BIST GOLD DENOMINATED INDICES METHODOLOGY

TABLE OF CONTENTS

1. PURPOSE

BIST Gold and BIST Spot Gold Indices are created in order to measure daily returns of gold prices and, BIST Gold Bond and BIST Gold Denominated Lease Certificate Indices are created in order to measure daily returns of gold bonds and gold denominated lease certificates issued by Republic of Türkiye Ministry of Treasury and Finance and by Republic of Türkiye Ministry of Treasury and Finance Asset Leasing Company.

Borsa İstanbul has full control over all indices calculated within the scope of this Methodology and is responsible for all processes related to the creation, calculation and publication of these indices.

2. CALCULATED INDICES

2.1. BIST GOLD INDEX

BIST Gold Index is calculated based on the USD/Ounce trade prices of gold transactions realized in Precious Metals and Diamond Markets (PMD). Index measures returns of gold prices in USD/Ounce.

2.2. BIST SPOT GOLD INDEX

BIST Spot Gold Index is calculated based on the converted TL/gram prices of spot USD/ounce prices realized in international markets. Index measures returns of gold prices in TRY/Gram.

2.3. BIST GOLD DENOMINATED LEASE CERTIFICATE INDEX

BIST Gold Denominated Lease Certificate Index is calculated based on same day value prices of gold denominated lease certificates traded in the Borsa İstanbul Debt Securities Market (DSM) issued in grams of gold by Republic of Türkiye Ministry of Treasury and Finance and by Republic of Türkiye Ministry of Treasury and Finance Asset Leasing Company. There is no distinction of the indices in terms of maturity lengths. Index measures returns from gold and lease in Turkish Lira.

2.4. BIST GOLD BOND INDEX

BIST Gold Bond Index is calculated based on same day value prices of gold bonds traded in the DSM issued in grams of gold by Republic of Türkiye Ministry of Treasury and Finance and by Republic of Türkiye Ministry of Treasury and Finance Asset Leasing Company. There is no distinction of the indices in terms of maturity lengths. Index measures returns from gold and interest in Turkish Lira.

3. CALCULATION METHODOLOGY

3.1. PRICES USED IN INDEX CALCULATIONS AND DATA HIERARCHY

In the BIST Gold Index, prices of USD/ounce gold transactions in PMD with the following properties;

- with minimum 995/1000 fineness,

- London Bullion Market Association (LBMA) in and out,

- main vault,

- standard 1 kg bullion gold

are used. In the calculation of the indices, fixing transactions are not taken into consideration. If the related transactions are not occurred or the prices of the securities included in the indices cannot be reached due to the existence of unusual market conditions, the indices continue to be calculated with the latest prices used.

In the BIST Spot Gold Index, average of following USD/Ounce price quotations disseminated real time in the Refinitiv Eikon data terminal is used.

- Bid prices disseminated through symbol of XAU=BID
- Ask prices disseminated through symbol of XAU=BID

Average of following USD/TRY price quotations disseminated real time in the Refinitiv Eikon data terminal is used in order to convert USD/Ounce prices to TRY/Gram prices.

- Bid prices disseminated through symbol of TRYBB=
- Ask prices disseminated through symbol of TRYBA=

1 Gram = 0.0321507465 Ounce formula is used in conversion of Ounce to Gram. If the prices from Refinitiv Eikon data terminal remain the same or the prices cannot be reached due to the existence of unusual market conditions, the indices continue to be calculated with the latest USD/Ounce spot gold and USD/TRY price quotations.

In the BIST Gold Bond Index and BIST Gold Denominated Lease Certificate Index, nominal prices in grams of gold are calculated from the last settlement prices of transactions announced in DSM Outright Purchases and Sales Normal Orders Market and Watchlist Market converted to TRY/Gram with USD/Ounce and USD/TRY prices used in calculations of BIST Spot Gold Index. Real time prices in TRY of securities are calculated based on corresponding nominal prices together with real time gold and currency prices.

Cross trades, trade reports, non-cleared transactions and cancelled trades are excluded from the index calculations. Trade cancellations made after 14:00 session closing time for same day value transactions affect prices of securities in indices so they are taken into account in index calculations. Prices of securities in TRY/Gram is recalculated using real time USD/Ounce and USD/TRY prices at the time of trade cancellation.

If a bond does not have any same day settled transaction in any day or the prices of the bonds included in the indices cannot be reached due to the existence of unusual market conditions, in order to find forward carried nominal price in grams of gold, last nominal price in grams of gold is carried forward under the assumption that yield will stay same until the maturity. Forward carried nominal price is taken as a base price for the security in the calculation of prices used in indices with using real time USD/Ounce and USD/TRY. If

the prices of the real time USD/Ounce and USD/TRY cannot be reached due to the existence of unusual market conditions, TRY prices used in indices continue to be calculated with the latest USD/Ounce spot gold and USD/TRY price quotations.

3.2. WEIGHTING METHOD

BIST Gold Bond and BIST Gold Denominated Lease Certificate Indices are market value weighted indices. The market value of a security is calculated by multiplying nominal amount with last settlement prices used in indices.

3.3. INCLUSION IN INDICES

Gold bonds and gold denominated lease certificates are added to indices with prices calculated from issue price using USD/Ounce and USD/TRY prices on the first settlement date. Return of the security starts to be reflected to the indices effective from the next business day after the first settlement date.

3.4. EXCLUSION FROM INDICES

Gold bonds and gold denominated lease certificates remain in the indices for the last time at the maturity date, or if it is holiday than the next business day with the face amount. Face amount is calculated through multiplying nominal amount with prices used in index at the maturity date. Prices in index at the maturity date are calculated based on sum of nominal 100 gram and coupon or lease amount together with USD/Ounce and USD/TRY prices at the maturity date.

3.5. NOMINAL AMOUNTS

Total nominal amount of gold bonds and gold denominated lease certificates are the total issued amounts issued by Republic of Türkiye Ministry of Treasury and Finance and by Republic of Türkiye Ministry of Treasury and Finance Asset Leasing Company. Reissues and buybacks are considered in calculation of total issued amounts.

3.6. BIST GOLD VE BIST SPOT GOLD INDICES FORMULA

BIST Gold Index is calculated on the basis of following formula:

$$\text{Gold Index}_t = \text{Gold Index}_{Base} * (\frac{\text{Price}_t}{\text{Price}_{Base}})$$

Gold Index_t: Value of Gold Index on day t

Gold Index_{Base}: Base value of Gold Index

Price_t: Same day value trade prices of USD/Ounce gold transactions in PMD on day t

Price_{base}: Same day value trade prices of USD/Ounce gold transactions in PMD on the base date of index

BIST Spot Gold Index is calculated on the basis of following formula:

$$\text{Gold Index}_t = (\text{USD/TRY})_t * \left(\frac{\text{USD}}{\text{Ounce}}\right)_t * 0.0321507465$$

USD/TRY_t: Average of bid (TRYBB=) and ask (TRYBA=) prices

USD/Ounce_t: Average of bid (XAU=BID) and ask (XAU=ASK) prices

0.0321507465 ∶ Ounce to Gram conversion factor

3.7. BIST GOLD BOND AND BIST GOLD DENOMINATED LEASE CERTIFICATE INDICES FORMULA

BIST Gold Bond and BIST Gold Denominated Lease Certificate Indices are calculated on the basis of following formula:

$$\text{Index}_t = \text{Index}_{t-1} \times \left(1 + \frac{\sum_{i=1}^{n} w_{i,t-1} \times r_{i,t}}{\sum_{i=1}^{n} w_{i,t-1}}\right)$$

Index_t: Value of index on day t

$w_{i,t-1}$: Market value of security i on day t-1

$$w_{i,t-1} = N_{i,t-1} \times P_{i,t-1}$$

$N_{i,t-1}$: Nominal amount of security i on day t-1

$P_{i,t-1}$: Settlement price of security i on day t-1

$r_{i,t}$: Return of security i on day t

n: Number of securities in indices

Prices used in indices are calculated on the basis of following formula:

$$\text{Settlement Price}_{i,t} = (\text{USD/TRY})_t * (\text{USD/Ounce})_t / 31.1034768 * \text{Nominal} / 100$$

$\text{Settlement Price}_{i,t}$: Price used in indices for security i on day t

USD/TRY_t: Average of bid (TRYBB=) and ask (TRYBA=) prices

USD/Ounce_t: Average of bid (XAU=BID) and ask (XAU=ASK) prices

Nominal: Price in grams of gold calculated from trades in DSM

31.1034768: Ounce to gram conversion factor

3.8. BIST GOLD DENOMINATED INDICES CALCULATION AND PUBLICATION INTERVALS

INDEX NAME	CALCULATION AND PUBLICATION INTERVAL
BIST GOLD INDEX	Every 10 seconds during 09:00 – 16:00 on business days (09:00 – 13:00 on half business days)
BIST SPOT GOLD INDEX	Every 10 seconds during 10:00 – 18:05 on business days (10:00 – 12:35 on half business days)
BIST GOLD DENOMINATED LEASE CERTIFICATE INDEX	Every 10 seconds during 10:00 – 18:05 on business days (10:00 – 12:35 on half business days)
BIST GOLD BOND INDEX	Every 10 seconds during 10:00 – 18:05 on business days (10:00 – 12:35 on half business days)

3.9. BIST GOLD DENOMINATED INDICES DATA PRECISION

Data precision of the parameters used in the index calculations is shown at the table below.

DATA PRECISION	
Index Values	Rounded to 5 decimal places
Weighting Factor	Rounded to 12 decimal places

4. CORRECTION IN INDEX VALUES

No retroactive correction is made in the index values calculated and published in real time. Retroactive correction in the index values calculated and published at the end of day can be permitted only by the decision of the Borsa İstanbul Management.

5. OTHER

Borsa İstanbul Index Department is responsible for monitoring and administration of indices. In case of absence of any constituent for any of indices, indices are continued with latest recorded value. Borsa İstanbul Management is authorized with regard to issues that are not stipulated in the BIST Gold Denominated Indices Methodology.

6. EFFECTIVE DATE

This Methodology takes effect on December 25, 2023. The current version of the Methodology should be confirmed on the Borsa Istanbul corporate website (www.borsaistanbul.com), Indices - Methodologies and Changes page.

7. APPENDIX

Explanations of the terms and definitions used in this Methodology are included in the table in Annex 1.

Annex 1-Terms and Definitions Used in Methodology

Terms and Definitions	Explanations
Value Date	It refers to the settlement date of the transactions
Maturity	Maturity refers to a finite period at the end of which the instrument will no longer exist and the principal is repaid with interest.
Redemption	Redemption is the repayment of the principal and accrued interest on the maturity date specified at the time of issuance of the security.
Settlement price	Settlement price is the price that is used in calculating the settlement amount of a trade.
Fixing Transactions	Fixing transactions are transactions that occur with a difference value (delta value - positive or negative difference from the reference price) compared to a certain reference price.