KASE CLEARING CENTRE JSC

A p p r o v e d

by decision of the Management Board of KASE Clearing Centre JSC

(minutes of the meeting dated July 31, 2024, No. 15)

Effective

from September 15, 2024

METHODOLOGY

for determining the stress collateral amount

Almaty

2024

This Methodology has been developed in accordance with the Rules for Clearing Activities for Transactions with Financial Instruments (hereinafter, the Clearing Rules), other internal documents of KASE Clearing Centre JSC (hereinafter, the Clearing Centre) in order to reduce risks and defines the procedure for determining an individual amount of collateral for fulfillment of net obligations for transactions with financial instruments on the stock and foreign exchange markets, contributed by a clearing participant as a stress collateral.

Chapter 1. GENERAL PROVISIONS

1. This Methodology uses terms defined by the Clearing Rules and other internal documents of the Clearing Centre, as well as:
   1) **single limit** – a value expressed in tenge, measuring the sufficiency of collateral on the trading and clearing account of a clearing participant in the stock and foreign exchange markets, necessary for submitting of orders and concluding of partially secured transactions;
   2) **stress collateral** – individual collateral of a clearing participant in the stock and foreign exchange markets, determined by the Clearing Centre using risk parameters for stress in order to cover the credit and market risks as well as systemic risk in transactions with financial instruments;
   3) **responsible unit** – Market Risk Department of the Clearing Centre;
   4) **systemic risk** – a risk formed as a combined risk including liquidity risk, credit and market risks, risk of losses arising due to insolvency of one or more clearing participants due to external factors, including deterioration of macroeconomic situation, which led to insufficiency of the formed collateral for major positions of clearing participants;
   5) **Committee** – The Market Risk Committee that is a permanent collegial body under the Clearing Centre's Management Board, which task is to analyze, monitor, identify and manage the risks in financial markets, activities of clearing participants, issuers and investors, as well as prepare recommendations for the Clearing Centre's Management Board (hereinafter, the Management Board);
   6) **NIGS** – non-indexed government securities of the Republic of Kazakhstan issued by the Ministry of Finance of the Republic of Kazakhstan or the National Bank of the Republic of Kazakhstan, denominated in the national currency;
   7) **stress risk parameters** – the concentration and initial margin stress rates for financial instruments of the stock and foreign exchange markets, calculated by the Clearing Centre in the manner defined by this Methodology.
2. Determination of a clearing participant's stress collateral amount is carried out by the responsible unit on a weekly basis in the manner determined by this Methodology.
3. The responsible unit may request from other units the information necessary for calculating the stress collateral, which is provided within the timeframe specified in the request.
4. This Methodology does not apply to a clearing participant that has been assigned the "full coverage" category in accordance with the Clearing Centre's internal document – the Regulations on Clearing Participants (a clearing participant is subject to the requirement to fully cover its obligations on each settlement date in those financial instruments in which these obligations arise).

Chapter 2. CALCULATION OF STRESS RISK PARAMETERS

5. Calculation of risk parameters of financial instruments is carried out in the manner defined by the Clearing Centre's internal document – the Methodology for Determining the Risk Parameters of Financial Instruments (hereinafter, the Methodology for Determining the Risk Parameters), taking into account the specifics of the procedure for calculating the stress risk parameters in accordance with this Methodology.

6. To determine the amount of stress collateral, the responsible unit on a quarterly basis calculates the stress risk parameters established by the Committee.

7. The concentration and initial margin stress rates for financial instruments formed into groups and their subgroups according to this Methodology are calculated using the formula:

$$MR_{\text{stress}} = min(\max(celing(MR * (1 - Conct\ W) + \Delta P_{axm}^{*}\ Conct\ W); MR); 100\%),$$

$$ConcR_{\text{stress}} = \min(\max(celing(ConcR * (1 - Conct\ W) + \Delta P_{axm}^{*}\ Conct\ W); ConcR); 100\%),$$

where:

MR_{stress} – initial margin stress rate for a security or a foreign currency;

$ConcR_{\text{stress}}$ – concentration stress rate for a security or a foreign currency;

$Conct\ W$ – constant value equal to 25% of the weight of stress observations over a retrospective period of 10 (ten) years;

ΔP_{max} – maximum deviation in the value of financial instruments (currency pair rates for foreign currencies) for a retrospective period, calculated taking into account the order of distribution of financial instruments into groups and subgroups, as provided in paragraphs 8-16 of this Methodology;

MR – current initial margin rate;

$ConcR$ – current concentration rate;

$\min$ – function that calculates the minimum value of a numerical series;

$\max$ – function that calculates the maximum value of a numerical series;

$celling$ – function for rounding up to an integer value.

8. To calculate the maximum deviation of a financial instrument value (currency pair rates for foreign currencies) for a retrospective period ($\Delta P_{\max}$), financial instruments are formed into the following groups:

   1) debt securities;

   2) other financial instruments, except for debt securities (hereinafter, other financial documents);

   3) foreign currencies (euro, US dollar, Chinese yuan, Russian ruble).

9. In each of the groups of financial instruments specified in paragraph 8 of this Methodology, the following is done for financial instruments:

   1) a sample of settlement prices and/or market prices and/or indicative prices of securities is formed, expressed in tenge, as well as exchange rates of currency pairs over a ten-year period (T-3650), taking into account the accumulated coupon income for the "debt securities" group, and not taking into account the accumulated coupon income for the "other financial instruments" group;

   2) calculation of values of two-day price deviations (for securities) and exchange rates of currency pairs (for foreign currencies).

10. Financial instruments in the "debt securities" group are grouped into subgroups in terms of maturity ranges (terms to maturity) established by this paragraph according to the following parameters:

    1) by the coupon rate indexing method;

    2) by indexation possibility;

    3) by a sector of the official list;

    4) by a type of coupon rate;

    5) on payment of remuneration;

    6) by issue currency or quotation currency;

    7) by credit rating of a debt security issuer, assigned by Standard & Poor's or Moody's Investors Service or Fitch rating agencies (hereinafter, the credit rating).

    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;

    – 2,160 or more days to maturity.

11. Within each subgroup of financial instruments of the "debt securities" group as specified in paragraph 10 of this Methodology, the following is carried out:

    1) selection of the maximum value of two-day price deviation;

    2) ranking the values of maximum two-day price deviation of each subgroup of debt securities in terms of maturity ranges and credit ratings.

    If after the ranking specified in subparagraph 2) of paragraph 11 of this Methodology, the value of maximum price deviation of a certain maturity range with a lower credit rating is less than the value with a higher credit rating, then such value is assigned a value equal to the maximum price deviation with a higher rating.

12. Within the subgroups of financial instruments of the "debt securities" group as specified in paragraph 10 of this Methodology, taking into account the value of maximum price deviation obtained based after the ranking specified in paragraph 11 of this Methodology, $\Delta P_{\max}$ is determined by adding the values of maximum price deviation for NIGS with the values of maximum price deviation of each subgroup, 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.

    For debt securities which coupon indexation is carried out taking into account the TONIA indicator, $\Delta P_{\max}$ is determined by adding the volatility value of the TONIA indicator, determined according to the Methodology for Determining the Risk Parameters, to the value of maximum price deviation for NIGS in terms of maturity ranges.

13. KASE Global's financial instruments belonging to the "other financial instruments" group are grouped into subgroups according to the following parameters:

    1) by quotation currency;

    2) in accordance with the key areas of a company's activities, developed by MSCI and S&P Dow Jones Indices.

14. Financial instruments: ETFs, depositary receipts, shares, units, ETF which underlying asset are cryptocurrencies, belonging to the "other financial instruments" group are grouped into subgroups according to the following parameters:

1) by quotation currency;

2) by type: common or preferred (in case of shares);

3) by the Exchange market in accordance with the Exchange's official list;

4) by category of the Exchange markets in accordance with the Exchange's official list.

15. Within the subgroups of financial instruments of the "other financial instruments" group as specified in paragraphs 13 and 14 of this Methodology, $\Delta P_{\max}$ is determined as equal to the maximum value of two-day price deviation.

16. For financial instruments of the "foreign currencies" group, $\Delta P_{\max}$ is determined as equal to the maximum value of two-day deviation of the exchange rates of currency pairs for each foreign currency (euro, US dollar, Chinese yuan, Russian ruble).

Chapter 3. DETERMINING THE STRESS COLLATERAL AMOUNT

17. The responsible unit monitors the open positions of clearing participants on a weekly basis on the first working day of the week, both for individual market participants and for groups of their affiliates.

18. The responsible unit calculates the single limit on the trading and clearing accounts of a clearing participant on a weekly basis on the first working day of the week, with application of stress risk parameters (MR $_{stress}$ and ConcR $_{stress}$).

Based on results of the single limit calculating, the amount of stress collateral is formed, equal to the margin call amount.

A margin call occurs for a clearing participant if after applying the stress risk parameters, the single limit for its trading and clearing account becomes negative.

19. As of 10:00 on the first working day of the week, the amount of stress collateral is determined for a clearing participant's trading and clearing account, for its delivery by the clearing participant before 14:00 of the next first working day of the week.

20. On the date of stress collateral provision by a clearing participant, the Clearing Centre sets a limit on the non-decreasing value of the single limit for transactions with financial instruments, taking into account a stress collateral amount.

21. A stress collateral amount is reflected in a stress collateral report and sent to the clearing participant by 11:00 on the first working day of the week on which the stress collateral amount was determined.

22. The provision of stress collateral by a clearing participant is carried out in the manner and within the timeframe specified by the Clearing Rules.

23. In the event of a clearing participant's failure to deliver the stress collateral within the timeframe established by paragraph 19 of this Methodology, the Clearing Centre shall apply one of the following measures to such clearing participant:

1) the clearing participant is declared insolvent in accordance with subparagraph 2) of paragraph 1 of Article 37 of the Clearing Rules;

2) changing the clearing participant's category to "full coverage".

24. Proposals on the measures taken in relation to a clearing participant, specified in paragraph 23 of this Methodology, and on their validity periods are submitted by the responsible unit to the Committee and determined by the Committee following the consideration.

25. A stress collateral is released following the weekly monitoring of open positions of a clearing participant and calculation of the single limit for its trading and clearing accounts with application of the stress risk parameters, if the single limit value is no more negative.

26. The Clearing Centre's use of stress collateral is carried out based on

decision of the Management Board on the Committee's recommendation given following the consideration of the responsible unit's proposal.

Chapter 4. FINAL PROVISIONS

27. Responsibility for implementation of this Methodology and introduction of amendments to it is assigned to the responsible unit.

28. This Methodology shall be updated as necessary, but at least once every three years counted from the date of approval of this Methodology.

Chairperson of the Management Board **N. Khoroshevskaya**