonds included in the Index is limited to 10% (K=10%).
	3. The weight of the i-th Bond in the Index is calculated as follows:

$$Wght\_{i}=\frac{MC\_{i}}{\sum\_{i=1}^{N}MC\_{i} }∙100\%,$$

where:

Wghti – the Weight of i-th Bond;

MCi – the capitalisation of i-th Bond calculated using the formula:

$$MC\_{i}=(\frac{P\_{i}}{100}∙FV\_{i}+A\_{i})∙ N\_{i}∙ W\_{i}$$

N – total number of Bonds.

The weight of the Bonds of one Issuer is calculated as the sum of the Weights of the Bonds of all issues of the Issuer.

* 1. To effect the restriction set out in Clause 5.1 hereof, the Issuers' Weights shall be adjusted as follows:
		+ - * If the Weight of the Issuer in the Index Constituents of the relevant Index exceeds S value, then applicable Weight shall be deemed to be equal to S.
				* The difference between the Weights before and after the cap adjustment is prorated between the Issuers, whose Weights were not subjected to cap adjustment.
				* If the Weight of Bonds issued by microfinance organisations in the Index exceeds K value, then the applicable Weight of the microfinance organisation issuers shall be deemed to be equal to K value.
				* The difference between the Weights before and after the cap adjustment is prorated between the Issuers, whose Weights were not subjected to cap adjustment.
				* The above actions are repeated iteratively as long as there are Issuers whose Weights exceed the S value, and the Weight of the Credit Institutions Bonds exceeds the K value.
	2. Weighting Coefficients Wi vary from 0 to 1, with seven decimal places accuracy subject to mathematical rounding. Weighting Coefficients Wi are set as of the date on regular or extraordinary Index review.
	3. If it is impossible to concurrently meet the limits provided for in clauses 5.1 and 5.2, the Issuer’s weight limit has priority.
	4. If the share of the Bonds issue value on the date of review of the Index Constituents does not meet the requirements of clauses 5.1, 5.2 hereof, the Exchange has the right to set the Bond issue volume Ni,t-1, used to calculate the Index in accordance with Section 2 of this Methodology, so that the share of the Bonds issue value does not exceed the value established by clauses 5.1 and 5.2.
1. **Index Calculation Control**
	1. The Debt Market Benchmarks Committee
		1. The Debt Market Benchmarks Committee performs the following functions:
			1. development of expert opinion, proposals and recommendations on Index management for the authorised body of the Exchange;
			2. development of Index Methodology improvement proposals;
			3. development of proposals on new technologies, calculations, and adoption of recommendations on the same;
			4. development of Index and additional factors disclose recommendations;
			5. consideration of claims and proposals from Index users and, if there are valid and substantiated claims, development and implementation of appropriate changes jointly with the Exchange;
			6. development of proposals on improvement of the Index management system performance, consideration of respective issues and adoption of recommendations.
	2. All index creation, calculation, revision and update activities are governed by a set of administrative principles and rules outlined in the Index Management Policy of Moscow Exchange.
	3. If any technical failure occurs, specifically in Index calculation or in the course of trading in securities on the Exchange, which corrupts data used for Index calculation, the Index values may be recalculated. Such recalculation is carried out within the shortest possible time from the moment the technical failure has been detected. Information on the Index values as recalculated is published on the Exchange’s website.
	4. In the event of circumstances which can have a negative effect on the adequacy of the Index reflecting the actual state of the Russian bond market, the Exchange may take any actions to ensure adequacy of the Index, e.g. remove Bonds from Index Constituents etc.
2. **Disclosure**
	1. The Exchange discloses the Index values and Additional Factors for the previous trading day every trading day no later than 12:00 MSK.
	2. Announcements on the index periodic review are announced within three working days as from the date of Exchanges resolution on approval of a new List of Constituents, but no later than one week prior to the day on which such resolution becomes effective.
	3. Announcements on extraordinary reviews of Index Constituents are posted no later than on the day preceding the effective day of the Exchange's resolution on approval of new Index Constituents.
	4. The Information to be disclosed under this Methodology is posted on the official website of the Exchange. Such information may also be disseminated in other ways, specifically through information agencies distributing data about on-Exchange trading in Securities.