KAZAKHSTAN STOCK EXCHANGE JSC

A p p r o v e d

by the resolution of the Management Board
of Kazakhstan Stock Exchange JSC

(meeting minutes
No. 27 dated March 20, 2018)

Effective as of

October 1, 2018

METHODOLOGY

for Determining the Size of Clearing Funds;

city of Almaty

2018

LIST OF AMENDMENTS

1. Amendments No. 1:

– approved by a decision of the Management Board of Kazakhstan Stock Exchange JSC (meeting minutes No. 106 of September 25, 2018);

– effective as of October 1, 2018.

This Methodology is developed in accordance with the Law of the Republic of Kazakhstan "On the Securities Market", the Clearing Rules for Transactions with Financial Instruments approved by the resolution of the Management Board of the National Bank of Kazakhstan No. 58 dated February 24, 2012, the Rules for the Implementation of the Activities of a Central Counterparty approved by the resolution of the Management Board of the National Bank of Kazakhstan No. 10 dated January 28, 2016, the Requirements for the Risk Management System of a Clearing Organization, the Terms and Procedures for Monitoring, Controlling and Managing Risks in a Clearing Organization approved by the Management Board of the National Bank of Kazakhstan No. 59 dated February 24, 2012, the Requirements for Risk Management System of a Central Counterparty, Conditions and Procedures for Monitoring, Controlling and Managing Risks of a Central Counterparty approved by the resolution of the Management Board of the National Bank of Kazakhstan No. 11 dated January 28, 2016 and internal documents of the Kazakhstan Stock Exchange (hereinafter referred to as the Exchange) and establishes the procedure for determining and assessing the size of the clearing funds.

Chapter 1. GENERAL PROVISIONS

1. This Methodology uses concepts defined by the laws and regulations of the Republic of Kazakhstan, internal document of the Exchange "Clearing Rules for Transactions with Financial Instruments"[1]
(hereinafter, Clearing Rules) and other internal documents of the Exchange.
2. This Methodology is used to determine and estimate the sufficiency of clearing funds formed in the markets, where the Exchange conducts clearing activities.
3. Clearing fund for any certain exchange market consists of the following types of funds:
   1) clearing guarantee fund formed using contributions of clearing members (hereinafter, CM);
   2) Clearing reserve fund is formed at the expense of the Exchange's own funds
4. The minimum size of the clearing fund, which is the total value of clearing guarantee and clearing reserve funds, of any exchange market is calculated as the amount of possible potential losses arising in the event of default on obligations of the two CM with the largest volume of these liabilities.
5. the Exchange uses information on financial instruments (hereinafter, the FI) in the respective exchange markets for calculating statistical risk parameters to estimate the size of clearing funds.
6. Fundamental parameters are used to assess statistical risk parameters and are a set of the following parameters:
   1) historical sampling period;
   2) level of trust.
7. Fundamental parameters are set by the Market Risk Committee and are reviewed in accordance with the deadlines set by the Clearing Rules.
8. In the absence of the necessary data for the period under review, the Exchange has the right to assess the size of clearing funds on other available data with similar parameters.
9. The adequacy of clearing funds is assessed within the time frame set by the Clearing Rules.
10. The values calculated are rounded up to two decimal places according to the rules of mathematical rounding (the numbers under five are reduced to zero, and the numbers equal to five or above are increased to ten).
11. (This sub-item has been excluded by the decision of the Management Board of Exchange of September 5, 2018);

[1] Approved by the decision of the Board of Directors of the Exchange (meeting minutes No. 20 dated July 20, 2017).

12. (This sub-item has been excluded by the decision of the Management Board of Exchange of September 5, 2018);

13. (This sub-item has been excluded by the decision of the Management Board of Exchange of September 5, 2018);

Chapter 2. CALCULATION OF INDICATORS OF MAJOR CLEARING MEMBERS

14. A sample of relative changes in market prices of FIs based on fundamental parameters established by the Market Risk Committee is formed to assess the size of potential losses arising from non-performance of obligations on the FIs of the same type.

15. The FIs of the same type mean all transactions made on a certain exchange market with a certain FI for a certain settlement currency for all settlement dates.

16. To estimate the size of potential losses, the maximum value of the deviation of the market price between trading days T – (T-1), and T– (T-2) is determined according to the formula:

, where

ΔP_T – value of the sample formed, i.e. an absolute change in the market price on the trading day T from the market price on the trading day T-1 and the market price on the trading day T-2 in share terms;

max – a mathematical function that determines the biggest of the values indicated in parentheses;

P_T – weighted average market price of FI on trading day T;

P_{T-1} – weighted average market price of FI on trading day T-1;

P_{T-2} – weighted average market price of FI on trading day T-2;

17. Based on the sample obtained under paragraph 16, the days with ten largest relative changes in market prices of FI of the same type (hereinafter, the sample ΔP_{10max}) according to the formula:

$$\Delta P_{10max} = (\Delta P_{maxT1}, \Delta P_{maxT2}, \ldots, \Delta P_{maxT10})$$, where:

ΔP_{10max} – The values of the sample being formed, i.e. the days with the largest relative changes in market prices for the FIs of the same type;

ΔP_{maxT1} – the first day with the largest relative change in the market price of the FI of the same type;

ΔP_{maxT2} – the second day with the largest relative change in the market price of the FIs of the same type;

...

ΔP_{maxT10} – the tenth day with the largest relative change in the market price of the FIs of the same type;

18. The average daily open positions of the two major CMs on the sample ΔP_{10max} is determined as follows:

1) for each of the ten days, the amount of absolute values of open positions for all FIs of the same type for each CM for a particular exchange market is calculated according to the formula:

$$\sum_{T1}^{T10} ОП^{k}(\Delta P_{10max}) = (abs(ОП^{k}_{ФИ1}) + abs(ОП^{k}_{ФИ2}) + \ldots + abs(ОП^{k}_{ФИn}))$$, where:

abs – a mathematical function that determines the absolute value (module) of the numbers specified in the parentheses;

$ОП^{k}_{фи}$ – open position of CM – net position of the CM on all claims and obligations of FIs of the same type expressed in tenge resulting from the deals with FIs of the same type made by CM at the end of the trading day;

k – CM;

2) for each of the ten days, the amount of the largest open positions of the two CMs on sampling ΔP_{10max} is determined by the formula:

$$\max\limits_{T1}^{T10} ОП2 = ОП^{k1}_{T} + ОП^{k2}_{T}, \text{ where:}$$

$maxОП2_{T}$ – the sum of the largest open positions of the two CMs on trading day T expressed in tenge;

k1, k2 – CM with the largest open positions on the trading day T;

3) the average daily position of the two large CMs on the sampling ΔP_{10max} on a particular exchange market is calculated according to the formula:

$$maxОП2 = \frac{(\sum\limits_{T1}^{T10} maxОП2)}{10}, \text{ where:}$$

maxOP2 – the average daily position of the two large CMs expressed in tenge.

19. Possible losses in non-performance of obligations by the two largest CMs are determined as follows:

1) for each of the ten days, the amount of CM's losses is determined with the two largest open positions on the sampling $P\Delta P_{10max}$ by the formula:

$$\max\limits_{T1}^{T10} LOSS2 = \Delta P_{T} \times (ОП^{k1}_{T} + ОП^{k2}_{T}), \text{ where:}$$

$maxLOSS2_{T}$ – the amount of losses of the two CMs with the largest open positions on the trading day T expressed in tenge;

k1, k2 – clearing members with the largest open positions on the trading day T expressed in tenge;

$ОП^{k}_{T}$ – open position of CM on the trading day T expressed in tenge;

2) the average daily losses of the two CMs with the largest open positions on the sampling ΔP_{10max} on a particular exchange market are calculated according to the formula:

$$maxLOSS2 = \frac{\sum\limits_{T1}^{T10} LOSS2_{T}}{10}, \text{ where:}$$

maxLOSS2 – average daily losses of the two CMs with the largest open positions on the sampling ΔP_{10max}, expressed in tenge.

20. The average daily amount of claims to margin collateral of CMs with the two largest open positions in the sampling ΔP_{10max} on a particular exchange market is determined as follows:

1) for each of the ten days, the amount of claims to margin collateral of CMs with the two largest open positions on sampling ΔP_{10max} on a particular exchange market is determined by the formula:

$$maxMC2 = \sum\limits_{T1}^{T10} (MC^{k1}_{T} + MC^{k2}_{T}), \text{ where:}$$

maxMC2 – the amount of claims to margin collateral of CM with the two largest open positions on sampling ΔP_{10max} expressed in tenge;

k1, k2 – clearing members with the largest open positions on the trading day T expressed in tenge;

MC_T^k – the claim to margin collateral of CM on the trading day T, expressed in tenge;

2) the average daily sum of claims to margin collateral of CMs with the two largest open positions in the sampling ΔP_{10max} on a particular exchange market is determined according to formula:

$$maxMC2 = \frac{\sum_{T1}^{T10} MC2_T}{10}, \text{ where:}$$

maxMC2 – average daily sum of margin collateral of the two CMs with the two largest open positions on the sampling ΔP_{10max} expressed in tenge.

Chapter 3. CALCULATION OF THE SIZE OF CLEARING FUNDS

21. The size of the clearing guarantee fund on any exchange market is calculated according to the following formula:

$$GF = max\left\{GV * N; \sum_{1}^{N} MC * 10\%\right\}, \text{ where:}$$

GF – the size of the clearing reserve fund of a particular exchange market;

GV – the minimum contribution of the CM approved by the Market Risk Committee;

max – a mathematical function that determines the biggest of the values indicated in parentheses;

MC – average daily amount of claims on the margin collateral for transactions to all clearing members of a particular exchange market over the past year;

N – number of CMs on a particular exchange market.

22. The size of the clearing guarantee fund on a particular exchange market is calculated according to the following formula:

$$RF = maxLOSS2 - GF - maxMC2, \text{ where:}$$

RF – The size of the clearing reserve fund of a particular exchange market;

maxMC2 – daily average margin collateral of CM with the two largest open positions in the days with maximum market price deviations.

The designations maxLOSS2 and GF are set by sub-item 2) of item 19 and item 21 of this Methodology, respectively.

Chapter 4. FINAL PROVISIONS

23. The Clearing Unit shall be responsible for making changes and amendments to this Methodology in a timely manner.

24. This Methodology should be updated as required but at least once every three years.

Chairman of the Management Board Alina Aldambergen