

KASE CLEARING CENTRE JSC

A p p r o v e d

by decision of the Management Board of
KASE Clearing Centre JSC

(minutes No. 58 of the meeting
dated September 4, 2024)

E f f e c t i v e

from September 6, 2024

M E T H O D O L O G Y

for determining risk parameters of financial instruments

LIST OF AMENDMENTS

1. Changes and additions No. 1:

- approved by a decision of the Management Board of KASE Clearing Centre JSC (minutes No. 66 of the meeting dated August 28, 2025);
- effective as of August 29, 2025.

2. Change No. 2:

- approved by a decision of the Management Board of KASE Clearing Centre JSC (minutes No. 10 of the meeting dated February 19, 2026);
- put into effect from the date of commissioning of the relevant functionality for automation of settlements.

3. Changes No. 3:

- approved by a decision of the Management Board of KASE Clearing Centre JSC (minutes No. 37 of the meeting dated May 21, 2026);
- effective as of May 21, 2026.

This Methodology has been developed in compliance with:

- 1) the Requirements for the risk management system of a clearing organization, conditions and procedure for monitoring, control and risk management in the clearing organization as approved by Decree No. 59 of the Management Board of the National Bank of the Republic of Kazakhstan dated February 24, 2012;
- 2) the Requirements for the risk management system of the central counterparty, conditions and procedure for monitoring, control and risk management of the central counterparty as approved by Decree No. 11 of the Board of the National Bank of the Republic of Kazakhstan dated January 28, 2016;
- 3) the Rules for implementation of clearing activities under transactions with financial instruments¹ (hereinafter – the Clearing Rules);
- 4) other internal documents of KASE Clearing Centre JSC (hereinafter – the Clearing Centre) regulating the procedure for determining risk parameters of financial instruments when making transactions with which the Clearing Centre carries out clearing activities and/or performs functions of the central counterparty.

This Methodology establishes the procedure for calculation and determination of risk parameters of financial instruments used by the Clearing Centre to evaluate, control and manage risks under transactions with financial instruments with which the Clearing Centre, subject to the Clearing Rules, carries out clearing activities and/or performs functions of the central counterparty.

Chapter 1. GENERAL PROVISIONS

Article 1. General concepts and symbols

1. This Methodology shall use concepts and designations defined by the laws of the Republic of Kazakhstan, the Clearing Rules and other internal documents of the Clearing Centre and also the following:
 - 1) the Committee – the Market Risk Committee, which is a permanent collegial body of the Management Board of the Clearing Centre, task of which is to analyze, monitor, identify and manage risks associated with the situation on financial markets, activities of the Clearing Centre, clearing participants, issuers and investors, as well as to prepare recommendations for the Management Board of the Clearing Centre;
 - 2) authorized subdivision – a structural subdivision of the Clearing Centre, functions of which include calculation, determination and monitoring of risk parameters of financial instruments, in making transactions with which the Clearing Centre carries out clearing activities and/or performs functions of the central counterparty;
 - 3) risk parameters of financial instruments – a set of parameters defined by this Methodology for separate exchange markets, necessary for analysis, monitoring, identification and management of risks associated with a situation on the exchange markets and activities of the Clearing Centre, when it performs functions of the central counterparty;
 - 4) volatility of the price of a trading instrument (hereinafter – volatility) is a measure of the variability of indicative repo rates/indicative rates for transactions with foreign currency, prices of financial instruments, indices and indicators (*this sub-item was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025*).

¹ Approved by decision of the Board of Directors of the Clearing Centre (minutes No. 7 of the meeting dated June 5, 2023).

2. Concepts and symbols used in this Methodology can also be used in other internal documents of the Clearing Centre, in the official documentation and correspondence of the Clearing Centre.
3. Risk parameters of financial instruments shall be divided into the following categories:
 - 1) fundamental parameters – parameters used to calculate risk parameters subject to approval and/or settlement risk parameters of financial instruments of individual exchange markets;
 - 2) risk parameters subject to approval – risk parameters of financial instruments determined by methods described in this Methodology and established by the Committee subject to the procedure provided for subject to Chapter 2 of this Methodology;
 - 3) settlement risk parameters – risk parameters of financial instruments required to control and monitor risks associated with a situation on the exchange markets and activities of the Clearing Centre when performing the functions of the central counterparty, determined subject to this Methodology, based on the risk parameters established by the Committee.

Article 2. Fundamental parameters

1. Fundamental parameters shall be established by the Committee for each individual exchange market and/or class of financial instrument and shall be divided into basic and technical parameters.
2. Basic fundamental parameters shall be used to determine risk parameters subject to approval.
3. Technical fundamental parameters shall be used to determine settlement risk parameters.
4. The following parameters shall be considered as basic fundamental parameters:
 - 1) **confidence level (α)** – a parameter that determines the probability that the confidence interval used to estimate volatility contains a true value of the parameter being calculated;
 - 2) **historical period** – a parameter that determines the period for calculation of historical volatility;
 - 3) **risk evaluation horizon (T_{RH} – first level risk evaluation horizon, T_{Likv} – second level risk evaluation horizon)** – a parameter defining the first (second) level time period evaluated as sufficient to identify and resolve cases of default on (improper discharge of) obligations under transactions and/or margin requirements by the clearing participant, in days;
 - 4) **concentration ratio (C_{conc})** – a share (in percent) of an average daily trading volume for a financial instrument on the exchange market taken into account to determine the concentration boundary for a financial instrument;
 - 5) **upper boundary of the weighting ratio (a_{upper})** – a restrictive parameter used in volatility calculation by method of exponentially weighted moving average (hereinafter – EWMA);
 - 6) **lower boundary of the weighting ratio (a_{lower})** – a restrictive parameter used in volatility calculation by method of exponentially weighted moving average (hereinafter – EWMA);
 - 7) other parameters defined by the internal document of the Clearing Centre "Methodology for Determination of Settlement prices of Securities" (hereinafter – the Methodology for Determination of Settlement prices of Securities) as fundamental parameters.

5. The following parameters intended for the following purposes shall be referred to technical fundamentals parameters of the stock market:

- 1) calculation of market risk rates and price corridor boundaries:

- x_{pr}** – the coefficient of ratio of the price corridor value to the value of the market risk evaluation range for securities;
- n** – the period of ban to decrease market risk rates, in days;
- h** – the minimum step of changing market risk rates, in fractions;
- PcH_{max}** – the upper maximum value of deviations of order prices during the day for securities not included in the list of financial instruments traded on conditions of partial collateral, in fractions;
- PcL_{max}** – the lower maximum value of intraday order price deviations for securities not included in the list of financial instruments traded on conditions of partial collateral, in fractions;

- 2) calculation of interest risk rates and repo rate corridor boundaries:

- x_{IR}** – the coefficient of the repo rate corridor value to the evaluation range of the interest risk value;
- n_{IR}** – the period of ban to decrease the interest risk rate, in settlement days;
- h_{IR}** – the minimum step of change of the interest risk rate, in percent per annum;
- RR_{fi}** – the repo transaction market liquidity risk rate, in percent per annum;

- 3) shifting the boundaries:

- w** – the value of maximum approximation of the best orders to the price corridor boundary, in fractions;
- w_{IR}** – the value of maximum approximation of the best orders to the repo rate corridor boundaries, in fractions;
- u** – the period of time during which the best order prices can be as close as possible to the boundary of the price corridor/ repo rate corridor, and after which the boundaries are shifted during trading, in seconds;
- Shift** – the coefficient which determines the size of the boundary shift, in fractions;

- 4) default settlement rates:

- SDH_{sec}** – the upper boundary of the default settlement rate on a security, in percent per annum;
- SDL_{sec}** – the lower boundary of the default settlement rate on a security, in percent per annum;
- CONST_{KZT}** – the interest premium on tenge, in percent per annum.

6. The following parameters intended for the following purposes shall be referred to technical fundamental parameters of the currency market:

- 1) calculation of market risk rates and price corridor boundaries:

- x_{pr}** – the coefficient of ratio of the price corridor value to value of the market risk evaluation range for foreign currencies;
- n** – the period of ban to decrease market risk rates, in days;

- h** – the minimum step of changing the market risk rates, in fractions;
- q** – number of the first system transactions that are not used in volatility calculation;
- 2) calculation of interest risk rates and interest risk rate corridor boundaries:
 - x_IR/swapx** – the coefficient defining the ratio between width of the range of upper/lower values of the settlement price of a foreign exchange operation/currency swap transaction and width of the swap price corridor;
 - n_IR** – the period of ban to decrease the interest risk rate, in settlement days;
 - h_IR** – the minimum step of changing the interest risk rate, in percent per annum;
 - RR_{fi}** – the market liquidity risk rate of repo transactions, in percent per annum;
- 3) shifting the boundaries:
 - w** – the value of the maximum approximation of the best orders to the price corridor boundary, in fractions;
 - u** – the period of time during which the best order prices can be as close as possible to the price corridor boundary, and after which the boundaries are shifted during trading, in seconds;
 - Shift** – the coefficient which determines the size of the shift of the boundaries, in fractions;
- 4) calculation of default settlement rates:
 - CONST_{CURR}** – an interest premium on foreign currency (CURR), in percent per annum.
- 7. The following parameters intended for the following purposes shall refer to technical fundamental parameters of the derivatives market:
 - 1) calculation of market risk rates and price corridor boundaries:
 - RangeFut** – width of the price corridor, in fractions;
 - FutMonRange** – width of the monitoring corridor, in fractions;
 - N** – number of price scenarios of the underlying asset;
 - 2) shifting of the boundaries:
 - FutMonNum** – maximum number of a futures contract, when an order for which is at the upper/lower boundary of the price corridor, the boundaries are changed;
 - AutoShiftNumMR** – maximum number of changes in price corridor boundaries;
 - AutoShiftNumIR** – maximum number of changes in boundaries of the evaluation range of the interest risk;
 - FutMonTime** – time used to control boundaries of the futures price corridor, in seconds;
 - FutShift** – amount of the shift in price corridor of the futures contract.

Article 3. Risk parameters subject to approval

1. Risk parameters subject to approval shall be established by the Committee for each individual financial subject to the regulations and procedures established by this Methodology.
2. Based on risk parameters subject to approval, settlement risk parameters shall be determined.
3. Risk parameters subject to approval shall include the following parameters:
 - 1) concentration boundary under financial instruments L_{conc} ;
 - 2) minimum rates of the market risk of financial instruments (MR_{min} , $ConcR_{min}$);
 - 3) minimum interest risk rates of financial instruments ($MinM_IR_{TK}$, $MinSec_IR_{TK}$).
4. Concentration boundary on a financial instrument shall be intended to evaluate a maximum position of the clearing participant in a certain financial instrument that can be liquidated during the risk evaluation horizon without a significant impact on the price of the financial instrument and shall be a value determined in the amount of the financial instrument.
5. Minimum rates of the market risk of financial instruments shall be discounts on value of financial instruments, including those accepted as collaterals, in order to cover possible price (exchange rate) changes in the period between the last revaluation of the value of financial instruments and the time of their sale to ensure that the Clearing Centre discharges its obligations to counterparties in case of realization of the credit risk of a clearing participant.
6. Two levels of minimum rates of the market risk shall be established for each individual financial instrument:
 - 1) minimum rate of the initial margin as the rate of the first level market risk;
 - 2) minimum rate of concentration as the rate of the second level market risk.
7. The minimum rate of the initial margin of a financial instrument shall be determined to evaluate market risk of a net position opened on this financial instrument in an amount less than the value of the established concentration boundary for the specified financial instrument.
8. The minimum concentration rate of a financial instrument shall be determined to evaluate market risk of a net position opened on this financial instrument in an amount not less than the value of the established concentration boundary for the specified financial instrument.
9. Minimum interest risk rates of financial instruments represent values of the probability with a given level of confidence coefficient of change in the settlement repo/swap rates for the specified financial instruments during the risk evaluation horizon and are used to evaluate risks of net positions on the specified financial instruments with future settlement dates.

Article 4. Settlement risk parameters

1. Settlement risk parameters shall be determined by the authorized subdivision for each individual financial instrument based on algorithms, regulations and procedures established by this Methodology, as well as the Methodology for Determination of Settlement prices of Securities.
2. The following parameters shall be referred to settlement risk parameters:
 - 1) settlement prices of financial instruments;

- 2) upper and lower boundaries of the evaluation range of market risks of financial instruments;
 - 3) upper and lower boundaries of the evaluation range of the interest risk (for the stock and currency markets);
 - 4) upper and lower boundaries of price corridors;
 - 5) default settlement rates (for the stock and currency markets).
3. Settlement price of a financial instrument shall determine value of a financial instrument used to revalue positions, establish values of the upper and lower boundaries of the price corridor, as well as the upper and lower boundaries of the market risk evaluation range.
 4. The upper and lower boundaries of the market risk evaluation range of financial instruments shall represent boundaries of interval of price values of a financial instrument used to evaluate market risks under transactions to be closed in trading modes with partial collateral.
 5. The upper and lower boundaries of the evaluation range of the interest risk represent boundaries of interval of interest rate values used to evaluate the interest risk on transactions to be closed in trading modes with partial collateral.
 6. The upper and lower boundaries of price corridors represent the boundaries of the range of price values used to boundary the prices of addressed and non-addressed orders for concluding transactions.
 7. Default settlement rates shall represent a repo/swap rate applied in cases of settlement of obligations on transactions to be closed in modes with partial collateral, for execution of which there is/are insufficient money/financial instruments.
 8. Parameters and symbols intended for evaluation of the volatility and used in the algorithm to determine limiting risk rates under debt securities shall be set out in appendix 1 to this Methodology.
 9. Parameters and symbols intended to determine the risk parameters subject to approval and settlement risk parameters of the stock market shall be set out in appendix 2 to this Methodology.
 10. Parameters and symbols intended to determine risk parameters subject to approval and settlement risk parameters of the currency market shall be set out in appendix 3 to this Methodology.
 11. Parameters and symbols intended to determine risk parameters subject to approval and settlement risk parameters of the derivatives market shall be set out in appendix 4 to this Methodology.

Article 5. Specifics of shifting the boundaries of the price corridor

1. Shift of price boundaries on financial instruments is intended to expand the price corridor.
2. During a trading day, the procedure of automatic or manual shift of price boundaries can be carried out.
3. Procedure of automatic shift of price boundaries shall be carried out in case of the best quotes approaching the price boundaries under financial instruments in the trading mode with partial collateral.
4. Manual shift of price boundaries shall be intended to shift price boundaries under financial instruments with partial collateral and full collateral in case when it is impossible to carry out the procedure of automatic shift of price boundaries.
5. Procedure of automatic shift of boundaries shall be carried out subject to specifics of shifting the boundaries of each individual exchange market in case of an

automatic signal on the need to shift the boundary, except for cases set out in item 6 of this article.

6. The Clearing Centre shall have the right, when an automatic signal is triggered on the need to shift the boundaries, to decide to keep the boundary of the price corridor and/or the boundary of the repo rate corridor unchanged if there is information about absence of significant changes in the current market situation or absence of a representative volume of orders and transactions.
7. On financial instruments in the fully secured trading mode, a manual shift of price boundaries may be carried out in cases set out in item 8 of this article.
8. If necessary, the Clearing Centre can decide to manually shift the boundaries both during trading and before start of the trading, including:
 - 1) if there is information about a significant change in the market situation, prices or an increase in market volatility;
 - 2) if there is a request from the Clearing participant in case of performing the functions of a market maker for a financial instrument or group of financial instruments, if there is information about a significant change in prices of financial instruments on the exchange and over-the-counter markets;
 - 3) if there is a request from the Clearing participant in case of executing a client instruction under transactions/orders with securities being closed/ submitted in modes with the central counterparty subject to the terms and conditions of full coverage, if a copy of the client instruction is provided.

Chapter 2. PROCEDURE FOR DETERMINING RISK PARAMETERS

Article 6. General provisions for determination of risk parameters

1. Calculation and determination of risk parameters of financial instruments shall be performed by the Clearing Centre based on information about submitted orders and closed transactions on relevant exchange markets which is obtained from information systems.
2. If it is impossible to reliably estimate values of risk parameters due to insufficient data for its evaluation, the Committee shall have the right to establish risk parameters for such financial instrument based on expert evaluations.
3. Composition of documents and information based on which the Clearing Centre calculates and determines risk parameters of financial instruments shall be determined by the Clearing Centre on its own and shall not be subject to coordination with clearing participants and members of Kazakhstan Stock Exchange JSC (hereinafter – the Exchange).
4. Fundamental parameters and risk parameters subject to approval shall be established by the Committee based on materials prepared by the authorized subdivision in the manner prescribed by this Methodology.
5. Values of risk parameters of financial instruments subject to approval by the Committee, unless otherwise specified, shall be rounded up to a higher whole value.
6. Values of fundamental parameters and risk parameters subject to approval which are established by the Committee shall be posted on the website of the Clearing Centre (www.kacc.kase.kz).
7. Subject to the Clearing Rules, the Committee can establish individual risk parameters subject to approval of financial instruments for certain clearing participants on certain exchange markets.

8. Individual risk parameters subject to approval shall not be published in mass media, including on the website of the Clearing Centre.
9. Information about establishment of individual risk parameters subject to approval shall be communicated to the clearing participant, for which the individual risk parameters have been established, by sending an official letter of the Clearing Centre.

Article 7. Procedure for determination and establishment of fundamental parameters

1. Decision to establish and/or revise fundamental parameters shall be made by the Committee based on materials prepared by the authorized subdivision.
2. Fundamental parameters shall be established in the following cases:
 - 1) when accepting financial instruments of a new area of the exchange market for clearing services – for basic fundamental parameters;
 - 2) when accepting financial instruments of a new class for clearing services – for technical fundamental parameters.
3. Fundamental parameters shall be revised in the following cases:
 - 1) in case of a significant change in the maximum permissible values of risk indicators established subject to the internal document of the Clearing Centre "Risk Management Policy" – for basic fundamental parameters;
 - 2) in case of a significant change in a market situation and/or risk profile for a certain class of financial instruments – for technical fundamental parameters.
4. The Committee shall, based on materials prepared by the authorized subdivision, have the right to establish fundamental parameters for a financial instrument or for a separate group of financial instruments of a certain exchange market and/or class of financial instruments that differ from those established for financial instruments of the said exchange market and/or class of financial instrument.
5. In the course of preparation of materials on the issue of establishment and/or revision of fundamental parameters, the authorized subdivision shall have the right to request from other structural subdivisions additional information and documents that are necessary, in the opinion of the authorized subdivision, for preparation of materials.
6. Materials on the issue of establishing and/or revising fundamental parameters must necessarily contain:
 - 1) a basis for establishment and/or revision of fundamental parameters;
 - 2) recommended values of fundamental parameters in terms of exchange markets and/or class of financial instrument, if necessary, name of the financial instrument or group of financial instruments;
 - 3) justification for recommended values of fundamental parameters.
7. When establishing the basic fundamental parameters, the following restrictions shall be taken into account:
 - 1) probability corresponding to the reliability level must be at least ninety nine percents (to establish the confidence level);
 - 2) value of the historical period must not be less than the last 12 (twelve) calendar months;
 - 3) horizon for evaluation of the first level of risks cannot be less than two business days.
8. When establishing technical fundamental parameters, specific features of trading on individual exchange markets shall be taken into account, as well as specific

features of the financial instruments for which the specified parameters are established.

Article 8. Procedure for determination and establishment of risk parameters subject to approval

1. Calculation of concentration boundaries for financial instruments of the stock market shall be carried out by the subdivision responsible for management of liquidity of the central counterparty:
 - 1) when preparing materials on issues of including a new financial instrument in the list of financial instruments admitted to transactions with the central counterparty subject to conditions of partial collateral (hereinafter – the T+ List) and/or the list of financial instruments taken into account as a collateral for obligations under transactions on conditions of partial collateral (hereinafter – the T+ Collateral List);
 - 2) upon occurrence of cases of default by the issuer of the financial instrument on its obligations or upon receipt of information indicating a deterioration in a financial condition of the issuer of the financial instrument;
 - 3) upon receipt of information indicating a significant change in liquidity of the financial instrument of the stock market;
 - 4) during a quarterly revision of the risk parameters subject to approval of financial instruments.
2. Calculation of concentration boundaries for financial instruments of the currency market and derivatives market shall be carried out by the authorized subdivision:
 - 1) upon receipt of information indicating a significant change in the liquidity of a financial instrument of the currency market or derivatives market;
 - 2) during a quarterly review of the risk parameters subject to approval of financial instruments.
3. Calculation of minimum restrictive rates of the market risk of financial instruments shall be carried out by the authorized subdivision:
 - 1) when preparing materials on issues of including a new financial instrument in the T+ List and/or the T+ Collateral List;
 - 2) upon occurrence of cases of default by the issuer of the financial instrument of its obligations or upon receipt of information indicating a deterioration in a financial condition of the issuer of the financial instrument;
 - 3) during daily monitoring of sufficiency of the established minimum restrictive rates of market risk for financial instruments;
 - 4) during a quarterly review of the risk parameters subject to approval of financial instruments.
4. Calculation of minimum limiting rates of the interest risk of financial instruments shall be carried out by the authorized subdivision:
 - 1) for the derivatives market during daily monitoring of sufficiency of the established minimum limiting rates of the interest risk of financial instruments;
 - 2) if there is information indicating a significant change in the money market situation;
 - 3) during a quarterly revision of the risk parameters of financial instruments subject to approval.
5. The Committee shall make a decision to establish or revise risk parameters subject to approval based on materials prepared by the authorized subdivision:

- 1) when a new financial instrument is included in the T+ List and/or the T+ Collateral List;
- 2) when the issuer of the financial instrument fails to discharge its obligations or upon receipt of information indicating deterioration in a financial condition of the issuer of the financial instrument;
- 3) in case of a change in the market conditions on stock exchanges, prices of financial instruments, market volatility, volatility of a financial instrument or availability of information that may influence such changes, liquidity or reliability of financial instruments;
- 4) during an annual revision of risk parameters subject to approval of financial instruments.

Chapter 3. VOLATILITY EVALUATION

Article 9. Principles of volatility evaluation

1. Volatility shall determine a measure of variability of prices of a trading instrument and shall be a technical parameter used to calculate risk parameters of financial instruments for certain stock exchange markets.
2. Volatility shall be evaluated based on algorithms described in this Methodology and fundamental parameters established by the Committee for a certain stock exchange market subject to the regulations and procedures established by the procedure for determination of risk parameters.
3. Volatility shall be evaluated depending on characteristics of a certain stock exchange market, type of financial instrument and representativeness of the sampling by one or more of the following methods:
 - 1) standard deviation method;
 - 2) method of exponentially weighted moving average (hereinafter – EWMA);
 - 3) other methods, including methods used by the international information agencies Refinitiv or Bloomberg L.P., which, subject to an expert opinion of the Committee, allow for a reliable evaluation of the value of the specified parameter.
4. If, upon volatility calculation by methods set out in item 3 of this article, values obtained by different methods have discrepancies, depending on characteristics of a particular exchange market, type of financial instrument and representativeness of the sampling, either the maximum of the obtained values or values with the maximum correlation to historical changes in the settlement prices of the financial instrument shall be used.
5. Calculation values of volatility of financial instruments, unless otherwise specified, shall be rounded up to a higher whole value (in percent).
6. The Clearing Centre shall have the right, based on a decision of the Committee, to use other methods of mathematical statistics to evaluate volatility when which determines the risk rates, as well as to calculate the risk parameters of financial instruments that depend on it.

Article 10. Methods for assessing price deviations and volatility

1. The formation of a sample for calculating deviations of indicative repo rates/indicative rates for transactions with foreign currency, prices of financial instruments denominated in tenge, for the historical period, taking into account the accrued coupon income – for the group "debt securities", excluding the accrued coupon income – for the group "other financial instruments", as well as indices,

indicators and volatility used for the purpose of calculating certain risk parameters, is carried out on the basis of the relevant fundamental parameters established by the Committee.

2. The deviation of prices of financial instruments, as well as indices and indicators, expressed in absolute (non-percentage) values, is determined by the following formula:

$$\Delta P_T = \max_{T=0, \dots, T_{RH}} \left\{ \left| \frac{P_T - P_{T-1}}{P_{T-1}} \right|; \dots; \left| \frac{P_T - P_{T_{RH}}}{P_{T_{RH}}} \right| \right\}$$

3. The deviation of indicative repo rates/indicative rates for foreign exchange transactions, as well as indices and indicators expressed as a percentage, is determined by the following formula:

$$\Delta P_T = \max_{T=0, \dots, T_{RH}} \{ |P_T - P_{T-1}|; \dots; |P_T - P_{T_{RH}}| \}$$

4. Volatility using the standard deviation method is calculated using the formula:

$$\text{Stdev} = \sqrt{\frac{\sum_{s=0}^M (\Delta P_T - \bar{\Delta P})^2}{N}}$$

5. Exponential Weighted Error Method (EWMA) volatility is calculated using the formula:

$$\Sigma_{EWMA_T} = \sqrt{\left((1-a_T) \times \sigma_{EWMA_T-1}^2 + a_T \times \Delta P_T^2 \right)}, \text{ where}$$

the weighting factor for the trading day (T) is determined by the formula:

$$a_T = \begin{cases} a_{\text{upper}}, & \text{if } \Delta P_T > \sigma_{EWMA_T-1} \\ a_{\text{lower}}, & \text{if } \Delta P_T \leq \sigma_{EWMA_T-1} \end{cases}$$

6. Volatility may be calculated using other methods that, in accordance with the expert opinion of the Committee, allow for a reliable evaluation of the value of the specified parameter.

(This article was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025)

Chapter 5. DETERMINING INDICATIVE GG-SPREAD INDICATORS AND BUILDING YIELD CURVES FOR FOREIGN GS

Article 11. Building yield curves for foreign government securities

1. In order to determine the settlement indicative yield of foreign government securities for each par value currency (hereinafter – the indicative ZCYC of the par value currency), yield rates posted on the official website of the authorized agency of the state of the issuer of the foreign currency or in external information sources at the time of building the yield curves shall be used.
2. Building settlement indicative ZCYCs of the par value currency shall be carried out every business day no later than the start time of the second settlement and clearing session on the stock market, established subject to the internal document of the Clearing Centre "Regulations for execution of clearing activities on transactions with the central counterparty". Calculated indicative yields shall be valid until next recalculation.
3. In order to construct indicative ZCYCs of the par value currency, approximation method shall be used using the Nelson-Siegel parametric model, which is

compiled by interpolating the parameters of the yield values to fixed maturity dates.

4. The SPOT Nelson-Siegel function set out in item 3 of this article shall have the following form:

$$z(m,b)=\beta_0+(\beta_1+\beta_2)\frac{\tau}{m}\left[1-\exp\left(-\frac{m}{\tau}\right)\right]-\beta_2\exp\left(-\frac{m}{\tau}\right), \text{ where}$$

$z(m,b)$ – an indicative settlement rate of yield for each term to maturity in days;

$B_0, \beta_1, \beta_2, \tau$ – parameters of the Nelson-Siegel model.

5. Minimization of the sum of the root-mean-square error shall be carried out by the generalized reduced gradient method.

Chapter 6. DERIVATIVES MARKET

Article 12. Determination of settlement prices of derivative financial instruments

1. The settlement price of the derivative financial instrument at the end of the current clearing day shall be calculated based on data received from the stock and/or currency markets based on results of completion of trading sessions for the underlying asset of the derivative financial instrument and calculation of indices of the current trading day and/or based on data received from external information systems.
2. The settlement price of the derivative financial instrument, where its underlying asset is a share, for each maturity date of such derivative financial instrument at the end of the current clearing day shall be determined by the following algorithm:
 - 1) the settlement price of a share, where it is an underlying asset of the derivative financial instrument, is determined subject to the Methodology for Determination of Settlement prices of Securities;
 - 2) based on external information sources, information shall be collected about an upcoming payment of dividends on a share where it is an underlying asset of the derivative financial instrument, and a dividend value, as of the date of determination of the settlement price of the derivative financial instrument, shall be determined:

$$P_{divT} = Div \times \exp(Z(m,b,Curr) \times \frac{T_{fix-2}-T}{365});$$

- 3) net settlement price of the underlying asset shall be determined by the following formula:

$$P_{clearT} = \begin{cases} P_T, & \text{if } T_{expir} < T_{fix-2}; \\ P_T - P_{divT}, & \text{if } T_{expir} \geq T_{fix-2}. \end{cases}$$

- 4) given data obtained subject to sub-items 1)–3) of this item, the settlement price of the derivative financial instrument where its underlying asset is a share shall be determined for each maturity date of such derivative financial instrument as of the settlement date:

$$P_{futT} = P_{clearT} \times \exp(Z(m,b,Curr) \times \frac{T_{expir}-T}{365}).$$

3. The settlement price of the derivative financial instrument where its underlying asset is KASE index, for each maturity date of such derivative financial instrument at the end of the current clearing day shall be determined subject to the algorithm for calculation of KASE Index described in the internal document of the Exchange "Methodology for Calculation of Stock Market Indicators" (hereinafter – the Methodology for Calculation of Stock Market Indicators), along with that:

- settlement price of the derivative financial instrument where its underlying asset is a share of the i-th name (P_i) determined on date T subject to the algorithm described in item 2 of this article, shall be used as the closing price for shares of the i-th name (P_{futT}) used to calculate KASE Index;
 - closing price of shares of the i-th name (P_T) used to calculate KASE Index on the calculation date shall be the settlement price of the share of the i-th name (P_i).
4. The settlement price of the derivative financial instrument, where its underlying asset is the exchange rate of a foreign currency (Curr) to the tenge, for each maturity date of such derivative financial instrument as of the end of the current clearing day shall be determined by the formula:

$$P_{futT} = \text{CentralRateCurr} \times \exp(\text{SwapCurr}_{T/T_{\text{expir}}} \times \frac{T_{\text{expir}} - T}{365}).$$

5. The settlement price of the derivative financial instrument, where its underlying asset is a financial instrument that is not traded on the stock and/or currency market, for each maturity date of such derivative financial instrument as of the end of the current clearing day shall be determined by the following algorithm:

- 1) spread between the value of the underlying asset of SpotPrice and prices of derivative financial instruments for this underlying asset received from external information systems, closest in terms of maturity, shall be determined as a percentage as of the settlement date T_{expir} by the formula:

$$F_Spread = \begin{cases} \frac{\frac{\ln \frac{P_{futT_-}}{\text{SpotPrice}}}{T_-} - \frac{\ln \frac{P_{futT_+}}{\text{SpotPrice}}}{T_+}}{T_- - T_+} \times \frac{T_{\text{expir}} - T}{365} + \frac{\ln \frac{P_{futT_+}}{\text{SpotPrice}}}{T_+} - \frac{\frac{\ln \frac{P_{futT_-}}{\text{SpotPrice}}}{T_-} - \frac{\ln \frac{P_{futT_+}}{\text{SpotPrice}}}{T_+}}{T_- - T_+}, & \text{if } T_- < T_{\text{expir}} < T_+ \\ \frac{\ln \frac{P_{futTn}}{\text{SpotPrice}} \times 100}{Tn}, & \text{if } T_{\text{expir}} < T_- \text{ or } T_+ < T_{\text{expir}} \end{cases}.$$

- 2) taking into account the data obtained subject to sub-item 1) of this item, the settlement price of the derivative financial instrument, where its underlying asset is a financial instrument that is not traded on the stock and/or currency market, shall be determined for each maturity date of such derivative financial instrument as of the settlement date:

$$P_{futT} = \text{SpotPrice} \times \exp\left(\frac{F_Spread}{100} \times \frac{T_{\text{expir}} - T}{365}\right).$$

6. In order to determine boundaries of the evaluation range of market and interest risks, boundaries of the price corridor of the derivative financial instrument (NUM), the settlement price of the underlying asset of the derivative financial instrument (UA), reduced to the dimension of the settlement price of the derivative financial instrument calculated by the formula below is additionally used:

$$P_{\text{Norm } T}(\text{UA}, \text{Num}) = \max(\text{abs}(P_T(\text{UA})); \min P_T(\text{UA})) \times \frac{\text{MinSP}(\text{UA})}{\text{MinS}(\text{AU})} \times \frac{\text{MinS}(\text{UA}, \text{Num}) \times \text{Lot}(\text{UA}, \text{Num})}{\text{MinSP}(\text{UA}, \text{Num})}.$$

Article 13. Determination of limiting rates of market and interest risks for derivative financial instruments, concentration boundary of the derivative financial instrument

1. The minimum initial margin rate of a derivative financial instrument is determined on the basis of the minimum initial margin rate of the underlying asset of such derivative financial instrument on the stock and/or currency market (*this item was*

changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025)

2. In case of insufficient data or their non-representativeness when evaluating volatility of a maximum relative deviation of the price of the underlying asset of the derivative financial instrument, minimum initial margin rate of the derivative financial instrument shall be calculated subject to other methods which, subject to an expert opinion of the Committee, allow for a reliable evaluation of the value of the specified parameter.
3. The minimum concentration rate of a derivative financial instrument shall be calculated by the formula:

$$\text{ConcR}_{\min} = \text{MR}_{\min} \times \sqrt{\frac{T_{\text{Likv}}}{T_{\text{RH}}}}$$

4. Minimum rate of increase/decrease in interest risk of the derivative financial instrument shall be calculated on a daily basis.
5. Minimum rate of increase/decrease in interest risk of the derivative financial instrument for each key period shall be calculated by the formula:

$$\text{MinM_IR}_{T_k} = \alpha \times \sigma$$

6. Concentration boundary of the derivative financial instrument where its underlying asset is a share and/or the exchange rate of a foreign currency to the tenge shall be determined to be equal to the concentration boundary of the underlying asset.
7. Concentration boundary of the derivative financial instrument where its underlying asset is KASE Index shall be determined by the formula:

$$L_{\text{concKASE}} = \sum_{i=1}^n (L_{\text{conc}_i} * \bar{R}_i)$$

8. Calculation of the concentration boundary of a derivative financial instrument where its underlying asset is a financial instrument that is not traded on the stock and/or currency market shall be carried out by a subdivision responsible for liquidity management of the central counterparty.
9. The Committee shall have the right to decide to fix limiting rates of market and interest risks, limiting rates of market and interest risks that differ from values determined subject to this Methodology if there is information about a significant change in market conditions, increased market volatility or other market factors both during trading and before start of the trading.

Article 14. Determining the boundaries of the evaluation range of market and interest rate risks, the boundaries of the price corridor of a derivative financial instrument

1. When evaluating market risks on transactions to be closed in trading modes with partial collateral, depending on the concentration boundary, two levels of market risks evaluation range boundaries shall be determined.
2. The upper boundary of the market risk evaluation range of the first and/or second level of the derivative financial instrument (NUM) on an underlying asset (UA) shall be determined by the following formula:

$$\begin{aligned} \text{PH_1}(\text{UA}, \text{Num}) &= \text{CP}_{\text{fut}_T}(\text{UA}, \text{Num}) + \text{MR}_{\text{cur}}(\text{UA}) \times \text{abs}(\text{P}_{\text{Norm}_T}(\text{UA}, \text{Num})) \\ \text{PH_2}(\text{UA}, \text{Num}) &= \text{P}_{\text{fut}_T}(\text{UA}, \text{Num}) + \text{ConcR}_{\text{cur}}(\text{UA}) \times \text{abs}(\text{P}_{\text{Norm}_T}(\text{UA}, \text{Num})). \end{aligned}$$

3. The lower boundary of the market risk evaluation range of the first and/or second level of the derivative financial instrument (NUM) on the underlying asset (UA) shall be determined by the following formula:

$$\text{PL_1}(\text{UA}, \text{Num}) = \text{P}_{\text{fut}_T}(\text{UA}, \text{Num}) - \text{MR}_{\text{cur}}(\text{UA}) \times \text{abs}(\text{P}_{\text{Norm}_T}(\text{UA}, \text{Num}))$$

$$PL_2(UA, Num) = CP_{futT}(UA, Num) - ConcR_{cur}(UA) \times abs(P_{NormT}(UA, Num)).$$

4. The upper boundary of the evaluation range of the interest risk of the derivative financial instrument (NUM) on the underlying asset (UA) shall be determined by the following formula:

$$H_IR(UA, Num) = U_IR_{cur}(UA, Num).$$

5. The lower boundary of the evaluation range of the interest risk of the derivative financial instrument (NUM) on the underlying asset (UA) shall be determined by the following formula:

$$L_IR(UA, Num) = -D_IR_{cur}(UA, Num).$$

6. The upper boundary of the price corridor of the derivative financial instrument (NUM) on the underlying asset (UA) shall be determined by the following formula:

$$PcH_{fut}(UA, Num) = P_{futT}(UA, Num) + \frac{1}{2} \times F_R(UA, Num) \times RR(UA, Num).$$

7. The lower boundary of the price corridor of the derivative financial instrument (NUM) on the underlying asset (UA) shall be determined by the following formula:

$$PcL_{fut}(UA, Num) = P_{futT}(UA, Num) - \frac{1}{2} \times F_R(UA, Num) \times RR(UA, Num).$$

8. Boundaries of the range of risks of deviations from the risk calculation center for the upper and lower boundaries of the price corridor of the derivative financial instrument (NUM) for an underlying asset (UA) shall be determined by the formula:

$$RR(UA, Num) =$$

$$(RB(UA, Num)) \times \exp(U_IR_{cur}(UA, Num) \times T(Num) \times \text{sign}(RB(UA, Num))) -$$

$$(LB(UA, Num)) \times \exp(-D_IR_{cur}(UA, Num) \times T(Num) \times \text{sign}(LB(UA, Num))).$$

9. Deviation from the risk calculation center for the upper boundaries of the price corridor of the first and/or second level of the derivative financial instrument, determined by the formula:

$$RB_1(UA, Num) = CP_{futT}(UA, Num) + P_{NormT}(UA, Num) \times MR_{cur}(UA)$$

$$RB_2(UA, Num) = CP_{futT}(UA, Num) + P_{NormT}(UA, Num) \times ConcR_{cur}(UA).$$

10. Deviation from the risk calculation center for the lower boundaries of the price corridor of the first and/or second level of the derivative financial instrument, determined by the formula:

$$LB_1(UA, Num) = CP_{futT}(UA, Num) - P_{NormT}(UA, Num) \times MR_{cur}(UA)$$

$$LB_2(UA, Num) = CP_{futT}(UA, Num) - P_{NormT}(UA, Num) \times ConcR_{cur}(UA).$$

11. When a limitation sign of the price corridor boundary of the derivative financial instrument within positive values of NegativePrices(UA) = "N" is set for the underlying asset, the lower boundary of the price corridor of the derivative financial instrument (NUM) on the underlying asset (UA) shall be determined by the following formula:

$$PcL_{fut}(UA, Num) = \max(PcL_{fut}(UA, Num); MinS(UA, Num)).$$

12. In case of a restriction for which the lower boundary of the price corridor is equal to a minimum change in the price of the derivative financial instrument, further expansions and monitoring of the lower price boundary of this derivative financial instrument shall not be carried out.

13. Monitoring and shifts of the upper and lower price boundaries of other derivative financial instruments under this underlying asset shall be continued.

Article 15. Features of the price corridor, evaluation range of market risks and interest risks of derivative financial instruments

1. Shift of the upper/lower boundary of the market risk evaluation range for all derivative financial instruments (NUM) on the underlying asset (UA) shall be carried out with simultaneous compliance with the following terms and conditions:
 - availability in the trading system of the derivatives market continuously for a specified period of time FutMonTimeDay(UA) seconds from the moment of registration of an order to buy/sell this derivative financial instrument with a price that differs from the upper/lower boundary of the price corridor by no more than the threshold value $\text{FutMonRange}(\text{UA}) \times \text{FutMonRange}(\text{UA}) \times \frac{1}{2} \times \text{F}_R(\text{UA}, \text{Num}) \times \text{RR}(\text{UA}, \text{Num})$;
 - the number of completed shifts of the upper/lower boundaries of the market risk evaluation range is less than AutoShiftNumMR(UA);
 - the value of the BoundsWdn(UA) indicator for this underlying asset is set to "Y".
2. If conditions of item 1 of this article are met during a trading session period for this derivative financial instrument on the underlying asset (UA), the Exchange shall suspend trading for a period not exceeding 15 (fifteen) minutes for all derivative financial instruments with the same underlying asset (UA) traded based on the same specification of the derivative financial instrument.
3. When the price boundaries are shifted, current value of the market risk rates shall be recalculated by the following formula:

$$\text{MR}_{\text{cur}}(\text{UA})_{\text{new}} = \text{MR}_{\text{cur}}(\text{UA}) + 0.5 \times \text{FutShift}(\text{UA}) \times \text{Mrmin}(\text{UA}).$$

4. Risk calculation center shall be determined when shifting the upper boundary of the market risk evaluation range:

$$\text{CP}_{\text{fut}_T}(\text{UA}, \text{Num}, \text{new}) = \text{CP}_{\text{fut}_T}(\text{UA}, \text{Num}) + 0.5 \times \text{FutShift}(\text{UA}) \times \text{Mrmin}(\text{UA}) \times \text{P}_{\text{Norm}_T}(\text{UA}, \text{Num}).$$

5. Risk calculation center shall be determined when shifting the lower boundary of the market risk evaluation range:

$$\text{CP}_{\text{fut}_T}(\text{UA}, \text{Num}, \text{new}) = \text{CP}_{\text{fut}_T}(\text{UA}, \text{Num}) - 0.5 \times \text{FutShift}(\text{UA}) \times \text{Mrmin}(\text{UA}) \times \text{P}_{\text{Norm}_T}(\text{UA}, \text{Num}).$$

6. Given the recalculated risk calculation center of the derivative financial instrument (Num) on the underlying asset (UA), for each derivative financial instrument (Num) on the underlying asset (UA), boundary of the range of risks of deviations from the risk calculation center for the upper and lower boundaries of the price corridor of the derivative $\text{RR}(\text{UA}, \text{Num}, \text{new})$ shall be recalculated subject to the algorithm described in item 11 of article 16 of this Methodology.
7. The upper boundary of the price corridor of the derivative financial instrument (NUM) on the underlying asset (UA) shall be recalculated by the following formula:

$$\text{PcH}_{\text{fut}}(\text{UA}, \text{Num}, \text{new}) = \text{PcH}_{\text{fut}}(\text{UA}, \text{Num}) + (\text{RR}(\text{UA}, \text{Num}, \text{new}) - \text{RR}(\text{UA}, \text{Num})).$$

8. The lower boundary of the price corridor of the derivative financial instrument (NUM) for the underlying asset (UA) shall be recalculated by the following formula:

$$\text{PcH}_{\text{fut}}(\text{UA}, \text{Num}, \text{new}) = \text{PcH}_{\text{fut}}(\text{UA}, \text{Num}) - (\text{RR}(\text{UA}, \text{Num}, \text{new}) - \text{RR}(\text{UA}, \text{Num})).$$

9. When a limitation sign of the price corridor boundary of the derivative financial instrument within positive values of NegativePrices(UA) = "N" is set for the underlying asset, the lower boundary of the price corridor of the derivative financial instrument (NUM) on the underlying asset (UA) shall be determined by the following formula:

$$P_{CL_{fut}}(UA, Num, new) = \max(P_{CL_{fut}}(UA, Num, new); \text{MinS}(UA, Num)).$$

10. In case of a restriction for which the lower boundary of the price corridor is equal to a minimum change in the price of the derivative financial instrument, no further expansions and monitoring of the lower price boundary of this derivative financial instrument shall be performed.
11. Monitoring and shifts of the upper and lower price boundaries of other futures contracts on this underlying asset shall continue to be carried out.

Chapter 7. STOCK MARKET

Article 16. Determination of settlement prices of financial instruments of the stock market

1. Determination of settlement prices of securities shall be carried out subject to the Methodology for Determination of Settlement prices of Securities, with the following being taken as the settlement price:
 - 1) for shares, depositary receipts and securities of investment and unit funds, as well as for bonds traded in "dirty prices" – price expressed in Kazakh tenge;
 - 2) for bonds traded in "clean prices" – price as a percentage of the face value of the bond, given features provided for in item 4 of this article.
2. The settlement price of a financial instrument of the "repo basket" type (hereinafter – the Repo Basket) shall be set equal to 1 Kazakh tenge.
3. The settlement price of a general collateral certificate is equal to the par value of the general collateral certificate. The par value of one general collateral certificate is equal to 1 (one) unit of the currency in which the general collateral certificate is issued. Each issue of a general collateral certificate must be denominated in one currency (*this item was changed by a decision of the Management Board of the Clearing Centre dated May 21, 2026*).
4. For purposes of this Methodology, when determining the risk parameters of bonds, settlement price determined subject to the Methodology for Determination of Settlement prices of Securities, as a percentage of the par value, shall be converted into Kazakh tenge by the formula:

$$P_T = \frac{P_{stlmnt_T}}{100} \times \text{FaceVal}_{\text{Curr}} \times \text{RateBase}_{\text{Curr}} + \text{ACI}_{T+1} \times \text{RateNB}_{\text{Curr}_T}.$$

If a bond is denominated in a currency for which the base rate is not calculated subject to this Methodology, then face value of the bond shall be converted into Kazakh tenge at the official rate of the National Bank of the Republic of Kazakhstan set for the specified foreign currency as of the trading day following the day of determination of the settlement price of the bond.

5. Values of settlement prices of shares shall be rounded to the position:
$$\text{Rank} = \text{ceiling}(\log_{10}(\text{LotSize})) + 2.$$
6. Rounding of values of settlement prices of bonds, as well as accrued coupon income on bonds, shall be carried out to the position:
$$\text{Rank} = \max \{ \text{ceiling}[\log_{10}(\text{LotSize})] + 2; 6 - \text{ceiling}[\log_{10}(\text{FaceVal}_{\text{Curr}})] \}.$$
7. In order to determine the settlement price of a bond of a certain name, which subject to the Methodology for Evaluation of Securities is determined based on use of the Z-spread determined for the group of bonds to which such bond belongs, compositions of the Bond Groups shall be formed.
8. The Composition of the Bond Groups shall be determined taking into account the par value currency and the issuer of the bond.

9. Inclusion of a bond of a particular name in a certain Bond Group shall be carried out subject to the following principles:
 - 1) bonds of one issuer denominated in one currency shall be included in one Bond Group;
 - 2) bonds of different issuers can be included in one Bond Group if such bonds are in one group of securities and distributed into groups based on evaluation of the risk level of the issuer of the security subject to the internal document of the Clearing Centre "Methodology for Evaluation of Risk Level of Issuers of Securities" (hereinafter – the Issuer Evaluation Methodology).
10. When including bonds of different issuers in one Bond Group, frequency of revision of Bond Groups shall correspond to frequency of redistribution of securities into groups based on evaluation of the risk level of the issuer of the security subject to the Issuer Evaluation Methodology.
11. In case of admission to trading of a bond of a new name issued by an issuer bonds of which are already included in a certain Bond Group/Groups given the denomination currency, such bond shall be included in the Bond Group that contains the bonds of this issuer with the corresponding denomination currency.
12. In case of redemption of a bond of a particular name or in case of exclusion of a bond of a particular name from lists of securities admitted to circulation on the Exchange, the said bond shall be excluded from the certain Bond Group.

Article 17. Basic principles for determination of market and interest risks

1. The initial margin rate and the concentration rate of a security shall be determined to evaluate the market risk associated with the risk of changes in the price of the security. The initial margin rate for security shall be determined to evaluate the market risk of a net position in this security below value of the concentration boundary set for this security. It shall be assumed that forced liquidation of the size of the net position below value of the concentration boundary set for the security can be liquidated in a short period of time T_{RH} (the risk evaluation horizon determined by the value of the fundamental parameter set by the Committee) without a significant impact on the price of this security.

Concentration rate for a security shall be determined to evaluate the market risk of the net position in this security above value of the concentration boundary set for this security. It shall be assumed that forced liquidation of the net position size above the concentration boundary set for the security can be liquidated over a longer period T_{Likv} (risk evaluation horizon determined by the value of the fundamental parameter set by the Committee) without a significant impact on the price of this security.

Interest risk rate of a security shall be determined to evaluate the interest risk associated with the risk of changes in repo rates for this security and shall be applied to net positions in a security with future settlement dates.

2. For each security included in the T+ List, the initial margin rate, concentration rate, and interest risk rate shall be calculated.

The amount of requirements for collateral for discharge of obligations on transactions/orders with such securities to be closed/submitted in modes with the central counterparty on conditions of partial collateral shall be determined given the specified rates, as well as other risk parameters determined subject to this Methodology.

3. For each security of the T+ List, limiting rates of the market risk shall be established: minimum and maximum initial margin rates and concentration rates, as well as limiting rates of the interest risk: minimum interest risk rates (interest risk fall rate and interest risk growth rate), risk parameters subject to approval which are established on a periodic basis by the Committee.

4. When calculating risk parameters of the stock market (except for settlement prices of securities and settlement rates of repo transactions), the algorithms and parameters:
 - 1) described for shares, shall also apply to depositary receipts and securities of investment and mutual funds, as well as to debt securities traded at "dirty prices";
 - 2) described for bonds, shall apply to debt securities traded at "clean prices" (unless otherwise specified).
5. The size of requirements for discharge of obligations under transactions/orders with securities to be closed/ submitted in the modes with the central counterparty on conditions of full coverage shall be calculated subject to the Clearing Rules.
6. For each security not included in the T+ List, maximum and minimum initial margin rates and the concentration rate shall be set at 100%.
7. For general collateral certificates, maximum and minimum initial margin rates and concentration rate shall be set equal to zero.
8. On dates falling between key terms, the interest risk rates shall be determined by the linear interpolation method (the interpolation uses values expressed as a percentage per annum).
9. On dates falling after the maximum key term, interest risk rates shall be equal to the interest risk rates of a maximum key term.
10. Market and interest risk rates, limiting rates of market and interest risks shall be applied to transactions with securities for which the Clearing Centre acts as the central counterparty.
11. When monitoring sufficiency of partial collateral for net obligations arising from submission of orders or conclusion of transactions under repo transactions with the central counterparty with a virtual financial instrument of the Repo Basket, the following risk parameters shall be applied:
 - 1) when submitting an order with the direction "Fund raising", the risk parameters of the security selected as the subject of the repo transaction and calculated subject to this Methodology shall be used;
 - 2) when submitting an order with the direction "Placement of money", risk parameters of the Repo Basket calculated subject to this Methodology shall be used;
 - 3) when recording a transaction, risk parameters of the security that is the subject of the repo transaction shall be used.
12. The Committee shall have the right to make a decision to establish limiting rates for market and interest risks that differ from values determined subject to this Methodology if there is information about a significant change in a market price situation, increased market volatility, received negative information about issuers of securities or other market factors both during and before start of the trading.

Article 18. Determination of limiting rates for market and interest rate risks

1. To calculate the minimum initial margin rate (MR_{min}) for each financial instrument, the values ΔP_T ; $Stddev$; $EWMA$ are calculated using the formulas specified in items 2, 3, 4 and 5 of Article 10 of this Methodology.
2. Financial instruments are divided into the following groups:
 - 1) debt securities;
 - 2) other financial instruments, with the exception of debt securities (hereinafter – other financial instruments).

3. The groups of financial instruments specified in item 2 of this article are formed into the following subgroups:
 - 1) the group of financial instruments "debt securities" is formed into subgroups:
 - sector of the Exchange's official list – government securities, issue currency – tenge, the issuers of which are the Ministry of Finance of the Republic of Kazakhstan and/or the National Bank of the Republic of Kazakhstan (hereinafter – government securities in tenge);
 - official list sector – government securities, the issue currency of which is different from tenge, the issuers of which are the Ministry of Finance of the Republic of Kazakhstan and/or the National Bank of the Republic of Kazakhstan (hereinafter – other government securities);
 - other debt securities;
 - 2) the group of financial instruments "other financial instruments", with the exception of debt securities specified in subitem 1) of this item (hereinafter – other financial instruments), is formed into subgroups:
 - financial instruments included in the sector of the Exchange's official list – KASE Global (hereinafter – financial instruments of KASE Global);
 - financial instruments that are not included in the sector of the Exchange's official list – KASE Global (hereinafter – financial instruments not included in KASE Global).
4. Each subgroup of financial instruments specified in item 3 of this article shall be grouped according to the parameters specified in this item:
 - 1) the subgroup "Government securities in tenge" is grouped according to the following parameters:
 - coupon rate indexation method;
 - type of coupon rate;
 - type of bonds by indexation possibility;
 - type of bond by interest payment;
 - by maturity ranges;
 - 2) the subgroup "other government securities" is grouped according to the following parameters:
 - coupon rate indexation method;
 - type of coupon rate;
 - issue currency;
 - by the credit rating of the issuer of the debt security, assigned by the rating agency Standard & Poor's or Moody's Investors Service or Fitch;
 - type of bonds by indexation possibility;
 - type of bonds by interest payment;
 - by maturity ranges;
 - 3) the subgroup "other debt securities" is grouped according to the following parameters:
 - official list's sector;
 - coupon rate indexation method;
 - type of bonds by indexation possibility;
 - type of coupon rate;

- type of bonds by interest payment
 - issue currency;
 - by the credit rating of the issuer of the debt security, assigned by the rating agency Standard & Poor's or Moody's Investors Service or Fitch (hereinafter – the credit rating);
 - by maturity ranges;
- 4) the subgroup "KASE Global financial instruments" is grouped according to the following parameters:
- issue currency;
 - according to key areas of the company's activities, developed by MSCI and S&P Dow Jones Indices;
 - ETF, the underlying asset of which is: government securities of foreign countries;
 - ETF, the financial instruments of which are backed by precious metals;
 - ETF, the underlying asset of which is crypto assets;
 - index fund;
- 5) the subgroup "financial instruments not included in KASE Global" is grouped according to the following parameters:
- type of financial instrument: ETF, depositary receipts, shares;
 - the Exchange's market in accordance with the Exchange's official list;
 - quotation currency;
 - type of share: common or preferred;
 - the category of the Exchange's market in accordance with the Exchange's official list.

The following maturity ranges apply:

- from 0 to 360 days to maturity;
 - from 361 to 1,080 days to maturity;
 - from 1,081 to 2,160 days to maturity;
 - from 2,161 days to maturity and more.
5. In each subgroup (*i*) of financial instruments, taking into account the obtained values ΔP_T ; $Stddev$; $EWMA$ for each financial instrument ($j, \dots, n$), the maximum values $\Delta P_{T_{group}}$; $Stddev_{group}$; $EWMA_{group}$ are determined using the formulas:

$$\Delta P_{T_{group \max}} = \max (\Delta P_{T_{i,j}}, \dots, \Delta P_{T_{i,n}})$$

$$Stddev_{group \max} = \max (Stddev_{group_{i,j}}, \dots, Stddev_{group_{i,n}})$$

$$EWMA_{group \max} = \max (EWMA_{group_{i,j}}, \dots, EWMA_{group_{i,n}})$$

6. In each subgroup of financial instruments of the "debt securities" group, the values $\Delta P_{T_{group \max}}$; $Stddev_{group \max}$; $EWMA_{group \max}$ are ranked according to maturity ranges and credit ratings.

If, based on the ranking results, the values $\Delta P_{T_{group \max}}$; $Stddev_{group \max}$; $EWMA_{group \max}$ of a particular maturity range with a lower credit rating are lower than the values with a higher credit rating, then such values are assigned values equal to their maximum values with a higher credit rating.

7. The values $\Delta P_{T_{group\ max}}; Stddev_{group\ max}; EWMA_{group\ max}$ for all subgroups of financial instruments of the "debt securities" group, with the exception of debt securities denominated in a currency other than the national currency or having a credit rating higher than the credit rating of the Republic of Kazakhstan, are subject to addition to the values $\Delta P_{T_{group\ max}}; Stddev_{group\ max}; EWMA_{group\ max}$ for non-indexed government securities of the Republic of Kazakhstan and are determined as the following values: $\Delta P_{T_{group\ new}}; Stddev_{group\ new}; EWMA_{group\ new}$.
8. For financial instruments of the "debt securities" group, the coupon indexation of which is carried out taking into account the TONIA indicator, the values $\Delta P_{T_{group\ TONIA}}; Stddev_{group\ TONIA}; EWMA_{group\ TONIA}$ are determined by adding the indicator MR_{TONIA} , determined in accordance with this item, to the values $\Delta P_{T_{group\ max}}; Stddev_{group\ max}; EWMA_{group\ max}$ in the context of maturity ranges:

$$MR_{TONIA} = \max(\Delta P_{T_{t-1}}, \dots, \Delta P_{T_{t-365}}); \max(Stddev_{t-1}, \dots, Stddev_{t-365}); \max(EWMA_{t-1}, \dots, EWMA_{t-365})$$

9. The values $\Delta P_{T_{group\ max}}, \Delta P_{T_{group\ TONIA}}, \Delta P_{T_{group\ new}}$ apply to each financial instrument and are the value MR_{min} for the relevant financial instrument:
 - $\Delta P_{T_{group\ max}}$ – for the group "other financial instruments";
 - $\Delta P_{T_{group\ TONIA}}$ – for the group "debt securities" to financial instruments indexed by the level of the TONIA indicator;
 - $\Delta P_{T_{group\ new}}$ – for the group "debt securities", with the exception of debt securities denominated in a currency other than the national currency, or having a credit rating higher than the credit rating of the Republic of Kazakhstan.

In this case, for financial instruments included in the representative list of the KASE Index, the value MR_{min} is taken to be equal to the value, determined for the subgroup of financial instruments corresponding to the following parameters:

- by quotation currency – tenge;
- by type – common share;
- by the Exchange's market in accordance with the Exchange's official list "main";
- by the Exchange's market category in accordance with the Exchange's official list of "premium".

If the calculated values $\Delta P_{T_{group\ max}}, \Delta P_{T_{group\ TONIA}}, \Delta P_{T_{group\ new}}$ do not correspond to the current market conditions, the Committee for determining the initial margin rates may select the values $Stddev_{group\ max}, Stddev_{group\ TONIA}, Stddev_{group\ new}$ or $EWMA_{group\ new}, EWMA_{group\ TONIA}, EWMA_{group\ max}$, for their application to financial instruments in the order specified in this item for the values $\Delta P_{T_{group\ max}}, \Delta P_{T_{group\ TONIA}}, \Delta P_{T_{group\ new}}$.

10. The minimum concentration rate of a security is calculated using the formula:

$$ConcR_{min} = MR_{min} \times \sqrt{\frac{T_{Likv}}{T_{RH}}}$$

11. The minimum rate of increase/decrease in the interest rate risk of a security for each key period is determined as the solution to the following equality:

$$MinM_IR_{Tk} = MinSec_IR_{Tk} = MR_{min}$$

(This article was amended by a decision of the Management Board of the Clearing Centre dated August 28, 2025)

Article 19. Determining the upper and lower boundaries of the market risk evaluation range

1. The upper boundary of the market risk evaluation range of a security (with a first-level risk evaluation horizon) and with a net position size not exceeding the established concentration boundary is determined by the formula:

$$PH_1_T = P_T \times (1 + MR_T)$$

(this item was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025).

2. The upper boundary of the market risk evaluation range of a security (with a second-level risk evaluation horizon) and with the size of the net position exceeding the established concentration boundary is determined by the formula:

$$PH_2_T = P_T \times (1 + ConcR_T).$$

(this item was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025).

3. The lower boundary of the market risk evaluation range of a security (with a first-level risk evaluation horizon) and with a net position size not exceeding the established concentration boundary is determined by the formula:

$$PL_1_T = P_T \times (1 - MR_T).$$

(this item was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025).

4. The lower boundary of the market risk evaluation range of a security (with a second-level risk evaluation horizon) and with the size of the net position exceeding the established concentration boundary is determined by the formula:

$$PL_2_T = P_T \times (1 - ConcR_T).$$

(this item was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025).

5. Rounding of the values of the risk evaluation range boundaries and repo baskets is carried out:

- 1) for shares up to the categoryRank = ceiling(log₁₀(LotSize)) + 2

- 2) for bonds and repo baskets up to the category:

$$Rank = \max \{ \text{ceiling}[\log_{10}(\text{LotSize})] + 2 ; 6 - \text{ceiling}[\log_{10}(\text{FaceVal}_T)] \}.$$

6. The upper and lower limits of the market risk assessment range for general collateral certificates shall be set equal to 1 (one) unit of the currency in which the general collateral certificate is issued. Each issue of a general collateral certificate shall be denominated in one currency *(this item was changed by a decision of the Management Board of the Clearing Centre dated May 21, 2026).*

Article 20. Determination of the upper and lower boundaries of the price corridor for securities

1. When prices of orders to close transactions approach the boundaries of the price corridor, a procedure for shifting the boundaries of the evaluation range of market risks of a security shall be carried out.
2. The upper boundary of the price corridor for a security on the trading day (T) shall be determined by the following formula:

$$PcH_{T/Tk} = \begin{cases} \text{shares} \begin{cases} P_T \times (1 + PcH_max), \text{ if } M = \text{False}; \\ \min \left[\frac{P_T \times \left(1 + \frac{MR_T}{x_pr}\right) \times \left(1 + RRcH_{T/Tk} \times \frac{k}{365 \times 100}\right)}{P_T \times (1 + PcH_max)} \right], \text{ if } M = \text{True}; \end{cases} \\ \text{bonds} \begin{cases} \frac{P_T \times (1 + PcH_max)}{FaceVal_T} \times 100, \text{ if } M = \text{False}; \\ \min \left[\frac{\frac{P_T \times \left(1 + \frac{MR_T}{x_pr}\right) \times \left(1 + RRcH_{T/Tk} \times \frac{k}{365 \times 100}\right) - Carry_T - ACI_T}{FaceVal_T} \times 100}{\frac{P_T \times (1 + PcH_max)}{FaceVal_T} \times 100} \right], \text{ if } M = \text{True} \end{cases} \end{cases}$$

3. The lower boundary of the price corridor of a security on the trading day (T) shall be determined by the following formula:

$$PcL_{T/Tk} = \begin{cases} \text{shares} \begin{cases} P_T \times (1 - PcL_max), \text{ if } M = \text{False}; \\ \min \left[\frac{P_T \times \left(1 + \frac{MR_T}{x_pr}\right) \times \left(1 + RRcL_{T/Tk} \times \frac{k}{365 \times 100}\right)}{P_T \times (1 - PcL_max)} \right], \text{ if } M = \text{True}; \end{cases} \\ \text{bonds} \begin{cases} \frac{P_T \times (1 - PcL_max)}{FaceVal_T} \times 100, \text{ if } M = \text{False}; \\ \min \left[\frac{\frac{P_T \times \left(1 + \frac{MR_T}{x_pr}\right) \times \left(1 + RRcL_{T/Tk} \times \frac{k}{365 \times 100}\right) - Carry_T - ACI_T}{FaceVal_T} \times 100}{\frac{P_T \times (1 - PcL_max)}{FaceVal_T} \times 100} \right], \text{ if } M = \text{True} \end{cases} \end{cases}$$

4. Present value of the cash flow of a bond on a security shall be determined in the par value currency and shall be calculated by the following formula:

$$Carry_T = \sum_{Ti=T_0+1}^{Tk} CashFlow_T \times \left(1 + RepoR_{Yk} \times \frac{Tk - Ti}{365 \times 100}\right).$$

5. For transactions with shares with settlements in foreign currency, values of the price corridor boundaries calculated in tenge shall be converted into foreign currency by dividing by the base exchange rate of the foreign currency determined subject to article 37 of this Methodology.
6. The upper and lower boundaries of the price corridor for general collateral certificates shall not be determined or established.
7. If necessary, including in the presence of information about a significant change in market conditions, prices, or an increase in market volatility, the Clearing Centre can decide to establish one or more boundaries of the price corridor that differ from those calculated both during trading and before start of the trading.

Article 21. Parameters of repo transactions

- Under repo transactions with the central counterparty carried out in a "direct" or "automatic" manner, the discount shall be set equal to zero.
- For repo transactions, the opening price shall be determined equal to the settlement price of the security that is the subject of such repo transaction, determined subject to the Methodology for Determination of Settlement prices of Securities.
- Settlement price of a security where it is a subject of a repo transaction with an opening date (Tk) (later than the trading day (T) on which parameters of the repo transaction are calculated) shall be determined by the formula:

$$P_{Tk} = P_T - (FaceVal_{Tk} - FaceVal_T) - (ACI_{Tk} - ACI_T).$$

Article 22. Determination of the settlement repo rate

1. In order to establish values of the boundaries of the price corridor of repo rates and the evaluation range of the interest risk under a security, calculation repo rate for the given security shall be determined.
2. In order to determine the settlement repo rates under repo transactions carried out in an "automatic" manner in foreign currency, the settlement repo rate shall be converted to the national currency using the base exchange rate of the foreign currency determined subject to article 35 of this Methodology and the settlement prices of swap transactions with foreign currencies determined subject to article 36 of this Methodology.
3. In case of "automatic" repo transactions with the central counterparty with a security being carried out during a trading day, the settlement repo rate for the security with the settlement date (T_i) shall be determined by the formula:

$$\text{RepoR}_{T_i} = \min(\text{WRepoR}_{T_i}; \text{RepoInd}_{T_i}; \text{RepoCls}_{T_i}).$$

4. In the absence of automatic repo transactions with a security with the central counterparty during a trading day, the repo settlement rate with the settlement date (T_i) shall be determined by the formula:

$$\text{RepoR}_{T_i} = \begin{cases} \text{RepoInd}_{T_i}, & \text{for repo transactions in tenge} \\ \frac{1 + \text{RepoInd}_{T_i}}{1 + \frac{365 \times \text{SwapCurr}_{T_i}}{(T_i - T) \times \text{RateBase}_{\text{Curr}}}}, & \text{for repo transactions in foreign currency} \end{cases}$$

5. An average weighted repo rate aggregated by all currencies with a security with the settlement date (T_i) on the trading day (T) shall be determined by the following formula:

$$\text{WRepoR}_{T_i} = \frac{\sum_{\text{Curr, KZT}} \text{WRepoR}_{T_i(\text{Curr, KZT})} \times V_{T(\text{Curr, KZT})}}{\sum_{\text{Curr, KZT}} V_{T(\text{Curr, KZT})}}$$

6. An average weighted repo rate in foreign currency, quoted in tenge, with the settlement date (T_i) on a trading date (T) shall be determined by the following formula:

$$\text{WRepoR}_{T_i(\text{Curr, KZT})} = \left(1 + \frac{\sum_j \text{RepoR}_{T_i(\text{Curr})}^j \times V_{j(\text{Curr})}}{\sum_j V_{j(\text{Curr})}} \right) \times \left(1 + \frac{365 \times \text{SwapCurr}_{T_i}}{\text{RateBase}_{\text{Curr}}} \right) - 1$$

7. If necessary, the Committee can decide to change values of the settlement repo rate with a security.
8. For periods between key periods, settlement repo rates shall be determined by the linear interpolation method.
9. For periods longer than the maximum key period, settlement repo rates shall be set equal to the rate of the last key period.

(This article was amended by the decision of the Board of the Clearing Center dated February 19, 2026)

Article 23. Calculation of indicative repo rates

1. The calculation of indicative repo rates is carried out daily based on the results of trading in repo transactions with the central counterparty, including repo transactions with general collateral certificates, in the settlement currency of the relevant repo transaction.
2. Indicative repo rates are determined on the basis of a sample of transactions concluded on a trading day (T), conducted using the continuous counter auction method with the participation of the central counterparty, the settlement date of the opening transaction for which coincides with the day of calculation of the indicative repo rate, taking into account the features established in item 3 of this article.
3. When calculating indicative repo rates, repo transactions concluded in the "Automatic repo with the CCP with a basket with the NBRK" mode, as well as repo

transactions in currencies other than the Kazakh tenge, for which the yield is below the established parameter values, are excluded from the sample for calculating indicative repo rates $R_{EUR}, R_{RUB}, R_{USD}$.

4. Calculation of indicative repo rates with the settlement date (T_i) is carried out in accordance with the following algorithm:
 - 1) repo transactions are grouped by the following types of financial instruments:
 - debt;
 - equity;
 - general collateral certificates (GCC);
 - 2) for each type of financial instrument specified in subitem 1) of this item, repo transactions for each of the settlement currencies are formed into subgroups according to key settlement dates: $T_0+1, T_0+2, T_0+3, T_0+7, T_0+14, T_0+30, T_0+90$;
 - 3) for each subgroup of repo transactions formed in accordance with subitem 2) of this item, the total volume of transactions is determined;
 - 4) if the total volume of any subgroup of repo transactions, determined in accordance with subitem 3) of this item, is less than 10% of the total volume of transactions for all subgroups, such subgroup is excluded from further calculation;
 - 5) for each subgroup of repo transactions not excluded in accordance with subitem 4) of this item, the average yield weighted by volume of transactions is calculated, which is recognized as the indicative repo rate;
 - 6) on key settlement dates (T_i), for which indicative repo rates were not calculated as a result of applying the conditions provided for in subitem 4) of this item, as well as in the absence of repo transactions on the relevant key settlement date (T_i), the indicative repo rates are determined by the piecewise linear interpolation method using the indicative repo rates calculated in accordance with subitem 5) of this item;
 - 7) if the value of the indicative repo rate, determined by the piecewise linear interpolation method, is less than the value of the indicative repo rate calculated without using the specified method for the longest key settlement date (T_i), such value of the indicative repo rate is equal to the value of the indicative repo rate calculated for the specified longest key settlement date (T_i);
 - 8) if, in accordance with the algorithm established by this item, only one value of the indicative repo rate is calculated, the values of the indicative repo rates for the remaining key settlement dates (T_i) are taken to be equal to the specified value;
 - 9) in the absence of calculated values of indicative repo rates in accordance with the algorithm established by this item, the indicative repo rates for key settlement dates (T_i) are taken to be equal to the parameters $R_{EUR}, R_{RUB}, R_{USD}, R_{KZT}$ depending on the currency of the concluded transactions.

Article 24. Calculation of interest risk rates of a security

1. Growth rate and fall rate of the interest risk of a security shall be calculated for a specific settlement date (T_k) each trading day (T) during calculation of risk parameters.
2. Growth rate of the interest risk of a security shall be determined by the formula:

$$H_{IR_{T_k}} = \begin{cases} \text{ceiling} \left(\frac{\max(IR_{P_{T_k}} + RR_{I_{T_k}}; \text{MinM}_{IR_{T_k}})}{h_{IR}} \right) \times h_{IR}, & \text{if } M = \text{True} \\ \text{ceiling} \left(\frac{\text{MinM}_{IR_{T_k}}}{h_{IR}} \right) \times h_{IR}, & \text{if } M = \text{False} \end{cases}$$
3. Fall rate of the interest risk of a security shall be determined by the formula:

$$L_IR_{Tk} = \begin{cases} \text{ceiling} \left(\frac{\max(IR_p_{Tk} + RR_{I_fi}; RepoInd_{Tk} - RepoR_{Tk} + MinSEC_IR_{Tk})}{h_IR} \right) \times h_IR, & \text{if } M = \text{True} \\ \text{ceiling} \left(\frac{RepoInd_{Tk} - RepoR_{Tk} + MinSEC_IR_{Tk}}{h_IR} \right) \times h_IR, & \text{if } M = \text{False} \end{cases}$$

4. Preliminary value of the interest risk of a security shall be determined for a certain settlement date (Tk) subject to the following algorithm:

$$IR_p_{Tk} = \begin{cases} \text{ceiling} \left(\frac{\alpha^* \sigma_T^{Tk}}{h_IR} \right) \times h_IR, & \text{if } \text{ceiling} \left(\frac{\alpha^* \sigma_T^{Tk}}{h_IR} \right) \times h_IR \geq IR_p_{T-1}^{Tk} + h_IR \\ IR_p_{T-1}^{Tk} - h_IR, & \text{if } \text{ceiling} \left(\frac{\alpha^* \sigma_T^{Tk}}{h_IR} \right) \times h_IR \leq (IR_p_{T-1}^{Tk} - h_IR) \text{ and } T_{Ch} \geq n_IR \\ IR_p_{T-1}^{Tk}, & \text{in any other case} \end{cases}$$

Article 25. Calculation of interest risk rates on Repo Baskets

1. For each Repo Basket, growth rate and fall rate of the interest risk shall be determined separately.
2. Interest risk rates of the Repo Basket shall be calculated for each settlement date (Ti) on each trading date (T) during calculation of risk parameters.
3. Growth rate of the interest risk of the Repo Basket for each settlement date (Tk) shall be determined by the formula:

$$H_IR_Bskt_{Tk} = \max_j \left(\frac{RRH_{Tk}^j - \frac{P_T^j \times RepoInd_{Tk} \times (Tk - T)}{36500} + ACI_{Tk}^j - ACI_T^j}{P_T^j} \right) \times \frac{36500}{(Tk - T)}$$

4. Fall rate of the interest risk of the Repo Basket for each settlement date (Tk) shall be determined by the formula:

$$L_IR_Bskt_{Tk} = \max_j \left(\frac{\frac{P_T^j \times RepoInd_{Tk} \times (Tk - T)}{36500} - RRL_{Ti}^j}{P_T^j} \right) \times \frac{36500}{(Tk - T)}$$

Article 26. Determination of the upper and lower boundaries of the range of evaluation of interest risks of a security

1. The upper boundary of the evaluation range of the interest risk of a security for the settlement date Tk on the trading day (T) shall be determined by the following formula:

$$RRH_{Tk} = (RepoR_{Tk} + H_IR_{Tk}) \times \frac{Tk - T}{365 \times 100} \times P_T.$$

2. The lower boundary of the evaluation range of the interest risk of a security for the settlement date Tk shall be determined by the following formula:

$$RRL_{Tk} = (RepoR_{Tk} - L_IR_{Tk}) \times \frac{Tk - T}{365 \times 100} \times P_T.$$

3. The upper boundary of the evaluation range of the interest risk of the Repo Basket for the settlement date Tk shall be determined by the following formula:

$$RRH_Bskt_{Tk} = (RepoInd_{Tk} + H_IR_Bskt_{Tk}) \times \frac{Tk - T}{365 \times 100} \times P_T.$$

4. The lower boundary of the evaluation range of the interest risk of the Repo Basket for the settlement date Tk shall be determined by the following formula:

$$RRL_Bskt_{Tk} = (RepoInd_{Tk} + L_IR_Bskt_{Tk}) \times \frac{Tk - T}{365 \times 100} \times P_T.$$

5. Boundary values of evaluation range of the interest risk shall be rounded:

- 1) on shares to the position Rank = ceiling(log₁₀ LotSize) + 2;
 - 2) on bonds and Repo Baskets to the position:
- $$\text{Rank} = \max \{ \text{ceiling}[\log_{10}(\text{LotSize})] + 2; 6 - \text{ceiling}[\log_{10}(\text{FaceVal}_T)] \}.$$

Article 27. Determination of the upper and lower boundaries of the repo rate corridor

1. Repo rate corridor shall be established for each security or Repo Basket, for each settlement currency, for each key term in the partial collateral trading mode.
2. The upper boundary of the repo rate corridor with a security for settlement dates Tk/Ti in the settlement currency shall be determined by the formula:

$$\text{RRcH}_{\text{Tk/Ti}}^{\text{Curr}} = \left(\frac{365 \times 100 + \text{RepoR}_{\text{Ti(KZT)}} \times (\text{Ti} - \text{T}) - \text{RepoR}_{\text{Tk(KZT)}} \times (\text{Tk} - \text{T})}{365 \times 100 + \text{SwapCurr}_{\text{Ti}} \times (\text{Ti} - \text{T}) - \text{SwapCurr}_{\text{Tk}} \times (\text{Tk} - \text{T})} - 1 \right) \times \frac{365 \times 100}{\text{Ti} - \text{Tk}} + \frac{\text{H_IR}_{\text{Ti}}}{\text{x_IR}}.$$

3. The upper boundary of the repo rate corridor with Repo Basket for settlement dates Tk/Ti with settlement in Kazakh tenge shall be determined by the formula:

$$\text{RRcH_Bskt}_{\text{Tk/Ti}} = \left(\frac{365 \times 100 + \text{RepoInd}_{\text{Ti}} \times (\text{Ti} - \text{T}) - \text{RepoInd}_{\text{Tk}} \times (\text{Tk} - \text{T})}{365 \times 100} - 1 \right) \times \frac{365 \times 100}{\text{Ti} - \text{Tk}} + \frac{\text{H_IR_Bskt}_{\text{Ti}}}{\text{x_IR_Bskt}}.$$

4. The lower boundary of the repo rate corridor with a security for settlement dates Tk/Ti in the settlement currency shall be determined by the formula:

$$\text{RRcL}_{\text{Tk/Ti}}^{\text{Curr}} = \left(\frac{365 \times 100 + \text{RepoR}_{\text{Ti(KZT)}} \times (\text{Ti} - \text{T}) - \text{RepoR}_{\text{Tk(KZT)}} \times (\text{Tk} - \text{T})}{365 \times 100 + \text{SwapCurr}_{\text{Ti}} \times (\text{Ti} - \text{T}) - \text{SwapCurr}_{\text{Tk}} \times (\text{Tk} - \text{T})} - 1 \right) \times \frac{365 \times 100}{\text{Ti} - \text{Tk}} - \frac{\text{L_IR}_{\text{Ti}}}{\text{x_IR}}.$$

5. The lower boundary of the repo rate corridor of the Repo Basket for settlement dates Tk/Ti shall be determined by the formula:

$$\text{RRcL_Bskt}_{\text{Tk/Ti}} = \left(\frac{365 \times 100 + \text{RepoInd}_{\text{Ti}} \times (\text{Ti} - \text{T}) - \text{RepoInd}_{\text{Tk}} \times (\text{Tk} - \text{T})}{365 \times 100} - 1 \right) \times \frac{365 \times 100}{\text{Ti} - \text{Tk}} - \frac{\text{L_IR_Bskt}_{\text{Ti}}}{\text{x_IR_Bskt}}.$$

6. Final value of the upper boundary of the repo rate corridor with a security and Repo Basket for overnight shall be determined given the following terms and conditions:

$$\begin{cases} \text{RRcH}_{\text{T0/T1}} = \min(\text{RRcH}_{\text{T0/T1}}^{\text{KZT}}; \text{SD_fm}_{\text{KZT}}) \\ \text{RRcH_Bskt}_{\text{T0/T1}} = \min(\text{RRcH_Bskt}_{\text{T0/T1}}; \text{SD_fm}_{\text{KZT}}), \text{ where} \\ \text{RRcL}_{\text{T0/T1}} = \min(\text{RRcL}_{\text{T0/T1}}^{\text{KZT}}; \text{SDL}_{\text{sec}}) \end{cases}$$

7. On the day of determination of the list of persons entitled to receive dividends on shares, which is a trading day or the last trading day preceding the day of determination of the list of persons entitled to receive dividends if the date of determination of the list falls on a non-trading day, and the trading day preceding it, instead of the value of the parameter SDL_{sec} the value $\text{SDL}_{\text{div}_{\text{sec}}}$ shall be used which is established based on the amount of dividends, subject to article 35 of this Methodology.

Article 28. Specifics of shifting the boundaries of the price corridor and the boundaries of the repo rate corridor

1. A signal about the need to shift the boundaries of the price corridors to control prices of orders to close transactions to buy/sell a security shall be one of the following events:
 - 1) for any term k, prices of the best systemic buy orders in the order queue approached the upper boundary of the price corridor by an amount less than the value $w \times (\text{PcH}_{\text{T-1/Tk}} - \text{PcL}_{\text{T-1/Tk}})$ and such market condition was maintained for a specified period of time u, a risk parameter subject to approval;

- 2) for any term k, prices of the best systemic sell orders in the order queue approached the lower boundary of the Price Corridor by an amount less than the value $w \times (PcH_{T-1/Tk} - PcL_{T-1/Tk})$ and such market condition was maintained for a given period of time u, of the risk parameter subject to approval.
2. Signal about the need to shift the boundaries of the repo rate corridors to control prices of orders to close repo transactions for term k in order to raise or place money shall be one of the following events:
 - 1) rates of the best orders to raise money under the "automatic" repo, which are in the order queue, approached the upper boundary of the repo rate corridor by an amount less than the value $\left(\frac{MM_IR \times w_IR}{x_IR}\right)$, and such market condition was maintained for a specified period of time u, of the risk parameter subject to approval;
 - 2) rates of the best orders to place money under the "automatic" repo, which are in the order queue, approached the upper boundary of the repo rate corridor by an amount less than the value $\left(\frac{MM_IR \times w_IR}{x_IR}\right)$, and such market condition was maintained for a specified period of time u, of the risk parameter subject to approval.

Article 29. Shifting the boundaries of the price corridor of a security

1. When making a decision to shift the upper boundary of price corridors to control prices of orders to close transactions to buy/ sell a security in the trading mode with partial collateral, the upper boundary shall be recalculated by the following formula:

$$NewPcH_{T/Tk} = \begin{cases} \text{shares} \left\{ \min \left[\begin{array}{l} P_T \times (1 + PcH_max), \text{ if } M=False; \\ \left| P_T \times \left(1 + \frac{2 \times Shift \times MR_{T-1}}{x_pr} \right) \times \left(1 + RRcH_{T/Tk} \times \frac{k}{365 \times 100} \right) \right|, \text{ if } M=True; \\ P_T \times (1 + PcH_max); \\ 0 \end{array} \right] \right\} \\ \text{bonds} \left\{ \min \left[\begin{array}{l} \frac{P_T \times (1 + PcH_max)}{FaceVal_T} \times 100, \text{ if } M=False; \\ \left| \frac{P_T \times \left(1 + \frac{2 \times Shift \times MR_{T-1}}{x_pr} \right) \times \left(1 + RRcH_{T/Tk} \times \frac{k}{365 \times 100} \right) - Carry_T - ACI_T}{FaceVal_T} \times 100 \right|, \text{ if } M=True \\ \frac{P_T \times (1 + PcH_max)}{FaceVal_T} \times 100; \\ 0 \end{array} \right] \right\} \end{cases}$$

2. When making a decision to shift the lower boundary of price corridors to control prices of orders to close transactions to buy/sell securities in the mode of trading with partial collateral, the lower boundary shall be recalculated by the following formula:

$$NewPcL_{T/Tk} = \begin{cases} \text{shares} \left\{ \min \left[\begin{array}{l} P_T \times (1 - PcL_max), \text{ if } M=False; \\ \left| P_T \times \left(1 - \frac{2 \times Shift \times MR_{T-1}}{x_pr} \right) \times \left(1 + RRcL_{T/Tk} \times \frac{k}{365 \times 100} \right) \right|, \text{ if } M=True; \\ P_T \times (1 - PcL_max); \\ 0 \end{array} \right] \right\} \\ \text{bonds} \left\{ \min \left[\begin{array}{l} \frac{P_T \times (1 - PcL_max)}{FaceVal_T} \times 100, \text{ if } M=False; \\ \left| \frac{P_T \times \left(1 - \frac{2 \times Shift \times MR_{T-1}}{x_pr} \right) \times \left(1 + RRcL_{T/Tk} \times \frac{k}{365 \times 100} \right) - Carry_T - ACI_T}{FaceVal_T} \times 100 \right|, \text{ if } M=True \\ \frac{P_T \times (1 - PcL_max)}{FaceVal_T} \times 100; \\ 0 \end{array} \right] \right\} \end{cases}$$

- For shares traded with settlements in foreign currency, values of restrictive levels of the price corridor boundaries calculated in tenge shall be converted into foreign currency by dividing by the settlement rate of the foreign currency of the relevant settlement date.

Article 30. Shifting the boundaries of the repo rate corridor

- When making a decision to shift the upper boundary of the repo rate corridor with a security to control prices of orders for repo transactions, the upper boundary of the repo rate corridor with a security for settlement dates T_k/T_i in the settlement currency shall be recalculated by the following formula:

$$\text{NewRRcH}_{T_k/T_i}^{\text{Curr}} = \left(\frac{365 \times 100 + \text{RepoR}_{T_i(KZT)} \times (T_i - T) - \text{RepoR}_{T_k(KZT)} \times (T_k - T)}{365 \times 100 + \text{SwapCurr}_{T_i} \times (T_i - T) - \text{SwapCurr}_{T_k} \times (T_k - T)} - 1 \right) \times \frac{365 \times 100}{T_i - T_k} + \frac{\text{NewH_IR}_{T_i}}{x_{\text{IR}}},$$

where the new value of the fall rate of the interest risk of a security which is calculated for the settlement date (T_i) on the trading day (T) by the following formula:

$$\text{NewH_IR}_{T_i} = \text{H_IR}_{T_i} + \text{Shift} \times (\text{RRcH}_{T_k/T_i}^{\text{Curr}} - \text{RRcL}_{T_k/T_i}^{\text{Curr}}).$$

- When making a decision to shift the lower boundary of the price corridor of repo rates with a security to control prices of orders for repo transactions, the lower boundary of the price corridor of repo rates with a security for the key term T_k/T_i in the settlement currency shall be recalculated by the following formula:

$$\text{NewRRcL}_{T_k/T_i}^{\text{Curr}} = \left(\frac{365 \times 100 + \text{RepoR}_{T_i(KZT)} \times (T_i - T) - \text{RepoR}_{T_k(KZT)} \times (T_k - T)}{365 \times 100 + \text{SwapCurr}_{T_i} \times (T_i - T) - \text{SwapCurr}_{T_k} \times (T_k - T)} - 1 \right) \times \frac{365 \times 100}{T_i - T_k} - \frac{\text{NewL_IR}_{T_i}}{x_{\text{IR}}},$$

where the new value of the fall rate of the interest risk of a security is calculated for the settlement date (T_i) on the trading day (T) by the following formula:

$$\text{NewL_IR}_{T_i} = \text{L_IR}_{T_i} + \text{Shift} \times (\text{RRcH}_{T_k/T_i}^{\text{Curr}} - \text{RRcL}_{T_k/T_i}^{\text{Curr}}).$$

Article 31. Shifting the boundaries of the market risk evaluation range during trading

- When shifting the upper (lower) boundary of the price corridor of the corresponding security, the upper (lower) boundaries of the market risk evaluation range of the first and second levels shall be shifted.
- For securities, shifts of price boundaries and boundaries of the market risk evaluation range shall be carried out in all trading modes for any period after the signal about the shift of price boundaries is triggered in the by the continuous counter auction method.
- When making a decision to shift the upper boundary of the price corridor, new value of the upper boundary of the first level market risk evaluation range shall be determined by the formula:

$$\text{PH_1}_T^{\text{New}} = \text{PH_1}_T + \frac{2 \times \text{Shift} \times P_{T-1} \times \text{MR}_{T-1}}{x_{\text{pr}}}.$$

- When making a decision to shift the upper boundary of the price corridor, new value of the upper boundary of the market risk evaluation range of the second level shall be determined by the formula:

$$\text{PH_2}_T^{\text{New}} = \text{PH_2}_T + \frac{2 \times \text{Shift} \times P_{T-1} \times \text{MR}_{T-1}}{x_{\text{pr}}}.$$

- When making a decision to shift the lower boundary of the price corridor, new value of the lower boundary of the market risk evaluation range of the first level shall be determined by the formula:

$$\text{PL_1}_T^{\text{New}} = \min \left(\text{PL_1}_T - \frac{2 \times \text{Shift} \times P_{T-1} \times \text{MR}_{T-1}}{x_{\text{pr}}}; 0 \right).$$

- When making a decision to shift the lower boundary of the price corridor, new value of the upper boundary of the market risk evaluation range of the second level shall be determined by the formula:

$$PL_2_T^{New} = \min \left(PL_2_T - \frac{2 \times \text{Shift} \times P_{T-1} \times MR_{T-1}}{x_{pr}}; 0 \right).$$

Article 32. Shifting the boundaries of the evaluation range of interest risks during trading

- When shifting the upper (lower) boundary of the price corridor of repo rates for the corresponding financial instrument, the upper (lower) boundaries of the evaluation range of interest risks shall be shifted.
- When making a decision to shift the upper boundary of the repo rate price corridor, new value of the upper boundary of the evaluation range of the interest risk shall be determined by the formula:

$$\text{NewRRH}_{Tk} = (\text{RepoR}_{Tk} + \text{NewH_IR}_{Tk}) \times \frac{Tk-T}{365 \times 100} \times P_T.$$

- When making a decision to shift the lower boundary of the repo rate price corridor, new value of the lower boundary of the evaluation range of the interest risk shall be determined by the formula:

$$\text{NewRRL}_{Tk} = (\text{RepoR}_{Tk} - \text{NewL_IR}_{Tk}) \times \frac{Tk-T}{365 \times 100} \times P_T.$$

Article 33. Determination of default settlement rates

- Default settlement rates for money on the stock market shall be determined for each settlement currency and shall be applied when closing a repo/swap transaction for all securities or foreign currencies that are the subject of the repo/swap transaction, and shall be calculated by the following formulas:

$$\left\{ \begin{array}{l} SD_fm_{KZT} = R_KZT + \text{CONST}_{KZT}, \\ SD_fm_{USD} = \begin{cases} \text{if } R_USD < 0, -(R_USD + \text{CONST}_{USD}) \\ \text{if } R_USD \geq 0, -(\text{CONST}_{USD}) \end{cases} \end{array} \right.$$

- If necessary, including in the presence of information about a significant change in the market situation, prices or an increase in volatility of the money market, the Committee can decide to change the established interest premium on a permanent basis or for a certain period before opening of trading or during a trading day.
- Default settlement rate for financial instruments shall be determined by the following formula:

$$SD_{sec} = \min(RR_{CL_{T0/T1}}^{KZT}, SDH_{sec}).$$

- On the day of determination of the list of persons entitled to receive dividends on shares, which is a trading day, or the last trading day preceding the day of determination of the list of persons entitled to receive dividends if the date of determination of the list falls on a non-trading day, and the trading day preceding it, instead of values of determination of SDH_{sec} and SDL_{sec} parameters, $SDH_{div_{sec}}$ and $SDL_{div_{sec}}$ parameters shall be used which are set based on the amount of dividends on shares determined as follows:

$$\left\{ \begin{array}{l} SDH_{div_{sec}} = \max \left(\min \left(SDH_{sec}; \text{floor} \left(-\frac{Div_T^{KZT}}{P_T} \times \frac{365}{N} \times 100\% \right) \right); -999\% \right) \\ SDL_{div_{sec}} = \min(SDH_{div_{sec}}; SDL_{sec}) \end{array} \right.$$

- In order to transfer obligations in a financial instrument, current value of the parameter SD_{sec} for this financial instrument at the time of the repo transaction at the default settlement rate shall be used.

Article 34. Procedure for determination of prices of balancing transactions

1. Fair market price of a financial instrument for the purposes to close balancing transactions between the Clearing Centre when it performs functions of the Central Counterparty and a bona fide clearing participant shall be determined as the last determined settlement price, calculated subject to the Methodology for Determination of Settlement prices of Securities.
2. Price determined in item 1 of this article may be adjusted by the amount of payments on the financial instrument determined based on available information on corporate actions, or by another amount determined based on information on other material facts of activities of the issuer of the financial instrument that could affect the price, including:
 - 1) the date of drawing up the list of persons entitled to receive money, as well as other property, including dividends, interest on financial instruments, payment of the face value;
 - 2) the date of drawing up the list of persons entitled to demand early redemption of bonds;
 - 3) the date of drawing up the list of owners of the redeemed financial instruments in case of a forced redemption subject to the laws of the Republic of Kazakhstan.
3. Prices determined in items 1 and 2 of this article and used by the Clearing Centre for the purposes to close balancing transactions between the Clearing Centre when performing its functions as the Central Counterparty and a bona fide clearing participant shall be posted on the official website of the Clearing Centre.

Chapter 8. CURRENCY MARKET

Article 35. Determination of foreign currency settlement rates

1. Settlement rates of foreign currency (Curr) shall be determined in relation to the tenge (KZT) for all settlement dates (Ti) and shall be calculated on each business day following the completion of the trading session for each foreign currency (Curr).
2. To determine foreign currency settlement rates, the central foreign currency exchange rate (CentralRateCurr) is determined based on open trading data for the relevant exchange rate-setting instrument.

The exchange rate-setting instruments for foreign currencies are:

CurrKZT_TOM (Curr=USD/EUR/RUB/CNY/other foreign currencies – by decision of the Committee) *(this item was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025).*
3. If the "short sales ban" indicator is set for a foreign currency, the central rate CentralRateCurr for such foreign currency shall be determined based on data about trades on CurrKZT_TOD, CurrKZT_TOM, CurrKZT_SPT instruments.
4. The Central rate CentralRateCurr for each foreign currency is set equal to the weighted average rate calculated for foreign currency purchase and sale transactions of the current trading day, concluded in the Exchange trading system in open trading mode during the last 30 (thirty) minutes before the end of the trading session for the relevant exchange rate-forming instrument, if the number of transactions for forming the central rate is at least N transactions, where N is set equal to 5 (five) for the US dollar or 3 (three) for other foreign currencies *(this item was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025).*

5. If on a current trading day in the trading system of the Exchange during the last 30 (thirty) minutes before the end of the trading session for the rate-setting instrument in the open trading mode, less than N transactions were closed, the central exchange rate of the foreign currency shall be set equal to a median value of the following values:
 - weighted average rate calculated for all relevant buy and sell transactions closed in the trading system of the Exchange in the open trading mode during the current trading day before the end of the trading session for the rate-setting instrument, in the absence of relevant transactions during a trading session of the current trading day, median value shall be calculated ignoring the weighted average rate;
 - price of the best buy order in the trading system of the Exchange in the open trading mode for the rate-setting instrument in the absence of relevant buy orders during a trading session of the current trading day, median value shall be calculated ignoring the buy orders;
 - price of the best sell order in the trading system of the Exchange in the open trading mode for the rate-setting instrument in the absence of relevant sell orders during a trading session of the current trading day, median value shall be calculated ignoring the sell orders.
6. If the "short sales ban" indicator is set for a foreign currency, the central exchange rate of the foreign currency shall be set equal to a median value of the following values:
 - weighted average rate calculated for all relevant buy and sell transactions closed in the trading system of the Exchange in the open trading mode during the current trading day until the end of trading sessions for CurrKZT_TOD, CurrKZT_TOM, CurrKZT_SPT instruments, in the absence of relevant transactions during trading sessions of the current trading day, median value shall be calculated ignoring the weighted average rate;
 - price of the best buy order in the trading system of the Exchange in the open trading mode for the rate-setting instrument in the absence of relevant buy orders during a trading session of the current trading day, median value shall be calculated ignoring the buy orders;
 - price of the best sell order in the trading system of the Exchange in the open trading mode for the rate-setting instrument in the absence of relevant sell orders during a trading session of the current trading day, median value shall be calculated ignoring the sell orders.
7. If during the current trading day until the end of the trading session in the open trading mode for the exchange rate-forming instrument for a certain foreign currency no transactions are closed, and also if during this period no orders for sale or buy for the exchange rate-forming instrument are submitted, the central rate shall be set equal to the rate of the National Bank of the Republic of Kazakhstan for the relevant foreign currency.
8. For cross-currency pairs, the central rate shall be set equal to the rate obtained based on values of central rates of foreign currencies, in which one of the currencies shall be the currency included in the cross-currency pair, and the second shall be Kazakh tenge.
9. Settlement rate of foreign currency Rate_Curr for the settlement date T0 shall be set equal to the central rate of foreign currency CentralRateCurr, determined subject to items 2–7 of this article:
$$\text{Rate_Curr}_{T0} = \text{CentralRateCurr}.$$
10. Settlement exchange rate of foreign currency for the settlement date $T_i > T_0$ shall be calculated subject to the following formula:

$$\text{Rate_Curr}_{Ti} = \text{CentralRate}_{Curr} \times \left(1 + \frac{\text{SwapCurr}_{Ti}}{365 \times 100} \times (Ti - T0) \right).$$

Article 36. Determining of the settlement prices of foreign currency transactions/currency swap transactions

1. In order to determine the settlement prices of foreign currency transactions/currency swap transactions, indicative rates of foreign currency transactions/currency swap transactions for the relevant foreign currency (Curr) are determined.
2. Calculation of indicative rates for currency swap transactions ($\text{IndRateCurr}_{Ti/Tk}$) is carried out daily based on the results of the trading session in open trading mode on key settlement dates Ti/Tk according to the following formula, with the exception of indicative rates for currency swap transactions for a period of one or two business days (SWAP-1D (USD) and SWAP-2D (USD)):

$$DF_{KZT} = \exp\left(-\left(\beta_{0_{KZT}} + (\beta_{1_{KZT}} + \beta_{2_{KZT}}) * \frac{\tau_{KZT}}{TK} * \left(1 - \exp\left(-\frac{TK}{\tau_{KZT}}\right)\right) - \beta_{2_{KZT}} * \exp\left(-\frac{TK}{\tau_{KZT}}\right) * \frac{TK}{365}\right)\right)$$

$$DF_{CURR} = \exp\left(-\left(\beta_{0_{CURR}} + (\beta_{1_{CURR}} + \beta_{2_{CURR}}) * \frac{\tau_{CURR}}{TK} * \left(1 - \exp\left(-\frac{TK}{\tau_{CURR}}\right)\right) - \beta_{2_{CURR}} * \exp\left(-\frac{TK}{\tau_{CURR}}\right) * \frac{TK}{365}\right)\right)$$

$$\text{IndRateCurr}_{Ti/Tk} = \frac{\left(\frac{DF_{CURR}}{DF_{KZT}}\right) - 1}{\frac{TK}{365}} * 100$$

Indicative rates for currency swap transactions for a period of one or two business days (SWAP-1D (USD) and SWAP-2D (USD)) are set equal to the values posted on the official website of the Exchange, in accordance with its internal document "Methodology for calculating money market indicators".

3. Indicative rates for transactions with foreign currency $\text{IndRateCurr}_{T1/T2}$ with the settlement date of the opening deal for transactions with foreign currency $T1$ and the key settlement date $T2$ corresponding to the settlement date of the closing deal for the transaction with foreign currency Curr on the instrument CurrKZT_1_001 are set equal to the corresponding indicative rates for transactions with foreign currency $\text{IndRateCurr}_{T0/T1}$ with the settlement date of the opening transaction for transactions with foreign currency $T0$ and the key settlement date $T1$.
4. Settlement prices of foreign currency transactions/currency swap transactions in percentage terms in relation to tenge on key dates Tk are calculated using the following formulas:

$$\begin{aligned} \text{SwapCurr}_{T0/T1} &= \text{IndRateCurr}_{T0/T1}; \\ \text{SwapCurr}_{T0/T2} &= \text{IndRateCurr}_{T0/T2}; \\ \text{SwapCurr}_{T1/T2} &= \text{IndRateCurr}_{T1/T2}; \\ \text{SwapCurr}_{T0/Tk} &= \left(\frac{\text{IndRateCurr}_{T0/T1} \times (T1 - T0) + \text{IndRateCurr}_{T1/Tk} \times (Tk - T1)}{Tk - T0} \right). \end{aligned}$$

5. Settlement prices of swap transactions with settlement dates different from the settlement dates of closing transactions on long swaps are calculated using the linear interpolation method.
6. Settlement prices of foreign currency transactions/currency swap transactions in tenge on any settlement date Tj $\text{SwapCurrKZT}_{T0/Tj}$ calculated using the formula:

$$\text{SwapCurrKZT}_{T_0/T_j} = \left(\frac{\text{SwapCurr}_{T_0/T_j} \times (T_j - T_0)}{365 \times 100} \right) \times \text{CentralRate}_{\text{curr}}.$$

7. If necessary, the Committee has the right to decide to change the values of settlement prices of swap transactions in a manner different from that described above if, in the opinion of the Committee members, they do not reflect a fair market valuation of the given financial instrument.

(This article was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025)

Article 37. Determining restrictive rates of market and interest rate risks for foreign currencies

1. To calculate the minimum initial margin rate (MR_{min}) for foreign currencies included in the List of financial instruments admitted to transactions with the central counterparty on the terms of partial collateral (List T+), the values ΔP_T ; $Stddev$; $EWMA$ are calculated using the formulas specified in items 2, 3, 4 and 5 of Article 10 of this Methodology.

For each foreign currency ($j, \dots, n$), taking into account the obtained values ΔP_T ; $Stddev$; $EWMA$, the maximum values $\Delta P_{T_{val_{max}}}$; $Stddev_{val_{max}}$; $EWMA_{val_{max}}$ are determined using the formulas:

$$\Delta P_{T_{val_{max}}} = \max(\Delta P_{T_{i,j}}, \dots, \Delta P_{T_{i,n}})$$

$$Stddev_{val_{max}} = \max(Stddev_{i,j}, \dots, Stddev_{i,n})$$

$$EWMA_{val_{max}} = \max(EWMA_{i,j}, \dots, EWMA_{i,n})$$

2. The $\Delta P_{T_{val_{max}}}$ value applies to each foreign currency and is the value MR_{min} for the corresponding foreign currency.

In the event that the calculated value $\Delta P_{T_{val_{max}}}$ does not correspond to the current market conditions, the Committee for determining the initial margin rates may select the values $Stddev_{val_{max}}$ or $EWMA_{val_{max}}$ to apply to each foreign currency as the value MR_{min} .

3. The minimum concentration rate for foreign currency is calculated using the formula:

$$\text{ConcR}_{min} = MR_{min} \times \sqrt{\frac{T_{Likv}}{T_{RH}}}.$$

4. The maximum initial margin rate MR_{max_fi} and the maximum foreign currency concentration rate ConcR_{max_fi} are set equal to 100%.
5. The minimum rate of increase/decrease in interest rate risk for foreign currency for each key period is determined as the solution to the following equation:

$$\text{MinH_IR}_{T_k} = \text{MinL_IR}_{T_k} = MR_{min}$$

6. The Committee has the right to decide on establishing limit rates for market and interest rate risk that differ from the values determined in accordance with this Methodology if there is information about a significant change in market conditions, increased market volatility, or other market factors both during trading and before the start of trading.

(This article was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025)

Article 38. Calculation of initial margin rates on foreign currencies

1. Initial margin rate on foreign currency shall be intended to evaluate the currency risk of a change in the exchange rate of a foreign currency against the tenge with the T_{RH} risk horizon established by the Committee.
2. Initial margin rate of foreign currency shall be calculated each trading day during calculation of risk parameters.
3. Initial margin rate of foreign currency shall be calculated by the formula:

$$MR_T = \begin{cases} \min \left(\text{ceiling} \left(\frac{\max(MR_{p_T} \times \sqrt{1 + \frac{m_T}{T_{RH}}} + R_{l_Curr}; MR_{min})}{h} \right) \times h; MR_{max_curr} \right), & \text{if } M = \text{True} \\ MR_{min}, & \text{if } M = \text{False} \end{cases}$$

4. Preliminary value of the initial margin rate of foreign currency shall be determined for a trading day (T) subject to the following algorithm:

$$MR_{p_T} = \begin{cases} \text{ceiling} \left(\frac{\alpha \cdot \sigma_T}{h} \right) \times h, & \text{if } \text{ceiling} \left(\frac{\alpha \cdot \sigma_T}{h} \right) \times h \geq MR_{p_T-1} + h \\ MR_{p_T-1} - h, & \text{if } \text{ceiling} \left(\frac{\alpha \cdot \sigma_T}{h} \right) \times h \leq (MR_{p_T-1} - h) \text{ and } T_{Ch} \geq n \\ MR_{p_T-1}, & \text{in any other case} \end{cases}$$

5. Initial margin rate of cross-currency pair (Curr1, Curr2) on the trading day (T) $MR_T^{Curr1/Curr2}$ shall be determined during calculation of risk parameters subject to the following algorithm:

- 1) it shall be set equal to a calculation value subject to item 3 of this article provided that the following conditions of data consistency are met for the cross-currency pair (Curr1, Curr2):

$$MR_{T-up}^{Curr1/Curr2}(\min) \leq MR_{T-up}^{Curr1/Curr2} \leq MR_{T-up}^{Curr1/Curr2}(\max)$$

$$MR_{T-down}^{Curr1/Curr2}(\min) \leq MR_{T-down}^{Curr1/Curr2} \leq MR_{T-down}^{Curr1/Curr2}(\max)$$

- 2) it shall be set equal to the closest boundary value in case of default on the condition fixed in sub-item 1) of this item, subject to the following algorithm:

$$MR_T^{Curr1/Curr2} = \begin{cases} \max(MR_{T-up}^{Curr1/Curr2}(\min); MR_{T-down}^{Curr1/Curr2}(\min)), & \text{if } MR_T^{Curr1/Curr2} < \max(MR_{T-up}^{Curr1/Curr2}(\min); MR_{T-down}^{Curr1/Curr2}(\min)) \\ \min(MR_{T-up}^{Curr1/Curr2}(\max); MR_{T-down}^{Curr1/Curr2}(\max)), & \text{if } MR_T^{Curr1/Curr2} > \min(MR_{T-up}^{Curr1/Curr2}(\max); MR_{T-down}^{Curr1/Curr2}(\max)) \end{cases}$$

- 3) it shall be set at the level of the upper boundary of the lowest interval $\min(MR_{T-up}^{Curr1/Curr2}(\max); MR_{T-down}^{Curr1/Curr2}(\max))$ when $[MR_{T-up}^{Curr1/Curr2}(\min); MR_{T-up}^{Curr1/Curr2}(\max)]$ and $[MR_{T-down}^{Curr1/Curr2}(\min); MR_{T-down}^{Curr1/Curr2}(\max)]$.

6. Upper and lower boundaries of the growth and fall rates of the calculation rate of foreign currency of the first level shall be determined by the following algorithm:

$$MR_{T-up}^{Curr1/Curr2}(\min) = \begin{cases} \frac{MR_{T-down}^{Curr2} - MR_{T-down}^{Curr1}}{1 - MR_{T-down}^{Curr2}}, & \text{if } MR_{T-down}^{Curr1} \leq MR_{T-down}^{Curr2} \\ \max \left(0; \frac{MR_{T-up}^{Curr1} - MR_{T-up}^{Curr2}}{1 + MR_{T-up}^{Curr2}} \right), & \text{otherwise} \end{cases}$$

$$MR_{T-up}^{Curr1/Curr2}(\max) = \frac{MR_{T-up}^{Curr1} + MR_{T-down}^{Curr2}}{1 - MR_{T-up}^{Curr2}}$$

$$MR_{T-down}^{Curr1/Curr2}(\min) = \begin{cases} \max \left(0; \frac{MR_{T-up}^{Curr2} - MR_{T-up}^{Curr1}}{1 + MR_{T-up}^{Curr2}} \right), & \text{if } MR_{T-down}^{Curr1} \leq MR_{T-down}^{Curr2} \\ \frac{MR_{T-down}^{Curr1} - MR_{T-down}^{Curr2}}{1 - MR_{T-down}^{Curr2}}, & \text{otherwise} \end{cases}$$

$$MR_{T-down}^{Curr1/Curr2}(\max) = \frac{MR_{T-up}^{Curr2} + MR_{T-down}^{Curr1}}{1 - MR_{T-up}^{Curr2}}$$

Article 39. Calculation of concentration boundaries on foreign currencies

Concentration boundary for each foreign currency (Curr) shall be calculated as follows:

- 1) number of trading days in which trading was carried out in the trading system of the Exchange by any of the CurrKZT_TOD, CurrKZT_TOM, CurrKZT_SPT instruments in foreign currency Curr in the historical period established by the Committee shall be determined;
- 2) total trading volume for CurrKZT_TOD, CurrKZT_TOM, CurrKZT_SPT instruments in foreign currency Curr for the established historical period in the amount of foreign currency shall be calculated;
- 3) average daily trading volume on foreign currency Curr for the historical period shall be calculated by the formula:

$$V_{\text{daily}} = \frac{V_{\text{sum}}}{N_{\text{trade}}}$$

- 4) concentration boundary on foreign currency shall be determined by the formula:

$$L_{\text{conc}} = V_{\text{daily}} \times K_{\text{conc}}$$

Article 40. Determining of the upper and lower boundaries of the market risk evaluation range

1. The upper boundary of the range for assessing foreign currency market risks with a first-level risk evaluation horizon and a net position size not exceeding the established concentration limit is determined by the formula:

$$RH_{1T} = \text{Rate_Curr}_T \times (1 + MR_T).$$

2. The upper boundary of the range for assessing foreign currency market risks with a second-level risk evaluation horizon and a net position size exceeding the established concentration limit:

$$RH_{2T} = \text{Rate_Curr}_T \times (1 + \text{ConcR}_T).$$

3. The lower boundary of the range for assessing foreign currency market risks with a first-level risk evaluation horizon and a net position size not exceeding the established concentration limit, is determined by the formula:

$$RL_{1T} = \text{Rate_Curr}_T \times (1 - MR_T).$$

4. The lower boundary of the range for assessing foreign currency market risks with a second-level risk evaluation horizon and with a net position size exceeding the established concentration limit is determined by the formula:

$$RL_{2T} = \text{Rate_Curr}_T \times (1 - \text{ConcR}_T).$$

5. Rates of growth (fall) of the settlement exchange rate of foreign currency at the risk evaluation horizon of the first and the second levels are determined by the formulas:

$$MR_{T\text{-up}} = \frac{RH_{1T}}{\text{Rate_Curr}_T} - 1$$

$$\text{ConcR}_{T\text{-up}} = \frac{RH_{2T}}{\text{Rate_Curr}_T} - 1$$

$$MR_{T\text{-down}} = 1 - \frac{RL_{1T}}{\text{Rate_Curr}_T}$$

$$\text{ConcR}_{T\text{-down}} = 1 - \frac{RL_{2T}}{\text{Rate_Curr}_T}$$

(This article was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025)

Article 40-1. Shifting the boundaries of the market risk evaluation range during trading

1. When the upper (lower) boundary of the price corridor of the corresponding security is shifted, the upper (lower) boundaries of the market risk evaluation range of the first and second levels are shifted.
2. For securities, shifts in price boundaries and boundaries of the market risk evaluation range are carried out in all trading modes for any period after the triggering of a signal about a shift in price boundaries in the buy/sell trading mode using the continuous counter auction method.
3. When making a decision to shift the upper boundary of the price corridor, the new value of the upper boundary of the first level market risk evaluation range is determined by the formula:

$$RH_1_T^{New} = RH_1_T + \frac{2 \times \text{Shift} \times \text{Rate_Curr}_T \times MR_{T-1}}{x_pr}$$

4. When making a decision to shift the upper boundary of the price corridor, the new value of the upper boundary of the second level market risk evaluation range is determined by the formula:

$$RH_2_T^{New} = RH_2_T + \frac{2 \times \text{Shift} \times \text{Rate_Curr}_T \times MR_{T-1}}{x_pr}$$

5. When making a decision to shift the lower boundary of the price corridor, the new value of the lower boundary of the first level market risk evaluation range is determined by the formula:

$$RL_1_T^{New} = \min \left(RL_1_T - \frac{2 \times \text{Shift} \times \text{Rate_Curr}_T \times MR_{T-1}}{x_pr}; 0 \right).$$

6. When making a decision to shift the lower boundary of the price corridor, the new value of the upper boundary of the second level market risk evaluation range is determined by the formula:

$$RL_2_T^{New} = \min \left(RL_2_T - \frac{2 \times \text{Shift} \times \text{Rate_Curr}_T \times MR_{T-1}}{x_pr}; 0 \right).$$

(This article was included by a decision of the Management Board of the Clearing Centre dated August 28, 2025)

Article 41. Calculation of interest risk rates and interest risk rates upon concentration on foreign currencies

1. For each foreign currency, growth rates and fall rates of the interest rate shall be determined separately.
2. Growth rate and fall rate of the interest rate of the foreign currency shall be calculated for the key settlement date (Tk) each trading day (T) during calculation of risk parameters.
3. Growth rate of the interest rate of foreign currency shall be determined by the formula:

$$H_IR_{Tk} = \begin{cases} \text{ceiling} \left(\frac{\max(IR_p_{Tk} + RR_{l_curr}, \text{Min}H_IR_{Tk})}{h_IR} \right) \times h_IR, & \text{if } M = \text{True} \\ \text{ceiling} \left(\frac{\text{Min}H_IR_{Tk}}{h_IR} \right) \times h_IR, & \text{if } M = \text{False} \end{cases}$$

4. Fall rate of the interest risk of foreign currency shall be determined by the formula:

$$L_IR_{Tk} = \begin{cases} \text{ceiling} \left(\frac{\max(IR_p_{Tk} + RR_{L_Curr}; \text{Min}L_IR_{Tk})}{h_IR} \right) \times h_IR, & \text{if } M = \text{True} \\ \text{ceiling} \left(\frac{\text{Min}L_IR_{Tk}}{h_IR} \right) \times h_IR, & \text{if } M = \text{False} \end{cases}$$

5. Preliminary value of the interest risk rate of foreign currency shall be determined for a pre-set settlement date (Tk) subject to the following algorithm:

$$IR_p_{Tk} = \begin{cases} \text{ceiling} \left(\frac{\alpha^* \sigma_T^{Tk}}{h_IR} \right) \times h_IR, & \text{if } \text{ceiling} \left(\frac{\alpha^* \sigma_T^{Tk}}{h_IR} \right) \times h \geq IR_p_{T-1}^{Tk} + h_IR \\ IR_p_{T-1}^{Tk} - h_IR, & \text{if } \text{ceiling} \left(\frac{\alpha^* \sigma_T^{Tk}}{h_IR} \right) \times h \leq (IR_p_{T-1}^{Tk} - h_IR) \text{ and } T_{Ch} \geq n_IR \\ IR_p_{T-1}^{Tk}, & \text{in any other case} \end{cases}$$

6. Growth (fall) rates of the interest risk on foreign currency shall be determined for key terms Tk corresponding to the settlement date of the closing deal of the foreign currency operation/ currency swap transaction.
7. For key terms corresponding to the settlement dates of delivery futures, interest risk rates for growth (fall) shall be established using linear interpolation.
8. Growth (fall) rates of the interest risk for terms Tj other than key terms shall be calculated by the linear interpolation method.
9. Interest risk rates for terms longer than the maximum key term shall be set equal to the rates of a maximum key term.

Article 42. Calculation of interest risk rates upon concentration on foreign currencies

1. Interest risk rates upon concentration on foreign currencies shall be calculated subject to the risk horizon T_{Likv} fixed by the Committee for currency market and corresponding to evaluation of the period for liquidation of an open position in foreign currency exceeding the concentration boundary established for it.
2. Growth rate of the interest risk upon concentration for each settlement date (Tk) shall be determined by the formula:

$$H_ConclR_{Tk} = \text{ceiling} \left(\frac{H_IR_{Tk} \times \sqrt{\frac{T_{Likv}}{T_{RH}}}}{h_IR} \right) \times h_IR.$$

3. Fall rate of the interest risk upon concentration on foreign currency shall be determined by the formula:

$$L_ConclR_{Tk} = \text{ceiling} \left(\frac{L_IR_{Tk} \times \sqrt{\frac{T_{Likv}}{T_{RH}}}}{h_IR} \right) \times h_IR, \text{ where}$$

Article 43. Determination of the upper and lower boundaries of the evaluation range of the interest risk

1. The upper boundary of the evaluation range of the interest risk of the first level of foreign currency for the settlement date Tk on the trading day (T) shall be determined by the following formula:

$$RRH_{Tk} = (SwapCurr_{Tk} + H_IR_{Tk}) \times \frac{Tk - T}{365 \times 100} \times CentralRate_{Curr}.$$

2. The lower boundary of the evaluation range of the interest risk of the first level of foreign currency for the settlement date Tk shall be determined by the following formula:

$$RRL_{Tk} = (\text{SwapCurr}_{Tk} - L_IR_{Tk}) \times \frac{Tk-T}{365 \times 100} \times \text{CentralRate}_{Curr}.$$

3. The upper boundary of the evaluation range of the interest risk of the second level of foreign currency for the settlement date Tk shall be determined by the following formula:

$$RRH_2_{Tk} = (\text{SwapCurr}_{Tk} + H_ConclR_{Tk}) \times \frac{Tk-T}{365 \times 100} \times \text{CentralRate}_{Curr}.$$

4. The lower boundary of the evaluation range of the interest risk of the second level of foreign currency for the settlement date Tk shall be determined by the following formula:

$$RRL_2_{Tk} = (\text{SwapCurr}_{Tk} - L_ConclR_{Tk}) \times \frac{Tk-T}{365 \times 100} \times \text{CentralRate}_{Curr}.$$

Article 44. Determination of boundaries of the price corridor on foreign currencies

1. For the purposes of monitoring of orders submitted in the trading system to close transactions with foreign currencies, the following shall be established:
 - 1) price corridors to monitor prices of orders to close transactions for buy and sale of foreign currency, with the exception of transactions with foreign currency/ currency swap transactions (hereinafter – the spot price corridor);
 - 2) price corridors to monitor prices of orders to close transactions with foreign currency/ currency swap transactions. For each instrument in swap trading modes, its own price corridor shall be established depending on the term of discharge of obligations (hereinafter – the swap price corridor).

2. When the prices of orders to close transactions approach the boundaries of the price corridors, a procedure for shifting the boundaries of the evaluation range of market or interest risks of foreign currency shall be carried out.

3. The upper boundary of the spot price corridor for any settlement date (Tj) shall be determined by the following formula:

$$RcH_{Tj} = \text{CentralRate}_{Curr} \times \left(1 + \frac{MR_t}{x_{pr}} \right) \times \left(1 + \frac{\left(\text{SwapCurr}_{T0/Tj} + \frac{H_IR_{Tj}}{\text{swapx}} \right) \times (Tj-T0)}{365 \times 100} \right).$$

4. The lower boundary of the spot price corridor for any settlement date (Tj) shall be determined by the following formula:

$$RcL_{Tj} = \text{CentralRate}_{Curr} \times \left(1 - \frac{MR_t}{x_{pr}} \right) \times \left(1 + \frac{\left(\text{SwapCurr}_{T0/Tj} - \frac{L_IR_{Tj}}{\text{swapx}} \right) \times (Tj-T0)}{365 \times 100} \right).$$

5. The upper boundary of the swap price corridor in percent per annum for any settlement date (Tj) shall be determined by the following formula:

$$\text{SwapRcH}_{T0/Tj} = \text{SwapCurr}_{T0/Tj} + \frac{H_IR_{Tj}}{\text{swapx}}.$$

6. The lower boundary of the swap price corridor in percent per annum for any settlement date (Tj) shall be determined by the following formula:

$$\text{SwapRcL}_{T_0/T_j} = \text{SwapCurr}_{T_0/T_j} - \frac{L_IR_{T_j}}{\text{swapx}}.$$

7. The upper boundary of the spot price corridor for any settlement date (Tj) under cross-currency pair (Curr1, Curr2) shall be determined by the following formula:

$$\text{RcH}_{T_j/T_j}^{\text{Curr1/Curr2}} = \text{CentralRate}_{\text{Curr1/Curr2}} \times \left(1 + \frac{\text{MR}_{T_j}^{\text{Curr1/Curr2}}}{x_{pr}} \right) \times \left(1 + \frac{\left(\text{SwapCurr}_{T_0/T_j} + \frac{H_IR_{T_j}^{\text{Curr1}}}{\text{swapx}} \right) \times (T_j - T_0)}{365 \times 100} \right).$$

8. The lower boundary of the spot price corridor for any settlement date (Tj) under cross-currency pair (Curr1, Curr2) shall be determined by the following formula:

$$\text{RcL}_{T_j/T_j}^{\text{Curr1/Curr2}} = \text{CentralRate}_{\text{Curr1/Curr2}} \times \left(1 - \frac{\text{MR}_{T_j}^{\text{Curr1/Curr2}}}{x_{pr}} \right) \times \left(1 + \frac{\left(\text{SwapCurr}_{T_0/T_j} - \frac{L_IR_{T_j}^{\text{Curr1}}}{\text{swapx}} \right) \times (T_j - T_0)}{365 \times 100} \right).$$

9. The upper value of the swap price corridor in currency Curr2 with currency pair Curr1/Curr2 under instruments on the settlement date Tj for open trading mode shall be calculated as:

$$\text{SwapRcH}_{T_j/T_j}^{\text{Curr1/Curr2}} = \text{CentralRate}_{\text{Curr1/Curr2}} \times \frac{\left(\text{FwdRate}_{T_i/T_j} + \frac{H_IR_{T_j}^{\text{Curr1}}}{\text{swapx}} \right) \times (T_j - T_0)}{365 \times 100}.$$

10. The lower value of the swap price corridor in percent for cross-currency pairs under instruments on the settlement date Tj for open trading mode shall be calculated as:

$$\text{SwapRcH}_{T_i/T_j}^{\text{Curr1/Curr2}} = \text{CentralRate}_{\text{Curr1/Curr2}} \times \frac{\left(\text{FwdRate}_{T_i/T_j} - \frac{L_IR_{T_j}^{\text{Curr1}}}{\text{swapx}} \right) \times (T_j - T_i)}{365 \times 100}.$$

11. Settlement rate on foreign currency Curr1 with respect to currency Curr2 for operations with foreign currency/currency swap transactions with settlement dates Ti/Tj shall be determined by the following algorithm:

- 1) settlement rate on foreign currency Curr1 with respect to currency Curr2=KZT for foreign currency operations/currency swap transactions with settlement dates Ti/Tj shall be determined by the following formula:

$$\text{FwdRateCurr1}_{T_i/T_j} = \frac{\text{SwapCurr1}_{T_0/T_j} \times (T_j - T_0) - \text{SwapCurr1}_{T_0/T_i} \times (T_i - T_0)}{(T_j - T_i)};$$

- 2) settlement rate on foreign currency Curr1 shall be determined in relation to the currency Curr2≠KZT for foreign currency operations/currency swap transactions with settlement dates Ti/Tj by the following formula:

$$\text{FwdRate}_{T_i/T_j} = \left[\frac{100 + \text{FwdRateCurr1}_{T_i/T_j} \times \frac{(T_j - T_i)}{365}}{100 + \text{FwdRateCurr2}_{T_i/T_j} \times \frac{(T_j - T_i)}{365}} - 1 \right] \times \frac{365 \times 100}{(T_j - T_i)}.$$

12. Price corridors to control prices of orders to close transactions in direct foreign currency operation modes shall be set equal to the price corridors for transactions in the open trading modes for relevant instruments.

Article 45. Specifics of shifting the boundaries of price corridors before the start and during trading

- For foreign currencies under which the monitoring indicator is set to "False", automatic signals shall not be triggered and no shifts shall occur in an automatic mode.
- Monitoring of the price corridor boundaries set in direct foreign currency operation modes shall not be carried out.
- A signal about the need to shift the spot price corridor boundary shall be one of the following events:

- 1) rates of the best buy orders in the open trading modes in the order queue (the best demand) approached the upper boundary of the price corridor by an amount less than the value $w \times (RcH_{Tj} - RcL_{Tj})$ and such market condition was maintained for a specified period of time u , a risk parameter subject to approval;
- 2) rates of the best orders of the best sell orders in the open trading modes, which are in the order queue, approached the lower boundary of the price corridor by an amount less than the value $w \times (RcH_{Tj} - RcL_{Tj})$ and such market condition was maintained for a specified period of time u , a risk parameter subject to approval;
- 3) before start of the trading, the forecast rate differs from the boundary of the Price corridor by less than the value $w \times (RcH_{Tj} - RcL_{Tj})$ or does not fall within the price corridor.
4. The signal about the need to shift the swap price corridor boundary shall be one of the following events:
 - 1) rates of the best non-target orders for fund raising, which are in the order queue, approached the upper boundary of the price corridor by an amount less than the value $CentralRate_{Curr1/Curr2} \times \frac{H_IR_{Tj}^{Curr1}}{swapx} \times \frac{(Tj-T0)}{365 \times 100}$ and such market condition was maintained for a specified period of time u , a risk parameter subject to approval;
 - 2) rates of the best non-target orders to place money in the order queue approached the lower boundary of the price corridor by an amount less than the value of $CentralRate_{Curr1/Curr2} \times \frac{L_IR_{Tj}^{Curr1}}{swapx} \times \frac{(Tj-T0)}{365 \times 100}$ and such market condition was maintained for a given period of time u , a risk parameter subject to approval;
 - 3) before start of the trading, the forecast rate is away from the upper boundary of the price corridor by less than the value $CentralRate_{Curr1/Curr2} \times \frac{H_IR_{Tj}^{Curr1}}{swapx} \times \frac{(Tj-T0)}{365 \times 100}$ and from the lower boundary of the price corridor by less than the value $CentralRate_{Curr1/Curr2} \times \frac{L_IR_{Tj}^{Curr1}}{swapx} \times \frac{(Tj-T0)}{365 \times 100}$ or does not fall within the price corridor.
5. Where automatic signal does not trigger and at the same time there is a situation where the instrument rate in direct transaction modes approaches the boundary of the price corridor by a value of less than $w \times (RcH_{Tj} - RcL_{Tj})$ or is outside the boundaries of the price corridor, the Clearing Centre shall have the right to decide to change the boundary of the spot price corridor.
6. When making a decision to shift the upper boundary of the spot price corridor, the upper boundary of the spot price corridor shall be shifted upward by the value $Shift \times (RcH_{Tj} - RcL_{Tj})$ while for buy and sell transactions in open trading and direct transactions modes, width of the price corridor for transactions with Curr1Curr2_TOD instruments, set on the morning of the current trading day T , shall be used.
7. When making a decision to shift the lower boundary of the spot price corridor, the lower boundary of the spot price corridor shall be shifted downward by the value $Shift \times (RcH_{Tj} - RcL_{Tj})$ while for buy and sell transactions in open trading and direct transactions modes, the width of the price corridor for transactions with Curr1Curr2_TOD instruments, set during calculation of risk parameters on trading day $T-1$, shall be used.

8. When shifting the spot price corridor boundary, with the exception of the settlement date $T_j > T_2$, the new value of the boundary of the risk evaluation range shall be determined as follows:

- 1) when shifting the upper boundary of the spot price corridor, the value of the upper boundary of the evaluation range of market risks of the first level shall be calculated as

$$\text{NewRH}_{1T} = \text{RH}_{1T-1} + (\text{NewRcH}_T - \text{RcH}_{T-1}), \text{ where}$$

the upper boundary of the range of the second level shall be shifted upward by the value $(\text{RH}_{1T} - \text{RH}_{1T-1})$;

- 2) when shifting the lower boundary of the spot price corridor, the value of the lower boundary of the evaluation range of market risks of the first level shall be calculated as

$$\text{NewRL}_{1T} = \text{RL}_{1T-1} + (\text{NewRcL}_T - \text{RcL}_{T-1}), \text{ where}$$

the lower boundary of the range of the second level shall be shifted downward by the value $(\text{RL}_{1T} - \text{RL}_{1T-1})$.

9. In case of a signal about a shift in the boundary of the swap price corridor in the open trading mode (Swap) with settlement dates T_i/T_j , values of $H_IR_{T_j}$ or $L_IR_{T_j}$ shall change depending on the direction of the shift by the value $2 \times \text{Shift} \times \frac{H_IR_{T_j}^{\text{Curr1}}}{\text{swapx}}$ or $2 \times \text{Shift} \times \frac{L_IR_{T_j}^{\text{Curr1}}}{\text{swapx}}$ respectively.

10. Shift coefficient for cross-currency pairs shall be set equal to:

$$\text{Shift_MR}_T^{\text{Curr1/Curr2}} = \frac{2 \times \text{Shift} \times \text{MR}_T^{\text{Curr1/Curr2}}}{x_{pr}}$$

11. New value for the settlement date T_j of growth rates of the interest risk of the foreign currency shall be determined by the formula:

$$\text{Shift_H_IR}_{T_j} = H_IR_{T_j} + \frac{2 \times \text{Shift} \times H_IR_{T_j}}{\text{swapx}}.$$

12. New value for the settlement date T_j of fall rates of the interest risk of the foreign currency shall be determined by the formula:

$$\text{Shift_L_IR}_{T_j} = L_IR_{T_j} + \frac{2 \times \text{Shift} \times L_IR_{T_j}}{\text{swapx}}.$$

13. Growth (fall) rates of the interest rate for settlement dates different from key ones shall be calculated by the linear interpolation method.

14. The upper and lower values of indicative rates in tenge for settlement dates T_j after the shift shall be recalculated by the following formulas:

$$\text{Shift_SwapRcH}_{T_0/T_j}^{\text{Curr/KZT}} = \frac{[\text{SwapCurr}_{T_0/T_j} + \text{Shift_H_IR}_{T_j}] \times (T_j - T_0)}{365 \times 100} \times \text{CentralRate}_{\text{Curr}}$$

$$\text{Shift_SwapRcL}_{T_0/T_j}^{\text{Curr/KZT}} = \frac{[\text{SwapCurr}_{T_0/T_j} - \text{Shift_L_IR}_{T_j}] \times (T_j - T_0)}{365 \times 100} \times \text{CentralRate}_{\text{Curr}}$$

15. The upper/ lower value of the price corridor swap in annual percents for each settlement date T_j after shift shall be determined as:

$$\text{Shift_SwapRcH}_{T_0/T_j} = \text{SwapCurr}_{T_0/T_j} + \frac{\text{Shift_H_IR}_{T_j}}{\text{swapx}},$$

$$\text{Shift_SwapRcL}_{T_0/T_j} = \text{SwapCurr}_{T_0/T_j} - \frac{\text{Shift_L_IR}_{T_j}}{\text{swapx}}.$$

16. The upper/ lower value of the price corridor swap in currency Curr2 with currency pair Curr1/Curr2 under instruments on settlement date T_j for regime of open trading after shift shall be calculated as:

$$\text{Shift_SwapRcH}_{T_j T_j}^{\text{Curr1/Curr2}} = \text{CentralRate}_{\text{Curr1/Curr2}} \times \frac{\left(\text{FwdRate}_{T_j T_j} + \frac{\text{Shift_H_IR}_{T_j}^{\text{Curr1}}}{\text{swapx}} \right) \times (T_j - T_0)}{365 \times 100},$$

$$\text{Shift_SwapRcL}_{T_j T_j}^{\text{Curr1/Curr2}} = \text{CentralRate}_{\text{Curr1/Curr2}} \times \frac{\left(\text{FwdRate}_{T_j T_j} - \frac{\text{Shift_L_IR}_{T_j}^{\text{Curr1}}}{\text{swapx}} \right) \times (T_j - T_0)}{365 \times 100}.$$

Article 46. Default settlement rates used when closing swap transactions for the purpose to carry over a position on outstanding obligations

1. Default settlement rate SD on tenge/foreign currency shall be the interest rate that is the price of the swap transaction closed between the Clearing Centre and the National Bank of the Republic of Kazakhstan/provider bank/bona fide clearing participant in the swap transaction for the purpose to carry over outstanding obligations of the Clearing Centre to the bona fide clearing participant.
2. Default settlement rate used when closing a swap transaction subject to item 1 of this article shall be the price of the swap transaction for the swap transaction closed between the unconscientious clearing participant and the Clearing Centre for the purpose to carry over outstanding obligations of the unconscientious clearing participant to the Clearing Centre.
3. Default settlement rate SD on tenge/ foreign currency shall be the interest rate in tenge expressed as a percentage per annum.
4. If the unconscientious clearing participant buys foreign currency from the Clearing Centre in an opening deal of a swap transaction and sells it in the closing deal of the swap transaction, the default settlement rate for the relevant foreign currency SDCurr shall be applied.
5. If the unconscientious clearing participant sells foreign currency for tenge in the opening deal of a swap transaction and buys foreign currency for tenge in the second part, default settlement rate for tenge SD_{KZT} shall be applied.
6. Default settlement rate used when closing a swap transaction between the Clearing Centre and the National Bank of the Republic of Kazakhstan/ provider bank/ bona fide clearing participant shall be the price of the swap transaction closed between the unconscientious clearing participant and the Clearing Centre.
7. In case of default settlement by closing a swap transaction on USD/KZT with the National Bank of the Republic of Kazakhstan, the default settlement rates in case of default on the USD shall be calculated by the following formula:
 - 1) $SD_{KZT} = R_{KZT} + \text{CONST}_{KZT},$
 - 2) $SD_{USD} = ((R_{KZT} - 1 \%) - R_{USD}) / (1 + R_{USD}).$
8. In case of default settlement by closing a swap transaction with a provider bank, the default settlement rates approved by the Committee shall apply. Subject to the agreement reached with the provider bank, default settlement rates shall be determined by the following formulas:
 - 1) in case of default in tenge:

$$SD_{KZT} = R_{KZT} + \text{CONST}_{KZT};$$
 - 2) in case of default in foreign currency:

$$SD_{CURR} = \begin{cases} - (R_{CURR} + \text{CONSTCURR}) & \text{if } R_{CURR} > 0; \\ - (\text{CONSTCURR}) & \text{if } R_{CURR} < 0. \end{cases}$$
9. In certain cases, the Committee shall have the right to decide to change the default settlement rate for tenge/ foreign currency for all or for individual (separate) clearing participants (clearing participant), including setting the default settlement rate equal to zero.

Article 47. Determination of prices of balancing transactions on the currency market

Fair market price of foreign currency for the purposes of closing balancing transactions between the Clearing Centre when performing its functions as the Central Counterparty and a bona fide clearing participant shall be determined as the last determined settlement rate of foreign currency calculated subject to article 35 of this Methodology.

Chapter 9. FINAL PROVISIONS

Article 48. Updating the provisions of this Methodology

1. The responsibility for timely introduction of changes and additions to this Methodology shall be borne by the Clearing House.
2. This Methodology shall be updated as necessary but not less than once every three years to be counted from the date this Methodology takes effect.

Chairperson of the Management Board

N. Khoroshevskaya

Appendix 1

to the Methodology for
determining risk parameters
of financial instruments

PARAMETERS
for evaluation of volatility

- T – trading day T ;
- T_{RH} – first-level risk evaluation horizon;
- P_T – settlement price/ value of the TONIA indicator on the trading day (T);
- P_{T-1} – settlement price/ value of the TONIA indicator on the trading day ($T-1$);
- $P_{T_{RH}}$ – settlement price/value of the TONIA indicator on the trading day ($T- T_{RH}$);
- ΔP_T – maximum relative deviation of the price/value of the TONIA indicator on the trading day (T) compared to prices/value of the TONIA indicator on the previous trading days for the T_{RH} period;
- ΔP_T^* – a maximum absolute deviation of the price/value of the TONIA indicator on the trading day (T) compared to the prices/value of the TONIA indicator on the previous trading days for the T_{RH} period.

Appendix 2

to the Methodology for
determining risk parameters
of financial instruments

PARAMETERS

**for determination of risk parameters subject to approval and settlement risk
parameters of the stock market**

ACI_T	–	accrued coupon income of a bond on the date (T) determined in the denomination currency;
ACI_{T+1}	–	accrued coupon income of a bond in the denomination currency calculated as of the trading day following the day of determination of the settlement price of the bond;
ACI_T^j	–	accrued coupon income of the j-th bond included in the Repo Basket on the date (T), determined in Kazakh tenge;
ACI_{Tk}^j	–	accrued coupon income of the j-th bond included in the Repo Basket on the date (Tk), determined in Kazakh tenge;
$CashFlow_T$	–	cash flow on the bond on the date (T);
$Carry_T$	–	present value of the cash flow of a bond on the date (T), including coupon payments, amortization, payments of the principal amount in t years from the date of calculation of risk parameters on this security determined in the denomination currency;
ceiling	–	function of rounding up to an integer value;
$ConcR_{min}$	–	minimum concentration rate on a security;
$ConcR_T$	–	concentration rate of a security on the trading day (T);
$CONST_{KZT}$	–	percent premium set by the Committee;
$CONST_{USD}$	–	percent premium set by the Committee;
Div_T^{Curr}	–	amount of dividends on a share in foreign currency;
Div_T^{KZT}	–	amount of dividends on a share in tenge, for dividend payments in a currency other than tenge;
floor	–	function of rounding down to an integer;
$FaceVal_{Curr}$	–	par value of the bond in the denomination currency;
$FaceVal_T$	–	current par value of the bond in a denomination currency;
k	–	number of calendar days between the date (Tk) and the current trading day (T);
K_{conc}	–	concentration coefficient, which is a fundamental parameter set by the Committee for the stock market;
k_MR_{min}	–	minimum threshold level of an initial margin rate of the security established by the Committee, taking into account the terms and conditions established by agreements on provision of provider's services on transactions with securities, and/or information significant changes in market prices, and/or information about increased market volatility (if any), and/or a level of additional types of risk that have a significant impact on a change in the price of a security;

H_IR_{Tk}	– growth rate of the interest risk of a security, calculated for a specific settlement date (Tk) on the trading day (T);
$H_IR_Bskt_{Tk}$	– growth rate of the interest risk upon security concentration, calculated for the settlement date Tk on the trading day (T);
IR_p_{Tk}	– preliminary value of the interest risk for a specific settlement date (Tk) on the trading day (T);
$IR_p_{T-1}^{Tk}$	– preliminary value of the interest risk on the settlement date (Tk) determined for a trading day (T-1);
LotSize	– lot size on a financial instrument in the main trading modes;
L_{conc}	– concentration boundary for a share expressed in the number of securities;
L_IR_{Tk}	– fall rate of the interest risk of a security, calculated for a specific settlement date (Tk) on the trading day (T);
$L_IR_Bskt_{Tk}$	– fall rate of the interest risk upon security concentration, calculated for the settlement date Tk on the trading day (T);
M	– sign of monitoring of orders, a risk parameter of a security subject to approval, determined and revised by the Committee as necessary;
$MinM_IR_{Tk}$	– minimum growth rate of the interest risk of a security;
$MinSec_IR_{Tk}$	– minimum fall rate of the interest risk of a security;
M _{min}	– minimum initial margin rate of a security;
MR _T	– initial margin rate of a security on the trading day (T);
MR _{T-1}	– initial margin rate of a security on the trading day (T-1);
N	– number of calendar days for an overnight repo transaction carried out on a day of determination of a list of persons entitled to receive dividends under shares;
N _{trade}	– number of trading days in the historical period;
N_{Tk}	– number of repo opening operations with settlements in Kazakh tenge with the settlement date (Tk) for a trading day on which the settlement is made;
$NewH_IR_{Tk}$	– new value of the growth rate of the interest risk on a financial instrument, calculated for the settlement date Tk on the trading day (T);
$NewL_IR_{Tk}$	– new value of the fall rate of the interest risk on a financial instrument, calculated for the settlement date Tk on the trading day (T);
$NewPcH_{T/Tk}$	– new value of the upper boundary of the price corridor of the security price, calculated for a trading day (T) under transactions with the settlement date Tk;
$NewPcL_{T/Tk}$	– new value of the lower boundary of the price corridor of a security, calculated for a trading day (T) under transactions with the settlement date Tk;
$NewRRcH_{T(Ti)}^{Yk/Yi(Curr)}$	– new value of the upper boundary of a repo rate corridor with a security for settlement dates Tk/Ti in a settlement currency;
$NewRRcL_{Tk/Ti}^{Curr}$	– new value of the lower boundary of a repo rate corridor with a security for settlement dates Tk/Ti in a settlement currency;
$NewRRH_{Tk}$	– new value of the upper boundary of the evaluation range of the interest risk of the first level for the settlement date Tk calculated on the trading day (T);
$NewRRL_{Tk}$	– new value of the lower boundary of the evaluation range of the interest risk of the first level for a term Yk calculated on the trading day (T);

n_{IR}	–	period of prohibition on reduction of the interest risk and interest risk upon concentration, a risk parameter of a security subject to approval;
$PcH_{T/Tk}$	–	upper boundary of the price corridor of a security on the trading day (T) determined for the settlement date (Tk), where k is in the range from 1 to (Ti–T);
PcH_{max}	–	upper maximum value of deviations in order prices during a day (set in fractions), a risk parameter of a financial instrument subject to approval;
$PcL_{T/Tk}$	–	lower boundary of the price corridor of a security on the trading day (T) determined for the settlement date (Tk), where k is in the range from 1 to (Ti–T);
PcL_{max}	–	lower maximum value of order price deviations during a day (set in fractions), a risk parameter of the financial instrument subject to approval;
PH_{1T}	–	upper boundary of the evaluation range of market risks of the first level on the trading day (T);
PH_{1T}^{New}	–	new value of the upper boundary of the evaluation range of market risks of the first level;
PH_{2T}	–	upper boundary of the evaluation range of market risks of the second level on the trading day (T);
PH_{2T}^{New}	–	new value of the upper boundary of the evaluation range of market risks of the second level;
PL_{1T}	–	lower boundary of the evaluation range of market risks of the first level on the trading day (T);
PL_{2T}	–	lower boundary of the evaluation range of market risks of the second level on the trading day (T);
PL_{2T}^{New}	–	new value of the lower boundary of the evaluation range of market risks of the second level;
$P_{stlmntT}$	–	settlement bond price in percent of the par value determined subject to the Securities Evaluation Methodology;
P_T	–	settlement security price in Kazakh tenge;
p_T^j	–	settlement price of the j-th bond included in the Repo Basket in Kazakh tenge set on the date (T);
P_{Tk}	–	settlement price of a security that is a subject of a repo transaction determined on an opening date of a repo transaction (Tk);
$RateBase_{Curr}$	–	a base exchange rate of the foreign currency;
$RateNB_{CurrT}$	–	an official exchange rate of the National Bank of the Republic of Kazakhstan set on the trading day following a day of determination of the settlement price of the bond;
$RRcH_{T/Tk}$	–	the upper boundary of a repo rate corridor for the settlement date (Tk);
$RRcL_{T/Tk}$	–	the lower boundary of a repo rate corridor under a security for the settlement date (Tk);
R_{KZT}	–	a base rate of the National Bank of the Republic of Kazakhstan fixed at the time of calculation of risk parameters on the trading day T;
R_{USD}	–	a one-day SOFR rate for the USD according to data in external information sources at the time of calculation of risk parameters on the trading day T;
$RRcH_{Tk/Ti}^{Curr}$	–	the upper boundary of a repo rate corridor with a security of settlement dates Tk/Ti in a settlement currency;

$RRcH_Bskt_{Tk/Ti}$	– the upper boundary of a repo rate corridor of the Repo Basket for settlement dates Tk/Ti ;
$RRcL_{Tk/Ti}^{Curr}$	– the lower boundary of a repo rate corridor of a financial instrument for settlement dates Tk/Ti in a settlement currency;
$RepoCIs_{Ti}$	– a rate of the last "automatic" repo transaction with the settlement date (Ti) with settlements in the national currency on the trading day (T);
$RepoInd_{Ti}$	– value of an indicative repo rate with the settlement date (Ti), determined;
$RepoInd_{Tk}$	– an indicative repo rate with the key settlement date Tk ;
$RepoR_{Ti}$	– a settlement repo rate under a security with the settlement date (Ti) determined on the trading day (T);
$RepoR_{Ti(KZT)}$	– a settlement repo rate (in % per annum) with a security for the settlement date Ti with settlements in tenge;
$RepoR_{Tk(KZT)}$	– a settlement repo rate (in % per annum) with a security for the settlement date Tk with settlements in tenge;
$RepoR_{Yk}$	– a settlement repo rate under a security for a term $Yk=(Tk-T)$;
RR_{l_fi}	– a rate of market liquidity risk of repo transactions, a risk parameter subject to approval for a security;
RRH_{Tk}	– the upper boundary of the evaluation range of the interest risk of the first level for the settlement date Tk calculated on the trading day (T);
RRH_{Tk}^j	– the upper boundary of the evaluation range of the interest risk under the j -th bond included in the Repo Basket for the settlement date Tk calculated on the trading day (T);
RRH_Bskt_{Tk}	– the upper boundary of the evaluation range of the interest risk for the Repo Basket for the settlement date Tk calculated on the trading day (T);
RRL_{Tk}	– the lower boundary of the evaluation range of the interest risk of the first level of a security for the settlement date Tk calculated on the trading day (T);
$SD_{fm_{KZT}}$	– a settlement rate for tenge for the stock market;
$SD_{fm_{USD}}$	– a default settlement rate for USD for the stock market;
SDL_{sec}	– the lower boundary of a default settlement rate under a security, which is a risk parameter subject to approval;
SDH_{sec}	– a risk parameter subject to approval that boundaries a default settlement rate on a financial instrument from above;
$SDH_{div_{sec}}$	– an upper level of a default settlement rate on a financial instrument when paying dividends under shares;
Shift	– a coefficient that determines a size of shift in the boundaries, a risk parameter subject to approval;
$SwapCurr_{Ti}$	– settlement price of swap transactions with foreign currency with the settlement date Ti ;
$T0$	– the date of a transaction in the trading mode with a partial collateral;
T	– the date for which risk parameters are calculated;
T_{Ch}	– a period since the last change in a preliminary value of the interest risk;
Tk	– the date of settlement of discharge of obligations under a transaction in the trading mode with a partial collateral;
Ti	– a maximum date of settlement of discharge of obligations under a transaction in the trading mode with a partial collateral;

T_{likv}	–	a risk evaluation horizon upon concentration, a time period that is a fundamental parameter established by the Committee;
T_{RH}	–	a risk evaluation horizon, a time period that is a fundamental parameter established by the Committee;
V_{daily}	–	an average daily trading volume of a share on the stock market expressed in the number of securities;
V_{sum}	–	a total trading volume under a security on the stock market for a specified historical period in the number of securities;
$V_{j(Curr)}$	–	a trading volume of the j-th repo transaction in foreign currency with a security with the settlement date (T_i) in currency on the trading day (T);
$V_{j(KZT)}$	–	a trading volume of the j-th repo transaction with settlements in Kazakh tenge with the settlement date (T_k);
$V_{T(Curr,KZT)}$	–	a trading volume of repo transactions with the settlement date (T_i) in foreign currency on the trading day (T) converted into tenge at the base exchange rate of the foreign currency;
$WRepoR_{T_i}$	–	a weighted average aggregate repo rate with a security with the settlement date (T_i);
$WRepoR_{T_i(Curr,KZT)}$	–	a weighted average repo rate in currency VAL with the settlement date (T_i) determined on the trading day (T), expressed in tenge;
x_{IR}	–	a coefficient of ratio of a repo rate corridor to the interest risk evaluation range, a risk parameter subject to approval;
x_{IR_Bskt}	–	a coefficient of ratio of a repo rate corridor to the interest risk evaluation range for the Repo Basket, a risk parameter subject to approval;
σ	–	a volatility indicator calculated subject to Chapter 3 of the Methodology for determining risk parameters of financial instruments and fundamental parameters of the stock market: for calculation of growth/fall rates of the stock market risk, it is calculated based on a maximum relative deviation of security price ΔPT over the historical period; for calculation of the growth/fall rates of the interest risk, it is calculated based on a maximum absolute deviation of the repo rate for a key term (k) over the historical period. In this case, the sample ΔPT^* is formed by the following formula: $\Delta PT^* = \min_{T=0,...,TRH} \{ PT-PT-1;...;PT-PT_{RH} \}$, where positive and negative one-day absolute deviations shall be taken into account. When calculating the growth rates, a negative deviation shall be equal to a previous positive value of the corresponding period. Upon calculation of decline rates, a positive deviation shall be equal to a previous negative value of the corresponding deviation period;
σ_T^{Tk}	–	volatility of a settlement repo rate under a security for a certain settlement date (T_k) on the trading day (T);
α	–	a quantile of normal distribution of the corresponding confidence level, which is a fundamental parameter and established by the Committee for the stock market.

Appendix 3

to the Methodology for
determining risk parameters
of financial instruments

PARAMETERS

**for determination of risk parameters subject to approval and settlement risk
parameters of the currency market**

(this line was excluded by a decision of the Management Board of the Clearing Centre dated August 28, 2025)

ceiling	–	rounding up function to an integer value;
CentralRate _{Curr}	–	central exchange rate of foreign currency CentralRate _{Curr} ;
ConcR _{min}	–	minimum concentration rate on foreign currency;
ConcR _T	–	concentration rate of foreign currency on the trading day (T);
ConcR _{T-down}	–	fall rates of the settlement rate of the second-level foreign currency;
ConcR _{T-up}	–	growth rates of the settlement rate of the second-level foreign currency;
CONST _{KZT}	–	interest premium set by the Committee;
Curr	–	foreign currency: US dollar (USD) or Euro (EUR) or Russian ruble (RUB) or Chinese yuan (CNY);
FwdRate _{Ti/Tj}	–	settlement rate on foreign currency Curr1 in relation to currency Curr2 for foreign currency operations/currency swap transactions with settlement dates Ti/Tj;
H_ConcIR _{Tk}	–	growth rate of the interest risk upon foreign currency concentration calculated for each settlement date (Tk) on the trading day (T);
H_IR _{Tk}	–	growth rate of the interest risk of a foreign currency, calculated for a specific settlement date (Tk) on the trading day (T);
IndRateCUR _{T0/T2}	–	indicative rate of foreign currency operations with the settlement date of the opening deal on foreign currency operations T0 and the key settlement date T2;
IndRateCurr _{T1/T2}	–	indicative rate of foreign currency operations with the settlement date of the opening deal on foreign currency operations T1 and the key settlement date T2;
IndRateCurr _{T0/T2}	–	indicative rate of foreign currency operations with the settlement date of the opening deal on foreign currency operations T0 and the key settlement date T2;
IndRateCurr _{T0/T1}	–	indicative rate of foreign currency operations with the settlement date of the opening deal on foreign currency operations T0 and the key settlement date T1;
IndRateCurr _{T1/Tk}	–	indicative rate of foreign currency operations with the settlement date of the opening deal on foreign currency operations T1 and the key settlement date Tk;
IndRateUSD _{T0/T1}	–	indicative rate of USD operations with the settlement date of the opening deal on foreign currency operations T0 and the key settlement date T2;
IndRateUSD _{T0/T2}	–	indicative rate of USD operations with the settlement date of the opening deal on foreign currency operations T0 and the key settlement date T1;

$IR_{p_{Tk}}$	– preliminary value of the interest risk rate for a certain settlement date (Tk) on the trading day (T);
$IR_{p_{T-1}^{Tk}}$	– preliminary value of the interest risk rate on the settlement date (Tk) determined for a trading day (T-1);
L_{conc}	– foreign currency concentration boundary Curr expressed in amount of foreign currency;
$L_{Concl}R_{Tk}$	– fall rate of the interest risk upon foreign currency concentration, calculated for each settlement date on the trading day (T);
$L_{IR_{Tk}}$	– fall rate of the interest risk of foreign currency, calculated for a specific settlement date (Tk) on the trading day (T);
K_{conc}	– concentration coefficient which determines a maximum share of volume in foreign currency Curr from the average daily trading volume of this foreign currency that can be liquidated without a significant impact on the exchange rate of foreign currency Curr over the time period TRH;
k_{MRmin}	– minimum threshold level of the initial margin rate on foreign currency established by the Committee, given the terms and conditions established by agreements on provision of services of the provider for transactions with foreign currencies, and/or information about a significant change in a market situation, and/or information about increased market volatility (if any), and/or a level of additional types of risk that have a significant impact on the change in the exchange rate of foreign currency;
$MinH_{IR_{Tk}}$	– minimum growth rate of the interest risk on foreign currency;
$MinL_{IR_{Tk}}$	– minimum fall rate of the interest risk on foreign currency;
MR_{min}	– minimum initial margin rate on foreign currency;
MR_T	– initial margin rate of foreign currency on the trading day (T);
MR_{T-up}	– growth rates of the settlement rate of foreign currency of the first level;
MR_{T-down}	– fall rates of a settlement rate of foreign currency of the first level;
$MR_T^{Curr1/Curr2}$	– initial margin rate of a cross-currency pair on the trading day (T);
n_{IR}	– prohibition period for cut of the interest risk and interest risk upon concentration, a risk parameter of foreign currency subject to approval;
$NewRcH_T$	– new value of the upper boundary of a spot price corridor on the trading day (T);
$NewRcL_T$	– new value of the lower boundary of a spot price corridor on the trading day (T);
$NewRH_{1_T}$	– new value of the upper boundary of the evaluation range of market risks of the first level on the trading day (T);
$NewRL_{1_T}$	– new value of the lower boundary of the evaluation range of market risks of the first level on the trading day (T);
N_{trade}	– number of trading days in a historical period;
$Rate_{Curr_{Ti}}$	– foreign currency settlement rate Curr for the settlement date Ti;
RH_{1T}	– the upper boundary of the evaluation range of market risks of the first level on the trading day (T);
RH_{2T}	– the upper boundary of the evaluation range of market risks of the second level on the trading day (T);
RL_{1T}	– the lower boundary of the evaluation range of market risks of the first level on the trading day (T);

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RL_2T	– the lower boundary of the evaluation range of market risks of the second level on the trading day (T);
R_CNY	– overnight CNH HIBOR rate for yuan published in external information sources by the time of calculation of indicative rates of foreign currency operations;
R_KZT	– base rate of the National Bank of the Republic of Kazakhstan;
R_EUR	– overnight ESTER rate for euro published in external information sources by the time of calculation of indicative rates of foreign currency operations;
R_RUB	– overnight RUONIA rate for rubles published in external information sources by the time of calculation of indicative rates of foreign currency operations;
R_USD	– overnight SOFR rate for USD published in external information sources by the time of calculation of indicative rates of foreign currency operations;
RcH _{T-1}	– value of the upper boundary of a spot price corridor on the trading day (T-1);
RcL _{T-1}	– value of the lower boundary of a spot price corridor on the trading day (T-1);
RH_1 _{T-1}	– value of the upper boundary of the evaluation range of market risks determined on the trading day (T-1);
RL_1 _{T-1}	– value of the lower boundary of the evaluation range of market risks determined on the trading day (T-1);
RR _{I_curr}	– market liquidity risk rate for operations with foreign currency/ currency swap transactions on foreign currency Curr, a risk parameter subject to approval;
RRH _{Tk}	– the upper boundary of the evaluation range of the interest risk of the first level for the settlement date Tk calculated on the current trading day (T);
RRH_2 _{Tk}	– the upper boundary of the evaluation range of the interest risk of the second level of foreign currency for the settlement date Tk calculated on the trading day (T);
RRL _{Tk}	– the lower boundary of the evaluation range of the interest risk of the first level of foreign currency for the settlement date Tk calculated on the trading day (T);
RRL_2 _{Tk}	– the lower boundary of the evaluation range of the interest risk of the second level of foreign currency for the settlement date Tk calculated on the trading day (T);
SD _{CURR}	– default settlement rate for foreign currency CURR;
Shift	– coefficient which determines a size of shift of the boundaries, a risk parameter subject to approval;
Shift_H_IR _{Tj}	– value for the settlement date Tj of interest risk growth rates after the shift;
Shift_H_IR _{Tj} ^{Curr1}	– growth rate of the interest risk of foreign currency Curr1, calculated for a certain settlement date (Tk) on the trading day (T) after the shift;
Shift_L_IR _{Tj}	– value for the settlement date Tj of interest risk fall rates after the shift;
Shift_L_IR _{Tj} ^{Curr1}	– fall rate of the interest risk of foreign currency Curr1, calculated for a certain settlement date (Tk) on the trading day (T) after the shift;
SWAP-1D (USD)	– the yield indicator for USD/KZT currency swap transactions, which is the average yield, weighted by the volume of transactions, for all opening deals of the corresponding currency swap for a period of one business day, calculated by the Exchange in accordance with the internal document Methodology for calculating indicators for the current trading day (<i>this line was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025</i>);

SWAP-2D (USD)	– the yield indicator for USD/KZT currency swap transactions, which is the average yield, weighted by the volume of transactions, for all opening deals of the corresponding currency swap for a period of two business days, calculated by the Exchange in accordance with the internal document Methodology for calculating indicators for the current trading day (<i>this line was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025</i>);
SwapCurr _{Ti}	– settlement price of a foreign currency operation/ currency swap transaction with the settlement date of the closing deal Ti;
SwapCurr _{T0/T1}	– settlement price of foreign currency operations on instrument CURRKZT_0_001;
SwapCurr _{T0/T2}	– settlement price of foreign currency operations on instrument CURRKZT_0_002;
SwapCurr _{T0/Tj}	– settlement price of a foreign currency operation/ currency swap transaction in percent on the settlement date Tj;
SwapCurr _{T1/T2}	– settlement price of foreign currency operations on instrument CURRKZT_1_001;
Ti	– the settlement date of the opening deal on foreign currency operations/currency swap transactions (T0 or T1);
T0	– the settlement date of the closing deal of foreign currency operations/currency swap transactions Tk (hereinafter referred to as the key settlement date), corresponding to the settlement date of the closing deal of foreign currency operations/currency swap transactions with standardized terms established subject to the internal document of the Exchange "Specification of currency swap transactions and foreign currency operations";
TCh	– term from the last change in the preliminary value of the interest risk;
TRH	– risk evaluation horizon, a time period that is a fundamental parameter established by the Committee;
Tlikv	– risk evaluation horizon upon concentration, a time period that is a fundamental parameter established by the Committee;
V _{daily}	– an average daily trading volume in foreign currency Curr expressed in the amount of foreign currency;
V _{sum}	– total trading volume in foreign currency Curr;
Y _{KZT} _{T2}	– value of the settlement rate of yield on government securities of the Republic of Kazakhstan (hereinafter – the GS RK) for a key term corresponding to the date of calculation of the yield indicator of two-day currency swap transactions Curr/KZT (Y _{KZT} _{T2});
Y _{Curr} _{T2}	– value of the settlement rate of yield on government securities of foreign countries for a key term corresponding to the date of calculation of the yield indicator of two-day currency swap transactions Curr/KZT;
Y _{KZT} _{Tk}	– value of the settlement rate of yield on government securities of the Republic of Kazakhstan for a key term corresponding to the date of calculation of the yield indicator of two-day currency swap transactions Curr/KZT;
Y _{Curr} _{Tk}	– indicative settlement rate of yield on foreign government securities in the relevant currency Curr for each key maturity Tk determined by the method of linear interpolation of extreme values of rates of return on foreign government securities published on the official information resource of the authorized agency of the country of the issuer of foreign currency, relative to the corresponding key maturity Tk;

Zwa	– spread of yield of the group of bonds, which includes government securities issued by the Ministry of Finance of the Republic of Kazakhstan, to the risk-free yield curve of bonds in the denomination currency Curr determined subject to the internal regulatory document of the Exchange "Methodology for Evaluation of Securities";
$\beta_{0_{KZT}}, \beta_{1_{KZT}}, \beta_{2_{KZT}}, \tau_{KZT}$	– parameters of the Nelson-Siegel model, determined in accordance with the Methodology for determining the yield function of government securities of the Republic of Kazakhstan <i>(this line was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025)</i> ;
$\beta_{0_{curr}}, \beta_{1_{curr}}, \beta_{2_{curr}}, \tau_{curr}$	parameters of the Nelson-Siegel model, determined in accordance with Article 11 of this Methodology <i>(this line was changed by a decision of the Management Board of the Clearing Centre dated August 28, 2025)</i> ;
α	– quantile of the normal distribution of the corresponding confidence level, which is a fundamental parameter and established by the Committee for the currency market;
σ	– settlement volatility of a maximum relative deviation of the foreign exchange rate for a historical period calculated subject to Chapter 3 of the Methodology for determining risk parameters of financial instruments and fundamental parameters of the currency market established by the Committee;
σ_T^{Tk}	– volatility of settlement prices of foreign currency operations/currency swap transactions in percent for a specific settlement date (Tk) on the trading day (T).

Appendix 4

to the Methodology for
determining risk parameters
of financial instruments

PARAMETERS

for determination of risk parameters subject to approval and settlement risk parameters of the derivatives market

BoundsWdn(UA)	–	sign of automatic shift of a derivative financial instrument price corridor boundary to the underlying asset, takes the values "Y" and "N", by default the specified parameter takes the value "Y";
CentralRateCurr	–	central foreign exchange rate CentralRateCurr;
ConcR _{cur} (UA)	–	current minimum limiting level of a concentration rate;
ConcR _{min}	–	minimum concentration rate of a derivative financial instrument;
CP _{futT} (UA, Num)	–	risk calculation center of the derivative financial instrument (Num) on the underlying asset (UA), equal to the settlement price of the derivative financial instrument (Num) on the underlying asset (UA) before shifts determined based on results of day T;
CP _{futT} (UA, Num,new)	–	risk calculation center of a derivative financial instrument (Num) on the underlying asset (UA), equal to the settlement price of the derivative financial instrument (Num) on the underlying asset (UA) before shifts determined based on results of day T;
D_IR _{cur} (UA, Num)	–	current risk rate of falling interest rates of the derivative financial instrument in percent per annum;
Div	–	dividend amount on the record date;
F_Spread	–	spread between the underlying asset's price and prices of futures received from external information systems with the closest expiry dates, in percent on the settlement date T _{expir} ;
F _R (UA, Num)	–	width of the price corridor in fractions for each underlying asset (UA) and each derivative financial instrument (Num), a risk parameter subject to approval;
H_IR(UA, Num)	–	upper boundary of the evaluation range of interest risks of a derivative financial instrument (NUM) on the underlying asset (UA);
L _{concKASE}	–	concentration boundary for a derivative financial instrument where its underlying asset is KASE Index;
L _{conc_i}	–	concentration boundary of the i-th financial instrument included in KASE Index;
L_IR(UA, Num)	–	lower boundary of the evaluation range of interest risks of a derivative financial instrument (NUM) on the underlying asset (UA);
LB(UA, Num)	–	deviation from the risk calculation center for lower boundaries of the first and/or second level price corridor of a derivative financial instrument;
LB_1(UA, Num)	–	deviation from the risk calculation center for the lower boundary of the price corridor of the first level of a derivative financial instrument;

$LB_2(UA, Num)$	–	deviation from the risk calculation center for the lower boundary of the price corridor of the second level of a derivative financial instrument;
$MinM_IR_{Tk}$	–	minimum growth/ fall rate of the interest risk of a derivative financial instrument;
$minP_T(UA)$	–	minimum value of the price of the underlying asset of a derivative financial instrument, on the basis of which the range of scenarios for changes in the price of a derivative financial instrument on the trading day T is determined;
$MinS(UA)$	–	minimum change in the price of a derivative financial instrument determined subject to the specification of a derivative financial instrument for the corresponding underlying asset;
$MinSP(UA)$	–	value of the minimum change in the price of a derivative financial instrument determined subject to the specification of a derivative financial instrument for the corresponding underlying asset;
MR_{min}	–	minimum initial margin rate of a derivative financial instrument;
$MR_{cur}(UA)$	–	current minimum limiting level of the initial margin rate;
$MR_{cur}(UA)_{new}$	–	recalculated minimum initial margin rate of a derivative financial instrument for the underlying asset;
$MR_{min}(UA)$	–	minimum initial margin rate of a derivative financial instrument for the underlying asset;
Num	–	serial number of a derivative financial instrument, assigned for derivative financial instruments for one underlying asset in ascending order of the date of the last trading day of the specified financial instrument;
P_{clearT}	–	clean settlement price of the underlying asset as of the date of calculation of the settlement price of a derivative financial asset (T);
P_{divT}	–	value of dividends given on the date of determination of the settlement price of a derivative financial instrument (T);
P_{EXT}	–	settlement price of the exchange commodity or crypto currency, which is the underlying asset of a derivative financial instrument, in Kazakh tenge;
P_{futT}	–	settlement price of a derivative financial instrument on the date determined based on results of a day T;
P_{futT-1}	–	price of the futures contract, closest in terms of execution to T_{expir} obtained from external sources, for which the execution period is less than T_{expir} ;
P_{futT+1}	–	price of the futures contract, closest in terms of execution to T_{expir} obtained from external sources, for which the execution period is greater than T_{expir} ;
$P_{futT}(UA, Num)$	–	settlement price of a derivative financial instrument (NUM) for an underlying asset (UA) determined based on results of the day T;
$P_{NormT}(UA, Num)$	–	settlement price of the underlying asset of a derivative financial instrument determined based on results of a clearing session, reduced to the dimension of the settlement price of the derivative financial instrument;
$P_T(UA)$	–	settlement price of the underlying asset of a futures contract determined based on results of a clearing session, reduced to the dimension of a futures contract;

$PcH_{fut}(UA, Num)$	–	the upper boundary of the price corridor of a derivative financial instrument (NUM) on the underlying asset (UA);
$PcH_{fut}(UA, Num, new)$	–	the recalculated upper boundary of the price corridor of a derivative financial instrument (NUM) on the underlying asset (UA);
$PcL_{fut}(UA, Num)$	–	the lower boundary of the price corridor of a derivative financial instrument (NUM) on the underlying asset (UA);
$PcL_{fut}(UA, Num, new)$	–	the recalculated lower boundary of the price corridor of a derivative financial instrument (NUM) on the underlying asset (UA);
$PH_1(UA, Num)$	–	the upper boundary of the evaluation range of market risks of the first level of a derivative financial instrument (NUM) on the underlying asset (UA);
$PH_2(UA, Num)$	–	the upper boundary of the evaluation range of market risks of the second level of a derivative financial instrument (NUM) on the underlying asset (UA);
$PL_1(UA, Num)$	–	the lower boundary of the evaluation range of market risks of the first level of a derivative financial instrument (NUM) on the underlying asset (UA);
$PL_2(UA, Num)$	–	the lower boundary of the evaluation range of market risks of the second level of a derivative financial instrument (NUM) on the underlying asset (UA);
R_i	–	the limiting coefficient determined subject to the Methodology for calculation of stock market indicators;
$RB(UA, Num)$	–	deviation from the risk calculation center for the upper boundaries of the price corridor of the first and/or second level of a derivative financial instrument.
$RB_1(UA, Num)$	–	deviation from the risk calculation center for the upper boundary of the price corridor of the first level of a derivative financial instrument;
$RB_2(UA, Num)$	–	deviation from the risk calculation center for the upper boundary of the price corridor of the second level of a derivative financial instrument;
$RR(UA, Num)$	–	boundary of the range of risks of deviations from the risk calculation center for upper and lower boundaries of the price corridor of the derivative financial instrument (NUM) on the underlying asset (UA);
$RR(UA, Num, new)$	–	recalculated boundary of a range of risks of deviations from the risk calculation center for upper and lower boundaries of the price corridor of a derivative financial instrument (NUM) for the underlying asset;
$SpotPrice$	–	value of the underlying asset on day T determined subject to the specification of the corresponding futures;
$SwapCurr_{T/T_{fix-2}}$	–	settlement price of a foreign currency operation/currency swap transaction in percent on the settlement date T_{fix-2} ;
$SwapCurr_{T/T_{expir}}$	–	settlement price of a foreign currency operation/currency swap transaction in percent on the settlement date T_{expir} ;
T	–	date of determination of the settlement price of a derivative financial instrument;
T_{expir}	–	date of execution of a derivative financial instrument;
T_-	–	the date of settlement of a futures closest in maturity to T_{expir} obtained from external sources, for which the futures maturity is less than T_{expir} ;

T_+	–	date of execution of a futures closest in maturity to T_{expir} obtained from external sources, for which the futures maturity is greater than T_{expir} ;
T_n	–	date of execution of a futures contract with the closest maturity date to T_{expir} obtained from external sources;
$T_{\text{fix}-2}$	–	date corresponding to two business days before the record date;
$U_IR_{\text{cur}}(UA, \text{Num})$	–	current rate of the interest risk of a derivative financial instrument in percent per annum.
α	–	quantile of normal distribution of the corresponding confidence level, which is a fundamental parameter and established by the Committee for the derivatives market;
σ	–	volatility indicator calculated subject to Chapter 3 of the Methodology for determining risk parameters of financial instruments and fundamental parameters of the derivatives market: in order to calculate growth/fall rates of the market risk, it is calculated based on a maximum relative deviation of the price of the underlying asset of a derivative financial instrument over the historical period; in order to calculate growth/fall rates of the interest risk, it is calculated based on: for derivative financial instruments where their underlying asset is shares, KASE Index, a maximum absolute deviation of the indicative ZCYC of the par value currency for key terms of derivative financial instruments; for derivative financial instruments where their underlying asset is foreign exchange rates against the tenge, the maximum absolute deviation of settlement prices of foreign currency operations/currency swap transactions in percent for corresponding key terms of derivative financial instruments;
$\tau(\text{Num})$	–	period of time from the current date to the last day of circulation of a derivative financial instrument (Num) expressed in fractions of a year, it is calculated as a number of calendar days in the specified period divided by 365.