KAZAKHSTAN STOCK EXCHANGE JSC

A p p r o v e d

by a decision of the Board of Directors
of Kazakhstan Stock Exchange JSC

(minutes No. 19 of the meeting
on June 9, 2020)

Effective

from the date of commissioning of the second
release of the trading and clearing system
ASTS+ on the stock market

M E T H O D O L O G Y
of securities valuation

Almaty

2020

LIST OF AMENDMENTS

1. **Changes and additions No. 1:**

– approved by a decision of the Board of Directors of Kazakhstan Stock Exchange JSC (minutes No. 29 of the meeting on July 29, 2020);

– effective from August 3, 2020.

1. **Changes and additions No. 2:**

– approved by a decision of the Board of Directors of Kazakhstan Stock Exchange JSC (minutes No. 39 of the meeting on November 11, 2020);

– effective from November 16, 2020.

This Methodology defines the procedure for valuation of securities:

1) for determining settlement prices on financial instruments of the stock market used when Kazakhstan Stock Exchange JSC (hereinafter – the Exchange) carries out activities of organizing trades and clearing activities on deals in financial instruments (as these activities are determined by the Act of Republic of Kazakhstan "On the Securities Market"), including those used for determining the value of securities being the subject of "repo" transactions;

2) for the recognition of settlement prices as market or indicative prices of securities, depending on the availability of market information when determining the settlement prices of securities;

3) for other purposes as provided for in internal documents of the Exchange.

Chapter 1. GENERAL PROVISIONS

1. This Methodology uses the concepts that are defined by this Methodology, internal documents of the Exchange "Methodology for calculating the yield of bonds and the amount of transactions in bonds" and "Methodology for determining the risk parameters of financial instruments" (hereinafter – the Methodology for risk parameters), as well as other internal documents of the Exchange.

2. Terms and designations used in this Methodology have the following meaning:

    1) "**GS**" – (depending on the context) a government security or government securities;

    2) "**MCI**" – the monthly calculation index used for calculation of allowances and other social benefits, as well as for applying penalties, taxes and other payments in accordance with the laws of the Republic of Kazakhstan, whose value is set by acts of the Republic of Kazakhstan regulating the republican budget for the corresponding year;

    3) "**IFI**" – an international financial institution (international financial institutions);

    4) **working day** – a working day in the Republic of Kazakhstan;

    5) **Authorized body** – a government body for regulation, control and surveillance of the financial market and financial organizations;

    6) **Committee** – the Committee on market risks, a permanent collegial body of the Exchange's Management Board, created by a decision of the Exchange's Management Board, whose task is to analyze, monitor, identify and manage risks associated with the situation in the financial markets, the procedure for the formation and implementation of activities of which is determined by an internal document of the Exchange;

    7) **Z-spread** – bond yield spread to the risk-free bond yield curve in nominal currency;

    8) **Group of bonds** – grouped bonds of different issues for calculation of the Z-spread;

    9) **base exchange rate** – exchange rate of foreign currency against the tenge, determined in accordance with the Methodology of risk parameters based on the results of trading on the day on which the securities are valued;

    10) **timeorders** – fundamental risk parameter, approved by the Committee, which determines the minimum time in minutes that must elapse from the moment an order is submitted to its cancellation either by the trading participant or by the trading system due to the closure of trading, used to generate selections of orders to determine the settlement prices of securities;

    11) **max_deals/orders** – fundamental risk parameter, approved by the Committee, which determines the maximum number of the most recent transactions and/or orders that will be used in the formation of selections of orders or transactions in order to determine the settlement prices of securities;

    12) **MRPVolume** – fundamental risk parameter, approved by the Committee, which determines the multiplier of the MCI size when determining the minimum order or transaction amount

when creating selections of orders or transactions in order to determine the settlement prices of securities;

13) **Period** – fundamental risk parameter approved by the Committee, which determines the sampling depth in calendar days lagging behind the assessment date;

14) **market data** – information received from the Exchange's trading system, or from the Refinitiv or Bloomberg news agencies, or from the official Internet resources of the exchanges, the list of which is approved by the Committee.

3. For purposes of this Methodology:

1) valuation of securities means their initial valuation as well as their consecutive re-valuation;

2) the "clean" price of a security means the price of a debt security without taking into account interest accrued but not paid thereon;

3) the "dirty" price of a security means the price of a debt security taking into account interest accrued but not paid thereon;

4) the price of quotation of securities of a particular title means the price of purchase or selling of securities of that title indicated in the quotation.

4. The result of valuation of a security is its market price defined in accordance with chapters 2 and(or) 3 of this Methodology.

5. The market price of a security is the estimated price that was determined on the basis of market data, all other estimated prices are considered indicative. The procedure for recognizing settlement prices as market or indicative is determined by chapters 2 and 3 of this Methodology.

6. The Exchange does not valuate financial instruments for which the Exchange does not carry out clearing activities.

7. Valuation of shares or securities of investment funds or derivative securities, including ETFs, is carried out in Kazakhstan's tenge.

Bonds are valuated:

– in "clean" prices, if the bonds are traded in "clean" prices in accordance with the Exchange's internal document "Methodology for calculating bond yields and bond deals"; expressed as a percentage of the par value;

– in "dirty" prices, if bonds are traded "in dirty prices" in accordance with the Exchange's internal document "Methodology for calculating the yield on bonds and the amount of transactions with bonds", denominated in Kazakhstan's tenge.

8. Valuation of securities in accordance with this Methodology is carried out every business day after the close of trading on the stock market on that day. The prices determined as a result, are valid until the end of the next working day.

9. The Exchange shall carry no responsibility for the reliability of data received from third parties and used by the Exchange for valuation of securities, nor shall it be responsible for results of such valuation and consequences of their usage at execution of other transactions apart from those immediately related to purposes mentioned in sub-items 1)–2) of the preamble of this Methodology.

10. The Exchange publishes on its website on a daily basis the market and indicative prices of securities.

Chapter 2. VALUATION OF GS OF THE REPUBLIC OF KAZAKHSTAN

11. For valuation purposes, GS of the Republic of Kazakhstan are grouped as follows:

1) the first group – international securities of the Republic of Kazakhstan issued in compliance with the laws of countries other than the Republic of Kazakhstan;

2) the second group – non-indexed GS of the Republic of Kazakhstan denominated in Kazakh tenge, with a fixed coupon rate (e. g. MEOKAM, MEUKAM); non-indexed discount GS of the Republic of Kazakhstan denominated in Kazakh tenge (e. g., MEKKAM, notes of the National Bank of the Republic of Kazakhstan);

3) the third group – GS of the Republic of Kazakhstan denominated in Kazakh tenge, whose coupon rate is indexed at the rate of inflation in Kazakhstan (e. g., MEUJKAM);

4) the fourth group – GS of the Republic of Kazakhstan denominated in foreign currency; GS of the Republic of Kazakhstan denominated in Kazakh tenge, indexed at the level of change in exchange rate of the tenge to a particular foreign currency (e. g., MAOKAM);

5) the fifth group – securities of local executive bodies of the Republic of Kazakhstan.

12. The settlement price of GS of any denomination from among those included in the third group is calculated according to the following formula:

$$P = \left(\sum_{i}^{n} \frac{\frac{K_i}{m_i}}{\left(1 + \frac{Y}{100 m_i}\right)^{m_i F_i}} + \frac{100}{\left(1 + \frac{Y}{100 m}\right)^{m_i F_i}}\right) - C, \text{где}$$

P – settlement "clean" price of the bond in percent to its face value;

i – serial number of the coupon period, beginning from the current coupon period;

n – number of coupon periods in the circulation term of the bond;

m_i – basic coefficient, calculated as the ratio of the duration of the settlement year in days established for a security of this denomination to the duration of the coupon period in days;

F_i – coefficient calculated as the ratio of the duration of the settlement year established for a security of this denomination in days to the number of days between the date of execution of the bond transaction and the date of payment of the next coupon on it;

Y – the bond's yield in percent per annum, calculated as the sum of the fixed annual coupon rate, which was determined during the offering of GS of this denomination, and the inflation index for the last elapsed 12 months, for which the Exchange knows the values of consumer price indices; at the same time, the calculation of the inflation index is carried out in a manner similar to that established by item 79 of the Rules for the issue, placement, circulation, servicing and repayment of government treasury bonds of the Republic of Kazakhstan, approved by resolution No. 466 of the Government of the Republic of Kazakhstan dated April 3, 2009;

K_i – coupon rate, equal to the bond's yield Y;

C – amount of accumulated interest on the current coupon period.

13. The settlement price of particular GS from among the government securities of the Republic of Kazakhstan, included in the first, fourth or fifth group, is calculated in the same way as the settlement prices applicable to non-government serial securities in accordance with Chapter 3 of this Methodology.

14. Settlement prices of GS of the Republic of Kazakhstan included in the second group are calculated in accordance with the internal document of the Exchange "Methodology for determining the yield function of government securities of the Republic of Kazakhstan".

15. Settlement prices of GS of the Republic of Kazakhstan included in the second group are recognized as market prices of such GS.

Settlement prices of GS of the Republic of Kazakhstan included in the third group are recognized as indicative prices of such GS.

Settlement prices of GS of the Republic of Kazakhstan included in the first, fourth or fifth groups are recognized as market or indicative prices in the same way as the recognition applicable to corporate serial securities in accordance with Chapter 3 of this Methodology.

Chapter 3. VALUATION OF CORPORATE SERIAL SECURITIES

16. For each to-be-assessed security of a particular denomination j, an array of purchase and sale transactions concluded on the last trading day on the Exchange by the method of a continuous counter auction is formed.

    Selections are formed from each array of transactions for each security j, with each of them meeting the following conditions:

    – all transactions in the selection have the same settlement date T and settlement currency VAL;

    – the sum of each transaction in the selection is equal to or exceeds the value equal to the MCI*MRPVolume;

    – the most recent deals are selected in an amount not exceeding the set value max_deals/orders.

17. For each to-be-valuated security of any denomination j, an array of buy orders and an array of sell orders submitted on the last trading day on the Exchange by the method of a continuous counter auction are formed.

    Selections are formed from each array of orders for each security j, with each of them meeting the following conditions:

    – all transactions in the selection have the same settlement date T and settlement currency VAL;

    – the sum of each transaction in the selection is equal to or exceeds the value equal to the MCI*MRPVolume;

    – the selection does not take into account orders with a validity period less than the set timeorders;

    – the latest deals by time are selected in an amount not exceeding the set value max_deals/orders *(this paragraph was changed by a decision of the Exchange's Board of Directors dated November 11, 2020)*;

    – buy orders are selected, the yield of which is greater than or equal to the parameter $G_{curr}(t)$ of the risk-free yield curve of bonds in the nominal currency, for the corresponding bond maturity j *(this paragraph was changed by a decision of the Exchange's Board of Directors dated November 11, 2020).*

18. Weighted average prices are calculated for each selection of deals with common parameters (j, T, VAL) and/or buy orders with common parameters (j, T, VAL), and/or sell orders with common parameters (j, T, VAL) by the following formulas:

$$Pwa(j,T,VAL)=\frac{\sum_{i=1}^{n}(V_i \times P_i)}{\sum_{i=1}^{n}V_i} \text{, где}$$

$Pwa(j,T,VAL)$	–	weighted average price of transactions on a selection of transactions (j,T,VAL);
n	–	the actual number of transactions in the selection, selected in accordance with item 16 of the Methodology;
Vi	–	sum of the i-th deal in the selection;
Pi	–	value of the i-th price of the deal in the selection;

$$ASK_{wa}(j,T,VAL)=\frac{\sum_{i=1}^{n}(V_i \times ASK_i)}{\sum_{i=1}^{n}V_i} \text{, где}$$

ASKwa(j,T,VAL)	–	weighted average price of sell orders based on a selection of sell orders (j,T,VAL) *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;
n	–	the actual number of sales orders in the selection, selected in accordance with item 17 of this Methodology *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;
Vi	–	sum of the i-th sales order in the selection *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;
ASKi	–	value of the price of the i-th sales order in the selection *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;

$$BID_{wa}(j,T,VAL) = \frac{\sum_{i=1}^{n}(V_i \times BID_i)}{\sum_{i=1}^{n} V_i}, \text{ где}$$

BIDwa(j,T,VAL)	–	weighted average price of a purchase order for a selection of purchase orders (j,T,VAL) *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;
n	–	the actual number of purchase orders in the selection selected in accordance with item 17 of the Methodology *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;
Vi	–	sum of the i-th purchase order in the selection *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;
BIDi	–	value of the price of the i-th purchase order in the selection *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*.

19. The settlement price of the bond j $P_{sttlmnt}$ from among those listed on the Exchange and traded in "clean" prices is calculated according to the following algorithm:

    1) the aggregated "clean" price of bond j is calculated based on the calculated weighted average prices of transactions for selections with this bond with different settlement dates T and settlement currencies VAL by bringing these prices to date T0 and volumes to tenge using the following formula:

$$Paggr_j = \frac{\sum \frac{Pwa(j,T,VAL)}{1+\frac{(T-T0)\times RepoInd_T}{365}} \times VOLUMEkzt(j,T,VAL)}{\sum VOLUMEkzt(j,T,VAL)};$$

the best buy price and the best sell price for bond j are determined on the basis of the calculated weighted average prices of buy orders and weighted average prices of sell orders for selections with this bond with different settlement dates T and settlement currencies VAL by bringing these prices to the date T0 by the following formulas:

$$BIDbest_j = max_{j,T,VAL}\left[\left(1+\frac{\frac{BIDwa(j,T,VAL)}{(T-T0)\times RepoInd_T}}{365}\right)\right],$$

$$ASKbest_j = \min_{j,T,VAL} \left[\left(1 + \frac{\frac{ASKwa(j,T,VAL)}{(T-T0) \times RepoInd_T}}{365}\right) \right], где$$

Paggr — aggregated "clean" price of the bond j;

$RepoInd_T$ — indicative repo rate for settlement date T. The risk parameter calculated in accordance with the Methodology of risk parameters;

ASKbest — price of the best ask on the bond j *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;

BIDbest — price of the best bid on the bond j *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;

T0 — the current trading date, on which selections for deals and orders were formed;

VOLUMEkzt(j,T,VAL) — total volume of transactions in a selection of the latest transactions (j, T, VAL), expressed in tenge. If the settlement currency VAL is different from tenge, the base rate is used to convert to tenge;

2) the price of the best bid BIDbest and the price of the best ask ASKbest for bond j are adjusted for external data on the prices of buy orders (BIDext) and prices of sell orders (ASKext) using the following formula:

$$BID = \max(BIDbest, BID_{EXT});$$

$$ASK = \min(ASKbest, ASK_{EXT}).$$

The bond's settlement price $P_{sttlmnt}$ is determined as equal to:

– in case of availability of *BID and ASK and Paggr:*

$$P_{sttlmnt} = mid(BID, P_{aggr}, ASK), где$$

mid — function, calculating the median;

– in case of availability of BID and Paggr:

$$P_{sttlmnt} = \max(P_{aggr}, BID);$$

– in case of availability of *ASK and Paggr*:

$$P_{sttlmnt} = \min(P_{aggr}, ASK);$$

3) in the absence of the possibility of calculating $P_{sttlmnt}$ for a bond of a particular denomination in accordance with sub-item 2) of this item, the estimated price is determined based on the use of the Z-spread determined for the Group of bonds, which includes this bond j.

Compositions of Groups of bonds are approved and reviewed by the Committee in the manner determined by the Methodology of risk parameters.

Determination of the settlement price of the bond based on the use of the Z-spread is carried out in the following sequence:

3-1) the Z-spread of the yield is calculated for each bond j included in a particular Group of bonds, based on the latest values of the yield of deals or buy orders, concluded within the specified selection period Period, as a solution to the following equation:

$$Z_j = \begin{cases} 0 \text{ если } curr \overset{def}{=} KZT, \text{ и } Y_{last_j} - G_{curr}(t) < 0 \\ Y_{last_j} - G_{curr}(t), \end{cases}$$

(this paragraph was changed by a decision of the Exchange's Board of Directors dated November 11, 2020)

Y_last_j	–	the last yield on bond j for the specified selection period Period, determined in the following order:

if there is a "clean price" of the last deal (Last_Price) received from the Refinitiv or Bloomberg information agencies, the last yield is determined based on the Last_Price value in accordance with the Exchange's internal document "Methodology for calculating bond yield and amounts of transactions with bonds";

otherwise, the last yield of the bond is determined as being equal to the yield of the last deal or, if there is none, the yield of the last purchase order based on the data of trades on the Exchange. When selecting deals or buy orders concluded within the specified selection period Period, deals are taken into account, the size of which is equal to or exceeds the value equal to MCI*MRPVolume, or orders, the size of which is equal to or exceeds the value equal to MCI*MRPVolume and the validity period of which is longer than the established term timeorders;

$G_{curr}(t)$	–	the value of the risk-free yield curve of bonds in the nominal currency determined for the day of the last deal or the last order to purchase the bond j, for the corresponding maturity of the bond j, calculated in accordance with the Methodology of risk parameters;
Z_j	–	Z-spread on the bond j;

(This sub-item was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)

3-2) the weighting coefficient Wj is calculated for each bond j included to a certain Group of bonds, based on the parameters of the last deal or order used to determine the last yield of bond j according to the following formula *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*:

$$W_j = \frac{q^{-(a_j+1)/(max(a_i)+1)* \ln vol_i}}{\sum_{i=1}^{Bn} q^{-(a_i+1)/(max(a_i)+1)* \ln vol_i}}, \text{где}$$

i	–	serial number of the transaction with the bond j, included in the Group of bonds;
$\ln vol_i$	–	natural logarithm of the value of the volume of the last deal on the bond j, included in the Group of bonds;
a_i	–	number of days from the moment of the last deal on the bond j until the day of the parameter W_j formation;
$max(a_i)$	–	maximum number of days from the moment of the last deal on the bond j until the day of formation of the Wi;
Bn	–	number of bonds included in the Group of bonds;
q	–	minimum number of transactions for the minimum number of transactions for the Group of bonds;

In the case of using data received from the Refinitiv or Bloomberg information agencies, the Wj parameter is not calculated and equals to 1.

3-3) the Z-spread for the Group of bonds (Z_{wa}) is calculated by finding the smallest standard deviation using the lattice of possible Z_{wa} [-100;100] parameter values according to the formula *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*:

$$argmin_{Z_{wa}} (\sum_{j=1}^{k}(Y\_last_j - (G_{curr}(t) + Z_{wa}))^2 * W_j, \text{ where}:$$

(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)

W_j	–	weight coefficient for the j-th bond included in the weight coefficient for the j-th bond included in the Group of bonds;
argmin	–	algorithm for minimizing the standard deviation by the method of simple iteration taking into account the lattice of solutions;
Z_{wa}	–	Z-spread on the Group of bonds;
k	–	number of bonds included in the Group of bonds;

(this sub-item was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)

3-4) theoretical prices P_{theor} are calculated for each bond j included to the Group of bonds using Zwa the Group of bonds by the following formula:

$$P_{theor} = \left(\sum_t \frac{cashFlow\,(t)}{(1+(EXP\,(G_{curr}(t)-1)+Z_{wa})^t)}\right) - НКД, \text{ where:}$$

CashFlow (t) –		future cash flow of the bond in nominal currency (coupon payment, amortization, principal);
G_{curr} (t)	–	value of the risk-free yield curve of bonds in the nominal currency, calculated in accordance with the Methodology of risk parameters;
Z_j	–	Z-spread on the bond j;
EXP	–	function that calculates the exponent of a number.

In respect of bonds of IFOs denominated in Kazakh tenge and indexed according to the inflation rate of the Republic of Kazakhstan, for which the size of the coupon for the next coupon period is not known to the Exchange before the beginning of the next coupon period, the Zwa value is equal to zero;

If it is not possible to determine the value of Zwa based on the data in accordance with sub-items 3-1) – 3-3) of this item, the Exchange has the right to use the available data on initial offerings and / or additional offerings of corporate bonds and IFOs for each corresponding bond j to calculate Zwa, whereby the Period parameter is not used, the sampling depth is determined not earlier than April 4, 2011 *(this paragraph was included by a decision of the Exchange's Board of Directors dated November 11, 2020).*

(this sub-item was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)

3-5) settlement price of the bond $P_{sttlmnt}$ is determined as equal to:

– if *BID and ASK and* P_{theor} are available*:*

$$P_{sttlmnt} = mid(BID, P_{theor}, ASK), где$$

mid	–	function calculating the median;

– if *BID and* P_{theor} are available:

$$P_{sttlmnt} = max(P_{theor}, BID);$$

– if *ASK and* P_{theor} are available:

$$P_{sttlmnt} = min(P_{theor}, ASK);$$

– if only P_{theor} is available:

$$P_{sttlmnt} = P_{theor};$$

In respect of IFI bonds denominated in Kazakh tenge and indexed according to the inflation rate of the Republic of Kazakhstan, for which the size of the coupon for the next coupon period is not known to the Exchange before the beginning of the next

coupon period, the value Psttlmnt = Ptheor *(this paragraph was included by a decision of the Exchange's Board of Directors dated July 29, 2020);*

(this paragraph was changed by decisions of the Exchange's Board of Directors dated July 29, 2020 and November 11, 2020)

3-6) in case of absence of data to determine the settlement price of the bond $P_{sttlmnt}$ in accordance with part 3-5) of this sub-item, the settlement price of such a bond is determined in the following order, taking into account the specified sequence:

– based on data obtained during the initial offering of the bond;

– in accordance with the Exchange's internal document "Methodology for calculating the weighted average yield on illiquid debt securities and determining their fair value";

– determined as equal to 100%.

(this paragraph was changed by a decision of the Exchange's Board of Directors dated November 11, 2020)

20. The settlement price $P_{sttlmnt}$ of a bond is recognized as the market price of that bond in the following cases:

– determined in accordance with sub-item 2) of item 19 of this Methodology;

– determined in accordance with part 3-5) of sub-item 3) of item 19 of this Methodology when using the BID and/or ASK parameters when determining it *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*.

Otherwise, the settlement price of the bond is considered to be the indicative price of such a bond.

21. The settlement price $P_{sttlmnt}$ of shares or securities of investment funds or derivative securities, including ETFs, or bonds traded in "dirty prices" (hereinafter – equity securities) of any denomination, is calculated in the following order:

1) the weighted average prices of transactions, weighted average prices of buy orders, weighted average prices of sell orders, calculated selections of equity securities, as well as total volumes of transactions for these selections, denominated in different currencies, are brought to the corresponding values in tenge using base exchange rates:

$$Pkzt(j,T,VAL)=Pwa(j,T,VAL)\times Rc(VAL)$$

$$ASKkzt(j,T,VAL)=ASK_{wa}(j,T,VAL)\times Rc(VAL)$$

$$BIDkzt(j,T,VAL)=BID_{wa}(j,T,VAL)\times Rc(VAL)$$

$$VOLUMEkzt(j,T,VAL)=VOLUME(j,T,VAL)\times Rc(VAL), где$$

Pkzt(j,T,VAL)	–	weighted average price of transactions in tenge on the selection;
ASKkzt(j,T,VAL)	–	weighted average price of sell orders in tenge on the selection *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;
BIDkzt(j,T,VAL)	–	weighted average price of buy orders in tenge on the selection *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;
VOLUMEkzt(j,T,VAL)	–	total volume of transactions on a selection of the latest transactions (j, T, VAL), expressed in tenge;
Rc(VAL)	–	base exchange rate of the foreign currency against the tenge, determined as of the valuation date in accordance with the Methodology of risk parameters. If the settlement currency VAL is the tenge Rc (VAL) = 1;

2) the aggregated price of an equity security of particular denomination j is calculated based on the calculated weighted average prices of transactions in tenge on selections with this

equity security with different dates and settlement currencies by bringing these prices to date T0 and volumes to the tenge using the following formula:

$$Paggr_j = \frac{\sum \frac{Pkzt(j,T,VAL)}{1+\frac{(T-T0)\times RepoInd_T}{365}} \times VOLUMEkzt(j,T,VAL)}{\sum VOLUMEkzt(j,T,VAL)};$$

the best buy price and the best sell price for an equity security j is determined based on the calculated weighted average prices of buy orders in tenge and weighted average prices of sell orders in tenge on selections with this security with different dates and settlement currencies by bringing these prices to date T0 according to the following formulas:

$$BIDbest_j = \max_{j,T,VAL} \left[\frac{BIDkzt(j,T,VAL)}{(1+\frac{(T-T0)\times RepoInd_T}{365})} \right],$$

$$ASKbest_j = \min_{j,T,VAL} \left[\frac{ASKkzt(j,T,VAL)}{(1+\frac{(T-T0)\times RepoInd_T}{365})} \right], \text{где}$$

Paggr	–	aggregated price of the equity security j;
RepoInd$_T$	–	indicative repo rate for settlement date T. The risk parameter calculated in accordance with the Methodology of risk parameters;
ASKbest	–	best ask price for the equity security j *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;
BIDbest	–	best bid price for the equity security j *(this paragraph was changed by a decision of the Exchange's Board of Directors dated July 29, 2020)*;
T0	–	the current trading date, on which selections of deals and orders were formed;

3) the price of the best bid BIDbest and the price of the best ask ASKbest are adjusted for external data at the prices of buy orders (BIDext) and at the prices of sell orders (ASKext) according to the following formula:

$$BID = \max(BIDbest, BID_{EXT}),$$

$$ASK = \min(ASKbest, ASK_{EXT}),$$

If the parameters BID_{EXT_j} and ASK_{EXT_j} are specified in a currency other than the tenge, then when determining the BID and ASK values using external data, the conversion is made into tenge at the base rate of the foreign currency to the tenge at the time of loading the data on orders. In the absence of the base exchange rate of the foreign currency against the tenge, the exchange rate of the National Bank of the Republic of Kazakhstan is used to bring values to the tenge;

If external data is used to determine the BID and (or) ASK parameters for bonds traded in "dirty" prices, the corresponding values BID_{EXT} or ASK_{EXT} are used in "dirty" prices obtained from external information systems *(this paragraph was included by a decision of the Exchange's Board of Directors dated July 29, 2020)*.

4) the settlement price of the equity security $P_{sttlmnt}$ is determined as being equal to:

– if BID and ASK and Paggr are available:

$$P_{sttlmnt}=mid(BID,Paggr,ASK)$$

mid – function, calculating the median;

- if BID and $Paggr$ are available:

$$P_{sttlmnt}=max(Paggr,BID);$$

- if ASK and $Paggr$ are available:

$$P_{sttlmnt}=min(Paggr,ASK);$$

- if *BID and ASK are available*:

$$P_{sttlmnt}=\frac{(BID+ASK)}{2};$$

5) in the absence of data for determining the settlement price, in accordance with item 4 of this item, the estimated price of such a security is determined according to the formula:

$$P_{sttlmnt}=P_{sttlmnt_{T-1}};$$

6) in the absence of data for determining the settlement price $P_{sttlmnt}$, in accordance with item 5 of this item, the settlement price of such a security is determined in the following order, taking into account the specified sequence:

- based on data received from the initiator of admission of the security to trades;

- is fixed as being equal to – 0.01 tenge.

22. The settlement price of equity securities $P_{sttlmnt}$, determined in accordance with sub-item 4) of item 21 of this Methodology, is recognized as the market price of such an equity security.

The settlement price of equity securities $P_{sttlmnt}$ determined in accordance with sub-items 5) and 6) of item 21 of this Methodology, is recognized as the indicative price of such an equity security.

Chapter 4. SPECIAL POWERS OF THE COMMITTEE ON MARKET RISKS

23. In situations when the calculated prices of any securities determined in accordance with this Methodology differ significantly from the objective current price level for these securities in the Exchange's trading system or in the information systems of other exchanges and/or quotation systems (due to the occurrence of force majeure circumstances, refusal of market makers to fulfill their obligations to maintain quotations, significant price fluctuations in foreign markets, changes in exchange rates or prices on commodity markets, as well as for other possible reasons), the Committee has the right to decide on determining settlement prices for such securities in a manner different from that established by this Methodology. In this case, the determining of the indicated settlement prices can be carried out within the time frame established by this Methodology, or within the time frame established by the Committee.

24. The Exchange's subdivision carrying out clearing activities or any of the Committee members may initiate the use of the Committee's powers specified in items 23 of this Methodology. The initiator of the use of this power is obliged to present the procedure for determining the settlement prices, which is different from the one established by this Methodology, the justification, as well as the possible period of its use (once or over a certain period of time).

25. When the Committee uses its powers established by item 23 of this Methodology, the minutes of its meetings must reflect the reasons for using these powers and the actions taken in accordance with these powers.

Chapter 5. FINAL PROVISIONS

26. This Methodology is subject to updating as necessary, but at least once every three years, counting from the date of putting this Methodology into effect.

Chairperson of the Management Board   A. Aldambergen