KAZAKHSTAN STOCK EXCHANGE JSC

A p p r o v e d

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

(minutes No. 75 of the meeting on June 5, 2020)

Effective

from August 3, 2020

N O T I C E

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

METHODOLOGY

of calculating the yield of bonds and amounts of deals with bonds

Almaty

2020

LIST OF AMENDMENTS

1. **Additions No. 1:**
   - approved by the decision of the Management Board of JSC "Kazakhstan Stock Exchange" (Minutes No. 103 of the meeting of July 28, 2020);
   - Effective from August 3, 2020.
2. **Additions No. 2:**
   - approved by the decision of the Board of JSC "Kazakhstan Stock Exchange" (Minutes No.119 of the meeting of November 11, 2021);
   - Effective from November 12, 2021.
3. **Additions No. 3:**
   - approved by the decision of the Board of JSC "Kazakhstan Stock Exchange" (Minutes No.56 of the meeting of April 26, 2022);
   - Effective from April 27, 2022.
4. **Additions No. 4:**
   - approved by the decision of the Board of JSC "Kazakhstan Stock Exchange" (Minutes No.98 of the meeting of August 17, 2022);
   - Effective from August 19, 2022.
5. **Additions No. 5:**
   - approved by the decision of the Board of JSC "Kazakhstan Stock Exchange" (Minutes No.78 of the meeting of July 09, 2024);
   - Effective from July 10, 2024.

This Methodology was developed for internal purposes of Kazakhstan Stock Exchange JSC (hereinafter – the Exchange), establishes criteria for determining the type of prices at which bonds are traded, as well as a uniform procedure for calculating such parameters as bond yield and the amount of a deal in bonds.

Chapter 1. GENERAL PROVISIONS

1. For purposes hereof a bond shall mean any security admitted to circulation on the Exchange (regardless of its issuer's type) verifying the right of its holder in accordance with terms of issue of this security:

   1) to receive at the end of the circulation period of a security from its issuer the face value of the security in cash;

   2) to receive (be receiving) from the issuer of a security the interest on it in the form of a discount – a positive difference between the par value of this security and the price of its offering, paid simultaneously with the par value of this security and within this par value, or a coupon – an amount subject to periodic (single or multiple) payment in excess of the par value of this security during and/or at the end of its circulation period.

2. For purposes of this Methodology:

   1) the yield of a bond is understood as the indicator of expected yield on a bond for its buyer upon redemption (expiration of the circulation period) of this bond, without taking into account the possibility of reinvesting the amounts received as interest on the bond; expressed as a percentage per annum;

   1-1) IFI means international financial institutions *(this sub-item was included by a decision of the Exchange's Management Board dated July 28, 2020);*

   2) target yield means the yield of a floating coupon bond, calculated on the basis of parameters known as at the moment of such calculation;

   3) the accounting year is understood as a conditional period measured in days, approximately equal to one year, used to calculate the bond yield; which is subdivided into 12 settlement months;

   4) the settlement month means one month of the settlement year;

   5) a settlement day means one day of the settlement year.

3. Other concepts used in this Methodology are identical to the concepts defined by other internal documents of the Exchange.

4. The parameter of bond yield:

   1) as one of the price criteria (along with the price expressed as a percentage of the par value of the bond), according to which the bonds are traded and, accordingly, the trading and clearing system is configured;

   2) as an indicator by which one of the stock indices (stock market indicators) is calculated;

   3) in other cases, stipulated by the Exchange's internal documents.

5. The parameter of the amount of a bond transaction is used to carry out settlements on bond transactions.

Chapter 2. CRITERIA FOR DETERMINING THE TYPE OF BOND PRICES

6. Bonds of any denomination are traded at "clean" prices if the bonds are discount bonds or meet the following criteria:

   1) the par value of bonds is fixed, i.e. it is not subject to change during the circulation period of

these bonds;

2) bonds have a fixed maturity date, also determined taking into account item 15 of this Methodology;

3) bonds have fixed dates of coupon payments;

4) the amount of coupon interest on bonds is fixed or floating (indexed), but the size of the coupon interest for the next coupon period must be known to the Exchange at least two business days of the Republic of Kazakhstan prior to the beginning of the next coupon period;

4-1) are IFI bonds or bonds of the Ministry of Finance of the Republic of Kazakhstan, denominated in the Kazakh tenge and indexed at the inflation rate of the Republic of Kazakhstan, on which the amount of coupon interest for the next coupon period may not be known to the Exchange *(this sub-item was included by a decision of the Exchange's Management Board dated July 28, 2020)*;

4-2) Coupon interest on bonds floating, indexed to the repo market indicator rate TONIA (hereinafter - bonds with floating interest rate indexed to TONIA) *(this sub-item was included by the decision of the Exchange Management Board of November 11, 2021)*;

5) the bonds are not amortized; the terms of the bonds issue do not provide for a schedule of their partial early redemption. A possible assumption in this case may be partial early redemption of bonds by reducing the number of bonds in circulation, which should be clearly stated in the bond issue prospectus (or a document similar in meaning);

6) capitalization of coupon interest accrued on bonds is not provided for in any form;

7) there is no provision for the accrual and payment of any other amounts on bonds, except for the coupon interest and the face value of the debt upon the expiration of the circulation period.

7. Trading in bonds of any denomination is carried out in "dirty" prices, if the bonds are not discount bonds or do not meet any of the criteria established by item 6 of this Methodology.

8. Prices ("clean" or "dirty"), at which the bonds are traded, are determined by a decision of the member of the Exchange's Management Board in charge of the trading unit, made in connection with the opening of trades in bonds of this name.

9. When making changes and/or additions to the issue prospectus (or a document similar in meaning) of bonds of particular name, in accordance with which the bonds of this denomination cease to meet at least one of the criteria specified in item 6 of this Methodology, or vice versa, become compliant with all the criteria specified in item 6 of this Methodology, the member of the Exchange's Management Board in charge of the trading unit makes a decision to change the mode of trading in bonds of this name – transfer from trading in "clean" prices to trading in "dirty" prices or vice versa.

The basis for such a decision of a member of the Management Board is a memo of the monitoring unit, agreed with the clearing unit and the information and statistics unit on the submission to the Exchange by the admittance initiator of these bonds of changes and/or additions to the issue prospectus of bonds of this name (or a document similar in meaning).

The change in the trading mode for bonds of this name is carried out no later than three working days from the date of receipt by the Exchange of changes and/or additions to the issue prospectus of bonds of this name (or a document similar in meaning) in accordance with the second paragraph of this item.

9-1. In case of the first trading in bonds of any denomination traded in "dirty" prices, as a result of which the bonds of this denomination meet all the criteria for trading in "clean" prices, given in item 6 of this Methodology, the trading unit requests from the issuer of these bonds or the financial advisor of the issuer of these bonds the schedule of their coupon payments.

Change of the trading mode for bonds of this denomination is carried out on the basis of the decision of the Exchange Management Board member, supervising the trading unit, on the third working day from the date of receipt by the trading unit of official information on the schedule of coupon payments on such bonds from their issuer or their issuer's financial consultant.

(This item was changed by a decision of the Exchange's Management Board dated 26 April of 2022)

Chapter 3. CALCULATION OF BOND YIELD

10. The calculation of the yield of a discount bond is carried out according to the time base established by the terms of issue of these bonds:

1) the calculation of the yield on a bond with a time base different from actual/actual is carried according to the formula:

$$Y = \frac{100 - P_i}{P_i} \times \frac{T_0}{T_n} \times 100\ \%, \text{ where}$$

Y – yield of the bond, in annual percentage;

P_i – price of the bond, in percentage to the bond's face value;

T_0 – duration of the settlement year, in days;

T_n – the number of days between the date of execution of the bond transaction and the date of redemption (expiration of the circulation period) of the bond;

2) calculation of the bond yield with the actual/actual time base is carried out according to the formula:

$$Y = \frac{100 - P_i}{P_i \times \left(\frac{T_n^{365}}{365} + \frac{T_n^{366}}{366}\right)} \times 100\ \%, \text{ where}$$

T^{365}_n – number of days falling on the non-leap year;

T^{366}_n – number of days falling on the leap year.

11. The yield of a coupon bond (except for a coupon bond with a floating interest rate indexed to TONIA) shall be calculated on the time basis established by the terms of issue of these bonds, in the reverse method from the following formula for calculating the "dirty" price (except as set forth in paragraph 19 of this Methodology) *(this paragraph was changed by the decision of the Exchange Management Board of November 11, 2021)*:

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

P – the "dirty" price of the bond, calculated in accordance with item 12 of this Methodology, as a percentage of the nominal value of the bond;

i – the serial number of the coupon period, starting from the current coupon period, taking into account the peculiarities set forth in item 15 of this Methodology;

n – the number of coupon periods in the term of circulation of the bond, taking into account the peculiarities established by item 15 of this Methodology;

m_i – basis factor, calculated in accordance with item 13 of this Methodology;

F_i – coefficient calculated in accordance with item 14 of this Methodology;

Y – bond yield, in percent per annum;

K_i – the coupon rate on the bond for one coupon period, taking into account the peculiarities set forth in items 16 and 17 of this Methodology.

11-1. The yield of a coupon bond with a floating interest rate, indexed to TONIA, is calculated according to the time base established by the terms of the issue of these bonds, in the reverse way from the formula for calculating the "dirty" price below (with the exception established by item 19 of this Methodology):

$$P=\sum_{i}^{n}\frac{\frac{K_{res}}{m_i}}{\left(1+\frac{Y}{100m_i}\right)^{m_iF_i}}+\frac{100}{\left(1+\frac{Y}{100m_i}\right)^{m_iF_i}},\ \text{where}$$

P – the "dirty" price of the bond, calculated in accordance with item 12 of this Methodology, as a percentage of the face value of the bond;

i – serial number of the coupon period, starting from the current coupon period, taking into account the specifics established by item 15 of this Methodology;

n – is the number of coupon periods in the maturity of the bond, taking into account the specifics established by шеуь 15 of this Methodology;

mi – the basic coefficient calculated in accordance with item 13 of this Methodology;

Fi – the coefficient calculated in accordance with item 14 of this Methodology;

Y – the yield of the bond in percent per annum;

Kres – the resulting coupon rate calculated in accordance with item 14-1 of this Methodology, except for cases when the calculation of such a coupon rate is specified by the terms of the issue.

(This item was included by the decision of the Exchange Management Board of November 11, 2021 and was changed by a decision of the Exchange's Management Board dated 17 August of 2022)

11-2. For bonds with different coupon payment periods, the yield calculated in accordance with items 11 and 11-1 of this Methodology is an indicative figure, and when calculating the amount of a transaction with bonds, the main parameter is the "clean" price *(this item was included by the decision of the Exchange Management Board of July 09, 2024)*.

12. The "dirty" price of a coupon bond is calculated as the sum of its "clean" price and the accrued interest on it (hereinafter – ACI, or accumulated coupon income) taking into account the time base established by the bond issue terms:

1) on all time bases, other than actual/actual, is calculated according to the formula:

$$P=P_c+\left(K_i\times\frac{T_k}{T_0}\right),\ \text{where}$$

P_c – "clean" price of the bond, in percentage to the bond's face value;

K_i – rate of the coupon on the bond for the settlement year, in annual percentage;

T_k – the number of days between the date of payment of the last coupon on the bond and the specified date of execution of the deal with it;

T_0 – duration of the settlement year, in days;

2) on the time base actual/actual is calculated according to the formula:

$$P=P_c+\left(K_i\times\frac{T_{ki}^{365}}{365}+K_i\times\frac{T_{ki}^{366}}{366}\right),\ \text{where}$$

T_{ki}^{365} – the number of days between the date of payment of the last coupon on the bond and the specified date of execution of the deal with it, falling on a non-leap year;

T_{ki}^{366} – the number of days between the date of payment of the last coupon on the bond and the specified date of execution of the deal with it, falling on a leap year.

13. The basic coefficient m_i is calculated taking into account the time base established by the terms of the bond issue:

1) on all time bases, other than actual/actual, is calculated according to the formula:

$$m_i = \frac{T_0}{T_i}, \text{ where}$$

T_i – duration of the coupon period, in days;

2) on the time base actual/actual is calculated according to the formula:

$$m_i = \frac{1}{\frac{T_i^{365}}{365} + \frac{T_i^{366}}{366}}, \text{ where}$$

T_i^{365} – length of the coupon period, in days, falling on a non-leap year;

T_i^{366} – length of the coupon period, in days, falling on a non-leap year.

14. The coefficient F_i is calculated taking into account the time base established by the terms of the bond issue:

1) on all time bases, other than actual/actual, is calculated according to the formula:

$$F_i = \frac{T_{ki}}{T_0}, \text{ where}$$

T_{ki} – the number of days between the date of execution of the deal with the bond and the date of payment of the next coupon on it;

2) on the time base actual/actual is calculated according to the formula:

$$F_i = \frac{T_{ki}^{365}}{365} + \frac{T_{ki}^{366}}{366}, \text{ where}$$

T_{ki}^{365} – the number of days between the date of execution of the deal with the bond and the date of payment of the next coupon on it, falling on a non-leap year;

T_{ki}^{366} – the number of days between the date of execution of the deal with the bond and the date of payment of the next coupon on it, falling on a leap year.

14-1. The resulting coupon rate is calculated as the sum of the realized part of such rate and the forecast according to the following formula:

$$K_{res} = \left(\frac{K_{fact}}{BCY}\right) * (T - BP) + \left(\frac{K_{theor}}{BCY}\right) * (CP - T), \text{ where}$$

K_{res} – the resulting coupon rate on the settlement day T;

K_{fact} – the realized part of the coupon rate on the settlement day T;

BCY – number of calendar days in the coupon period;

K_{theor} – forecast coupon rate for the current coupon period;

T – settlement date;

BP – start date of the coupon period;

CP – coupon payment date.

(This item was included by the decision of the Exchange Management Board of November 11, 2021)

14-2. The forecast coupon rate for the current coupon period is calculated by the following formula:

$$K_{theor} = \left(K_{fact} \times \left[1 + \frac{R_i \div 100}{BCY} * (n - b)\right]\right), \text{ where}$$

K_{theor} – forecast coupon rate for the current coupon period;

K_{fact} – the realized part of the coupon rate on the settlement day T;

b – the number of calendar days elapsed from day T to the date of the previous coupon

payment;

R_i – the final yield on the last three-month note publicly posted on the official website of the National Bank of Kazakhstan;

n – the number of calendar days in the corresponding coupon period.

(This item was included by the decision of the Exchange Management Board of November 11, 2021)

14-3. The realized part of the coupon rate is calculated on the basis of the currently calculated TC_t index and the TC_{t_prev} value fixed on the date of the beginning of the current coupon period, according to the following formula

$$K_{fact} = \left(\frac{TC_t}{TC_{t\_prev}} - 1\right) \times \frac{BCY}{d}, \text{ where:}$$

K_{fact} – the realized part of the coupon rate on the settlement day T;

TC_t – the composite value of TONIA calculated on the i-th calendar day (by default the previous trading day);

TC_{t_prev} – the composite value of TONIA calculated on the date of the beginning of the current coupon period;

d – the number of calendar days from the start date of the current coupon period to the date with the next known value of the coupon.

(This item was included by the decision of the Exchange Management Board of November 11, 2021)

14-4. The TONIA composite value is calculated according to the following formula:

$$TC_t = TC_{t-1} \times \left(1 + \frac{TONIA_t \div 100 \times n_i}{BCY}\right), \text{ where:}$$

TC_t – composite value of TONIA calculated on the i-th calendar day (by default, the previous trading day). The initial value of the TC composite value on the date preceding the bond's circulation start date is determined equal to the TCI index (TONIA composite index), published on the Exchange's official website;

t – the day on which the last known value of the TONIA indicator was calculated;

TC_{t-1} – composite value of TONIA for the previous trading day;

$TONIA_t$ – the last calculated TONIA value;

BCY – the number of days in the year (according to the basis of the bond);

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

(This item was included by the decision of the Exchange Management Board of November 11, 2021)

15. The maturity date for bonds, the terms of issue of which do not specify a maturity date (perpetual bonds), is considered as one of the following dates:

1) the date of the offer at which the issuer has the obligation or the right to fully or partially redeem the bond issue if such a condition exists in the issue prospectus;

2) the next coupon payment date.

16. For bonds with a floating coupon, the last known value of the coupon rate is applied to all coupon payments before the maturity date of such bonds, taking into account the specifics established by item 15 of this Methodology.

17. For bonds with different forms of coupon payments remaining to maturity (fixed and floating coupon rates in effect in different coupon periods), the fixed coupon rate is applied to all coupon payments until the maturity date, taking into account the specifics established by item 15 of this Methodology.

17-1. For IFI bonds and bonds of the Ministry of Finance of the Republic of Kazakhstan denominated in the Kazakh tenge and indexed at the rate of inflation in the Republic of Kazakhstan:

the value of the coupon rate known to the Exchange for the next coupon period is applied, or

in the absence of the coupon rate value for the next coupon period known to the Exchange, the forecasted coupon rate is applied, calculated as the sum of the fixed margin rate determined when placing bonds of this denomination, and the inflation index, calculated in accordance with the formula specified in the terms of issue of bonds of this name. The forecasted coupon rate is calculated by the Exchange using the consumer price index values published on the official website of the Committee on Statistics or on the website of the National Bank of the Republic of Kazakhstan, on a monthly basis no later than two business days after such publication.

(This item is included by a decision of the Exchange's Management Board dated July 28, 2020)

18. The number of days between any dates is counted taking into account the time base established by the terms of the bond issue, and taking into account the specifics established by items 13 and 14 of this Methodology; each of the dates is represented as a numeric set "$year_n$.$month_n$.day_n", where the indicator "$year_n$" corresponds to four positions, the indicator "$month_n$" – two positions and the indicator "day_n" – two positions (for example, October 31, 2019 is represented as "2019.10.31"):

    1) according to the time base 30/360, the number of days between dates (Day Count) is calculated as:

    $$(\text{Day count}) = (Y2-Y1) \times 360 + (M2-M1) \times 30 + (D2-D1), \text{ where:}$$

    Y – number of full years between dates, equal to $\{Year_2 – Year_1\}$;

    M – the number of full months between dates, minus the months taken into account when calculating the indicator Y;

    D – number of days between dates minus days taken into account when calculating Y and M.

    At that, if Day_1 falls on the 31st, then Day_1 is taken equal to 30, and if Day_2 is 31, then Day_2 is taken equal to 30, but only if Day_1 falls on the 30th or 31st;

    2) according to the time base actual/360, the number of days between dates is calculated as the difference between the dates; calculation base –360:

    $$(\text{Day count}) = D2-D1;$$

    3) according to the time base actual/365, the number of days between dates is calculated as the difference between the dates; calculation base –365:

    $$(\text{Day count}) = D2-D1;$$

    4) according to the time base actual/actual, the number of days between dates is calculated as the difference between the dates:

    $$(\text{Day count}) = D2-D1.$$

19. The calculation of the yield is not carried out on bonds that are traded in the trading and clearing system at "dirty" prices.

Chapter 4. CALCULATION OF THE AMOUNT OF A DEAL WITH BONDS

20. When trading bonds, the number of bonds in the deal in kind (in securities) is used as their quantity (in orders for conclusion of deals and in concluded deals).

21. The amount of a deal with bonds traded in "clean" prices is determined by the following algorithm:

    1) the volume of the deal is determined at the "clean" price as the product of the "clean" price of one bond and the number of bonds in the deal, determined in accordance with item 20 of this Methodology, while the price as a percentage of the par value of the bond is first converted into the quotation currency:

    $$V = \frac{P_c}{100} \times N \times Q, \text{ where}$$

    V – amount of the deal at the "clean" price;

P_c – "clean" price, in percentage to the face value;

N – face value of the bond;

Q – number of bonds in the deal;

2) the amount of interest accrued is calculated for the bonds that are the subject of the deal, according to the formula:

$$I_{acc}=Q \times K \times \frac{T_{k/n}}{T_0}, \text{ where}$$

I_{acc} – amount of the interest accrued on the bonds;

Q – number of bonds in the deal;

K – interest rate (coupon or discount) on bonds for the accounting year, in percent per annum;

$T_{k/n}$ – the number of days between the date of payment of the last coupon on bonds and the date of execution of the deal (for coupon bonds) or the number of days between the specified date of execution of the deal and the date of redemption of bonds (for discount bonds), taking into account the specifics established by item 18 of this Methodology;

T_0 – duration of the accounting year;

3) the volume of the deal at the "clean" price, determined in accordance with sub-item 1) of this item, is added to the size of the interest accrued calculated in accordance with sub-item 2) of this item, for bonds.

22. The amount of a deal in bonds traded in "dirty" prices is defined as the product of the "dirty" price of one bond and the number of bonds in the deal determined in accordance with item 20 of this Methodology:

$$S = P \times Q, \text{ where}$$

S – the deal amount at the "dirty" price;

P – "dirty" price, in monetary terms;

Q – number of bonds in the deal.

23. The results obtained in accordance with sub-item 3) of item 21 and item 22 of this Methodology are rounded to the second decimal place according to the rules of mathematical rounding (numbers up to five are reduced to zero, and numbers from five and above are increased to ten).

Chapter 5. RECALCULATION OF AMOUNTS OF DEALS WITH BONDS, DENOMINATED IN FOREIGN CURRENCIES

24. If bonds are denominated in foreign currency, deals in which are calculated in tenge, the amounts received in accordance with sub-item 3) of item 21 and item 22 of this Methodology are converted into tenge in accordance with item 25 of this Methodology.

    If bonds are denominated in foreign currency, deals on which are calculated in the currency of the issue, the amounts received in accordance with sub-item 3) of item 21 and item 22 of this Methodology are not recalculated in the tenge.

25. The amount of the deal with bonds denominated in foreign currency and issued in accordance with the laws of the Republic of Kazakhstan or states other than the Republic of Kazakhstan, it is converted into tenge at the official rate of the National Bank of the Republic of Kazakhstan fixed with regard to this currency as of the date of conclusion of the deal for the purpose of trading.

Chapter 6. FINAL PROVISIONS

26. Responsibility for the implementation of this Methodology and the introduction of changes and/or additions (updating) rests with the trading unit.

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

Chairperson of the Management Board A. Aldambergen