

KAZAKHSTAN STOCK EXCHANGE JSC

Approved

by a decision of Management Board of
Kazakhstan Stock Exchange JSC

(Minutes No. 162 of the meeting dated
December 11, 2020)

Effective

from December 28, 2020

NOTICE

This Methodology in English has been translated by employees of Kazakhstan Stock Exchange for information purposes only. In case of any incompliance of this translation with the Methodology original version in Russian, the latter prevails.

METHODOLOGY

for calculating the money market indicators

Developed by: Information and statistics department

Almaty
2020

List of amendments

1. Change No. 1:

- approved by the decision of the Board of JSC "Kazakhstan Stock Exchange" (Minutes No.26 of March 16, 2021);
- Effective as of March 19, 2021

2. Change No. 2:

- approved by the decision of the Board of JSC "Kazakhstan Stock Exchange" (Minutes No.86 of August 12, 2021);
- Effective as of August 18, 2021

3. Change and addition No. 3:

- approved by the decision of the Board of JSC "Kazakhstan Stock Exchange" (Minutes No.89 of August 24, 2021);
- Effective as of September 15, 2021

4. Additions No. 4:

- approved by the decision of the Board of JSC "Kazakhstan Stock Exchange" (Minutes No.59 of June 22, 2023);
- Effective as of June 30, 2023.

This Methodology determines the list of money market indicators calculated by Kazakhstan Stock Exchange JSC (hereinafter – the Exchange), and the procedure for calculation of these indicators.

Article 1. General provisions

1. This Methodology uses concepts defined by other internal documents of the Exchange.
2. For purposes of this Methodology:
 - 1) deals are understood as deals concluded on trades conducted by the Exchange;
 - 2) orders are understood as orders for the conclusion of deals;
 - 3) an effective day for a particular financial instrument means the day during which at least one deal was concluded with this financial instrument in the Exchange's trading system;
 - 4) repo with a GS Basket means repo transactions performed in the Exchange's trading system in the automatic method, in relation to securities that are included in the GS Basket in accordance with the Exchange's internal documents;
 - 5) Currency swap transactions shall mean transactions in foreign currencies conditionally referred to as short-term currency swap in accordance with the internal document of the Exchange, defining the rules of exchange activities (*this sub-item was amended by the decision of the Exchange Management Board of August 24, 2021*);
 - 6) calendar days means all days of the calendar year, including working days, weekends and holidays (*this sub-item was included by the decision of the Exchange Management Board of August 24, 2021*);
 - 7) Stakeholders shall mean persons who have relevant work experience, knowledge of the stock market and are not members of the Committee and participate in the process of forming indices and/or indicators (*this sub-item was included by the decision of the Exchange Management Board of June 30, 2023*).
3. The following items are not used for calculating the money market indicators:
 - 1) deals concluded at additional sessions, as defined by the Exchange's internal documents;
 - 2) deals concluded in the modes of negotiated deals, as well as by trading deals that are not open trading methods;
 - 3) orders submitted to conclude deals specified in sub-items 1) and 2) of this item.
4. The Exchange calculates the following indicators and indicators of the money market (hereinafter - indicators) (*this paragraph was changed by a decision of the Exchange Management Board of August 24, 2021*):
 - 1) indicators of the repo transactions market:

TONIA¹ is the main indicator of the repo transactions market, representing the weighted average interest rate on repo transactions with a GS Basket for a period of one day, calculated at the end of each trading day in accordance with article 3 of this Methodology;

¹ Tenge OverNight Index Average.

TRION² – weighted average interest rate on repo transactions with the GS Basket, carried out with the participation of the Central Counterparty (hereinafter – the CCP), for a period of one day, calculated during each trading day in accordance with article 4 of this Methodology;

TWINA³ – weighted average interest rate on repo transactions with a GS Basket, carried out with the participation of the CCP, for a period of seven days, calculated during each trading day in accordance with article 4 of this Methodology;

2) indicators of the currency swap market:

SWAP-1D (USD) is an indicator of the yield of USD/KZT currency swap transactions, which is the average yield on all opening deals of the corresponding currency swap for a period of one business day weighted through the volume of deals;

SWAP-2D (USD) is an indicator of the yield of USD/KZT currency swap transactions, which is the average yield on all opening deals of the corresponding currency swap for a period of two business days weighted through the volume of deals;

3) MM Index⁴ – composite indicator of the money market, which is a weighted average of SWAP-1D (USD) and TONIA indicators through the volume of transactions (*this sub-item was changed by the decision of the Exchange Management Board of August 24, 2021*);

4) indicators TONIA Compounded:

TONIA Compounded Index, short name "TCI" - TONIA Compounded Index calculated each calendar day in accordance with Article 3-1 of this Methodology;

TONIA Compounded Rate, short name "TCR", calculated each calendar day in accordance with Article 3-1 of this Methodology for the periods:

TCR_1M - composite TONIA rate for moving periods with a term of one month;

TCR_3M - composite TONIA rate for moving periods with a term of three months;

TCR_6M - composite TONIA rate for moving periods with a term of six months.

(This sub-item was included by the decision of the Exchange Management Board of August 24, 2021)

5. The Exchange publishes information on indicators and indices specified in in clause 4 of this article, on the Exchange website (www.kase.kz) (*this item was changed by the decision of the Exchange Management Board of August 24, 2021*).
6. Changes and/or additions to this Methodology are subject to posting (publication) on the Internet resource of the Exchange at least five calendar days before the effective date of these changes and/or additions, with the exception of changes and/or additions that are of an editorial and/or clarifying nature and do not affect the calculation of indicators.
7. In case of amendments to this Methodology, including changes in calculation of indices and indicators, consultations with stakeholders can be allowed.

² From the English "Tenge repo index OverNight" (*this footnote was changed by the decision of the Exchange Management Board of March 16, 2021*).

³ Tenge Week INdex Average.

⁴ От английского "Money Market Index".

Consultations with stakeholders shall be carried out through face-to-face or absentee discussions and consultations, results of the discussion shall be presented to the Committee to take into account their views when making decisions.

(This item was included by the decision of the Exchange Management Board of June 30, 2023)

Article 2. General conditions of indicators calculation

1. Values of the indicators specified in subparagraphs 1)-3) of paragraph 4 of article 1 of this Methodology are published by the Exchange with the accuracy of two decimal places with rounding according to mathematical rounding rules (figures up to five are reduced to zero, and figures from five and above are increased to ten).

The TCI values specified in subitem 4) of item 4 of item 1 of this Methodology are published by the Exchange with the accuracy of ten decimal places with rounding according to mathematical rounding rules (figures up to five are reduced to zero, and figures from five and above are increased to ten).

The TCR values specified in subitem 4) of item 4 of item 1 of this Methodology are published by the Exchange with the accuracy of four decimal places with rounding according to mathematical rounding rules (figures up to five are reduced to zero, and figures from five and above are increased to ten).

(This sub-item was included by the decision of the Exchange Management Board of August 24, 2021)

2. If there are no transactions during the trading day, the parameters of which are necessary for the calculation of any indicator, the calculation of this indicator on that day is not carried out, taking into account the peculiarities established by Article 3 of this Methodology.
3. In order to ensure the adequacy of indicator values to the objective characteristics of the financial market, these values may be adjusted by the Committee on Indices and Indicators. The terms and procedure for such adjustment are defined in Article 7 of this Methodology *(this item was changed by the decision of the Exchange Management Board of August 12, 2021)*.

Article 3. Calculation of the indicator TONIA

1. The main indicator of the repo transactions market TONIA is calculated once a day at the end of each trading day of the Exchange.
2. For calculation of the indicator TONIA:
 - 1) opening deals of repo transactions with the GS Basket for a period of one day, concluded on the day of the indicator calculation, with each of them characterized by a volume of at least 1 million tenge, are selected;
 - 2) the selected deals are ranked by the size of the rates of yield on these deals from the lowest to the highest;
 - 3) a value of 5% of the total amount of all selected deals is determined;
 - 4) the cut-off of deals with the highest and lowest yield is performed with the total volume of such deals, equal to the value of 5%, determined in accordance with sub-item 3) of this item. The cut-off is done separately for deals with the highest yield and separately for deals with the lowest yield.

When selecting deals for cutting off at the upper and lower thresholds, only a part of the deal can be cut off in order to comply with the 5% value of the cut-off volume. At the same time, the part of the deal with the lowest yield

value is cut off from the deals with the highest yield, the deal with the highest yield value is cut off from the deals with the lowest yield;

- 5) after cutting off deals the total volume of central 90 % of deals is calculated. If such volume is more or equal to KZT100 bn, the TONIA indicator is calculated in accordance with sub-item 6) of this item, if less than KZT100 bn or repo transactions opening with the Basket of GS for one day on the specified trading day are absent - in accordance with sub-item 7) of this item (*this sub-clause was changed by the decision of the Exchange Management Board of August 24, 2021*);
- 6) the following formula is used:

$$\text{TONIA}_d = \frac{\sum_{i=1}^n (V_i \times Y_i)}{\sum_{i=1}^n V_i}, \text{ where:}$$

TONIA_d – TONIA indicator value on the day of calculation in % p.a.;

V_i – volume of the i repo opening transaction in tenge;

Y_i – repo rate on the i repo opening deal in % p.a.;

n – number of transactions opening repo transactions;

- 7) the following formula is used (*this paragraph was changed by the decision of the Exchange Management Board of August 24, 2021*):

$$\text{TONIA}_d = \text{BRate}_d + \frac{\sum_{i=1}^5 (\text{TONIA}_i - \text{BRate}_i)}{5}, \text{ where}$$

TONIA_d – TONIA indicator value on the day of calculation, in % p.a.;

BRate_d – value of the prime rate set by the National Bank of the Republic of Kazakhstan effective on the day of calculation of TONIA, in % per annum;

TONIA_i – TONIA indicator value for each of the five trading days of the Exchange preceding the calculation date;

BRate_i – value of the prime rate set by the National Bank of the Republic of Kazakhstan, which was in effect on the day corresponding to the day of calculation of TONIA_i, in % per annum.

Статья 3-1. Расчет показателей TONIA Compounded

1. Calculation and publication of TONIA Compounded indicators are performed every calendar day on the basis of the last calculated value of the TONIA indicator.
2. TCI is calculated based on the last calculated TONIA value using the following formula:

$$\text{TCI}_i = \text{TCI}_{r-1} \times \left(1 + \frac{\text{TONIA}_r \times n_i}{365} \right), \text{ where:}$$

TCI_i – TONIA composite index calculated on the i-th calendar day;

r – the day of calculation of the last TONIA value;

TONIA_r – the last calculated TONIA value;

n_i – the number of days between the i-th calendar day and the day of the previous calculated TONIA value.

3. Initial value of the TCI index is fixed at 1.0000000000 points as of December 28, 2020.

4. TCR indices shall be calculated on the basis of TCI values determined in accordance with paragraph 2 of this article. The calculation of TCR indices uses a sliding window equal to the actual number of calendar days in the calculation period, which varies depending on the period for which the TONIA composite rate is calculated. TCR is calculated according to the following formula:

$$TCR_i = \left(\frac{TCI_y}{TCI_x} - 1 \right) \times \frac{365}{d}, \text{ where:}$$

- TCR_i – the composite TONIA rate calculated on the i-th calendar day;
 - TCI_y – the TONIA composite index calculated as of the end date of the calculation period (y);
 - TCI_x – TONIA composite index at the start date of the billing period (x), calculated as the difference between the end date of the settlement period and the actual number of calendar days in the settlement period;
 - d – the actual number of calendar days in the settlement period.
5. TCR_1M, TCR_3M and TCR_6M are calculated according to the formula given in item 4 of this Article. The end date of the calculation period for each indicator is determined according to the term of the composite TONIA rate specified in sub-item 4) of item 4 of Article 1 of this Methodology.

(This article was included by decision of the Exchange Board of Directors on August 24, 2021)

Article 4. Calculation of the repo transactions market's indicators

1. The repo transactions market indicators, except the TONIA indicator, are calculated during each trading day of the Exchange as deals are concluded. Each new indicator value is calculated after the conclusion of each repo transaction's opening deal for the respective instrument.
2. The TRION indicator is calculated based on the parameters of all opening deals of repo transactions with the GS Basket using the CCP services for a period of one day according to the following formula:

$$Y = \frac{\sum_{i=1}^n (V_i \times Y_i)}{\sum_{i=1}^n V_i}, \text{ where:}$$

- Y – weighted average repo rate in % per annum – the indicator value;
 - V_i – volume of the i-th opening deal of the repo transaction in tenge;
 - Y_i – repo rate on the i-th opening deal of the repo transaction in % APR;
 - n – number of opening deals of repo transactions.
3. The TWINA indicator is calculated on the basis of the parameters of all opening deals of repo transactions with the GS basket using the CCP services for a period of seven days according to the formula, which is given in item 2 of this article.

Article 5. Calculation of indicators of the currency swap transactions market

1. The calculation of yield indicators of currency swap transactions SWAP-1D (USD) and SWAP-2D (USD) is carried out during each trading day of the Exchange on currency swap transactions for a period of one or two working days, respectively, as transactions are concluded. The calculation of each new value of the indicators occurs after the conclusion of each opening deal of transactions of the corresponding currency swap.
2. The SWAP-1D (USD) indicator is calculated on the basis of the average yield weighted through the volume of deals, on all opening deals of currency swap

transactions for one business day, concluded in KASE's trading system, according to the following formula:

$$Y = \frac{\sum_{i=1}^n (P_i \times V_i)}{\sum_{i=1}^n V_i}, \text{ where:}$$

- Y – weighted average rate of currency swap in % per annum – the indicator value;
- P_i – rate of yield on the i-th opening deal of a currency swap in % per annum;
- V_i – volume of the i-th opening deal of the currency swap;
- n – number of opening deals of the currency swap.
3. The SWAP-2D indicator (USD) is calculated on the basis of the average yield weighted through the volume of deals on all opening deals of currency swap transactions for a period of two working days, concluded in KASE's trading system, according to the formula given in item 2 of this article.

Article 6. Calculation of the MM Index

1. The calculation of the composite indicator MM Index is carried out every day on the working days of the Exchange after the end of trading and after calculation of the indicators TONIA and SWAP-1D for the current day.
2. The MM Index is calculated as a weighted average of the TONIA and SWAP-1D indicators. In this case, the total volume of deals is used for weighing, on the basis of the parameters of which the indicators TONIA and SWAP-1D are calculated on a particular day.

If on a particular day the TONIA indicator is calculated in accordance with sub-item 7) of item 2 of Article 3 of this Methodology, then the volume for weighing the TONIA is taken equal to 100 billion tenge.

Article 7. Special powers of the Committee on Indices and Indicators with respect to indicators

(This title was changed by the decision of the Exchange Board of Directors on August 12, 2021)

1. The Committee on Indices and Indicators (hereinafter referred to as the Committee) has the right to adjust the values of indicators and their indicators by excluding from their calculations the parameters of those deals, which, in the Committee's opinion, unrepresentatively affect (affected) these values (for example, non-performed deals; deals, at conclusion of which technical errors were committed; deals, prices of which obviously dissonant with the market condition and/or market dynamics of prices of respective financial instruments) *(this paragraph was amended by the decisions of the Exchange Management Board of August 12, 2021 and August 24, 2021).*

If the Committee decides to exclude the parameters of a particular deal (particular deals) from the calculation of a particular indicator, the corresponding recalculation of this indicator is carried out no later than the business day following the day on which the non-representative value of this indicator was received.

2. When the Committee uses its special powers in accordance with item 1 of this article, the minutes of its meeting must reflect the reasons for using these powers and the actions taken by it in accordance with these powers.

Article 8. Discontinuation of the indicators calculation

1. In case of discontinuation of the calculation of indicators, as well as in case of changes in the calculation of the indicator or for other reasons, due to a change in the market structure or because of circumstances entailing the non-representativeness of the indicators in relation to the indicator measured by it, the Committee shall determine the duration of the transition period not exceeding one year, during which the existing indicator is valid.
2. If necessary, the Committee can introduce parallel indicators (for example, if possible, calculate an existing indicator for a certain period of time so that existing contracts and deals with financial instruments were executed using it, with the simultaneous publication of a new indicator) to make a systematic transition to a new indicator. If it is impossible to identify a suitable alternative, the calculation of the indicator is temporarily suspended until a new one is adopted.
3. A third-party consultant organization may be involved in the process of selection and transition to an alternative indicator, which will be selected on a competitive basis. The Exchange should recommend to interested persons and banks that use indicators when determining any figures or for other purposes, to take measures to ensure:
 - 1) the availability in contracts or other financial instruments that refer to the indicator, thought out alternative provisions in the event of significant changes or cancellation of the calculation of the indicator to which they refer;
 - 2) that the participants of the money and stock markets are aware of the probability that various factors, including external factors that do not depend on the Exchange, may lead to the need for a significant change in the indicator.

Article 9. Control and audit system

1. The Committee shall provide an appropriate system of control over the process of formation and dissemination of indicators and relevance of this Methodology by reviewing reports by the indices subdivision submitted to the Committee as necessary, but at least twice a year subject to Appendix 2 to the Regulation on the Indices and Indicators Committee (*this sub-item was changed by the decision of the Exchange Management Board of June 30, 2023*).
2. This Methodology documents the process of calculating and disseminating money market indicators.
3. At the request of the authorized body or the National Bank of the Republic of Kazakhstan, the Exchange provides complete information on the procedure for calculating and distributing the money market indicators, as well as information about the values of indicators.
3. The Committee in the process of formation and dissemination of indicators ensures the following:
 - 1) settlement of conflicts of interest between the Exchange and interested parties, which are participants in the exchange market;
 - 2) the integrity and proper quality of the indicator development process, namely measures to stimulate the provision of reliable input data for the formation of the indicator, including proper verification of their sources, measures to ensure the effectiveness of reporting mechanisms, provision of high-quality infrastructure, policies and risk management procedures, including operational risks, and measures on agreeing upon the methodology for calculating the indicator with market participants;

- 3) formation of indicators by employees with professional knowledge in the field of methodology and calculation of indicators of the money and stock markets.

Article 10. Final provisions

1. Responsibility for the timely introduction of changes and/or additions (updating) to this Methodology rests with the Department of Information and Statistics.
2. This Methodology is subject to updating as necessary, but at least once every three years, counting from the effective date of this Methodology.

Chairperson of the Management Board

A. Aldambergen