

TLREFK Turkish Lira Overnight Participation Reference Rate Methodology



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1. INTRODUCTION

1.1 Purpose

TLREFK Turkish Lira Overnight Participation Reference Rate is created by Borsa İstanbul in order to meet the need of Turkish Lira short-term reference rate that can be used as an underlying or a benchmark in participation banks' financial products and different types of financial contracts. The primary objective of TLREFK is to determine the return rate for Turkish participation banks in circumstances where credit, liquidity and other risks are minimal.

1.2 Administration

Borsa İstanbul is responsible, administrator and the owner of the intellectual property rights for the TLREFK rate and BIST TLREFK Index calculated under this Methodology. Due to its position, it has full control over all processes related to the TLREFK rate and the BIST TLREFK Index including creation, determination of Methodology, calculation, publication, practice of operations and oversight.

The tasks and processes related to ensuring the continuity of the TLREFK rate and the BIST TLREFK Index are carried out by the Borsa İstanbul Index Directorate.

1.3 Financial Benchmarks Committee

Financial Benchmarks Committee (Committee) is formed and appointed by Borsa İstanbul for evaluating and implementing relevant opinions and proposals on all and any issues that may be included in the scope of control and oversight of Financial Benchmarks, in order to perform the control and oversight functions described in Article 8 "Control Framework" and Article 9 "Internal Oversight" of Borsa İstanbul A.Ş. Directive on Financial Benchmark Compliant with IOSCO Principles.

The Committee provides governance and internal oversight in regarding all aspects of Financial Benchmark calculation process. Duties and responsibilities of the Committee are basically comprised of determination an announcement of Financial Benchmarks, and creation of Financial Benchmarks, and determination of Methodologies, and calculation of Financial Benchmarks, and publishing and dissemination of Financial Benchmarks, and conduct of related operations for reporting and submission to the Decision-making Body referred to in Article 4 of Borsa İstanbul A.Ş. Financial Benchmarks Management Procedure. The Committee gathers at least once every four months. Duties, responsibilities and the membership structure of the Committee are stated in Article 5 of Borsa İstanbul A.Ş. Financial Benchmarks Management Procedure. All practices can be accessed from the Borsa İstanbul corporate website, Indices - Compliance with IOSCO Principles page.

1.4 TLREFK Committee

TLREFK Committee is established to make recommendations on the activities for the calculation and continuity of TLREFK rate and BIST TLREFK Index and to make the necessary changes in the TLREFK rate taking into account the developments in the market, arising new demands and requests.

The TLREFK Committee consists of representatives from the Turkish Participation Banks Association and Borsa İstanbul A.Ş. The procedures and principles governing the work of the TLREFK Committee are set out in the TLREFK Committee Working Procedures and Principles. Decisions of the TLREFK Committee are taken by consensus and enter into force upon approval by the General Manager of Borsa İstanbul.

1.5 Changes to the Index Methodology

Borsa İstanbul has established a governance and oversight structure consisting of written policies and committees to review the Methodology and conduct consultations with Stakeholders as needed.

This Methodology is regularly reviewed (at least once a year) by the Financial Benchmarks Committee and/or TLREFK Committee to ensure that it continues to reflect the changes targeted by the TLREFK rate and the BIST TLREFK Index.

Need for revision in the Methodology may arise as a result of change requests from Subscribers or Stakeholders and periodic or non-periodic reviews within the scope of the oversight of the Financial Benchmarks.

All changes that are decided to be made in the Methodology are made publicly available on Borsa İstanbul corporate website, Indices - Methodologies and Changes page, accompanied by the relevant explanations and rationale for the revision, before being implemented.

All practices about the Methodology are established and announced by General Manager of Borsa İstanbul with Financial Benchmarks Committee's and/or TLREFK Committee's advice.

1.6 Abbreviations

Included in this Methodology;

- Borsa, Borsa İstanbul: Borsa İstanbul A.Ş.,
- Financial Benchmark: It refers to indices, prices, rates and similar other items which are regularly calculated by using a specific formula or another calculation method, and are presented to users against remuneration or free of charge, and are used in determination of value of a certain capital market instrument, financial contract or product, or in tracking of its rates of return, or in determination of the amount of payment to be made in reliance thereupon, or in determination of asset distribution or portfolio, or in calculation of performance premiums,
- Subscriber: It refers to a person or entity that purchases Financial Benchmark determination services from Borsa İstanbul Financial Benchmarks,
- Financial Benchmarks Committee: It refers to a committee formed and appointed by Borsa İstanbul for evaluating and implementing relevant opinions and proposals on all and any issues that may be included in the scope of control and oversight of Financial Benchmarks, in order to perform the control and oversight functions described in Article 8 "Control Framework" and Article 9 "Internal Oversight" of Borsa İstanbul A.Ş. Directive on Financial Benchmarks Compliant with IOSCO Principles,
- IOSCO: The International Organization of Securities Commissions,
- Methodology: Turkish Lira Overnight Participation Reference Rate Methodology,
- Stakeholder: It refers to Subscribers and other persons or entities who own contracts or financial instruments that reference a Financial Benchmark,
- TLREFK Rate: Turkish Lira Overnight Participation Reference Rate,
- TLREFK Committee: The Committee consists of representatives from the Turkish Participation Banks Association and Borsa İstanbul A.Ş. which is established to make recommendations on the activities for the calculation and continuity of TLREFK rate and BIST TLREFK Index and to make the necessary changes in the TLREFK rate taking into account the developments in the market, arising new demands and requests

2. SCOPE AND CALCULATION METHOD

2.1 Scope

In order to use the transactions that comply with the corresponding market conditions, the buy-sell transactions' return rates that are realized between the seller party with a commitment to repurchase a predetermined security and the buyer party with a commitment to resell that security with next business day expiry, which are secured by TRY capital market instruments and realized on Borsa İstanbul Committed Transactions Market as of 14:00, with the starting value date of the same day, are used in the TLREFK calculations. The following types of transactions are not included in the calculations and transaction types other than those listed below are considered as Eligible Transactions.

- Cross trade transactions
- Non cleared transactions
- Cancelled transactions

2.2 TLREFK Calculation Method

The Turkish Lira Overnight Participation Reference Rate (TLREFK) is calculated as follows:

- All Eligible Transactions (Explained in Article 2.1) traded on any given business day are ranked from the smallest to the largest with respect to the return rate reported on these transactions.
- The top and the bottom 10% of the traded volumes (associated to the highest and the lowest return rates) are detected as outliers and removed from the observations.
- For the transactions which are at the upper and lower bounds, only the part of trading volume which falls in central 80% are included in the calculation.
- TLREFK is calculated as the volume weighted mean of the remaining sample as follows:

$$TLREFK = \sum_{i=1}^n (R_i * V_i) / V$$

Where:

R_i is the return rate;

V_i is the volume corresponding to the rate R_i ;

V is the total volume used for the calculation (sum of V_i).

- TLREFK is reported in percentage per annum (on an actual/365 day count convention).

2.3 BIST TLREFK Index Calculation Method

BIST TLREFK Index is created in order to track the return of TLREFK rate. Since the return of TLREFK rate will be realized on the next trading day, BIST TLREFK index reflects the return that will be realized on the next trading day.

The following formula is used in the calculation of index:

$$Index_t = Index_{t-1} \times [1 + TLREFK_t \times \frac{g}{365}]$$

$Index_t$: Value of the index at day t

$TLREFK_t$: TLREFK rate at day t

g : Duration of overnight buy-sell transactions at day t

2.4 Calculation and Dissemination Times

TLREFK Rate and BIST TLREFK Index calculations are made on the days that BIST Committed Transactions Market is open. The TLREFK value is calculated with the transaction data as explained in Article 2.2 and Article 2.3 as of 15:30 (12:05 on half days) and announced via BISTECH Data Dissemination System at 15:50 on trading days and at 12:35 on half days. The reports showing TLREFK values are shared from "Data Store" (<http://datastore.borsaistanbul.com/>) and at "Data/TLREFK Data" page on Borsa İstanbul's website (<https://www.borsaistanbul.com/en/home-page>) after 16:00 on trading days and after 12:45 on half days.

2.5 Starting Calculation

The starting date of calculation and dissemination of TLREFK and BIST TLREFK Index is June 22, 2022 and the starting value of BIST TLREFK Index is 1000, as of June 21, 2022.

2.6 Data Precision

Data	Data Precision
TLREFK Rates	Rounded to 4 decimal places
BIST TLREFK Index Values	Rounded to 5 decimal places

3. OTHER

3.1 Insufficiency of Input Data

Borsa İstanbul will consider that the data (Explained in 2.1) collected on a given day is not sufficient to calculate

the TLREFK rate if the eligible transaction volume is lower than TL 100 billion. If these data sufficiency conditions are not met, TLREFK rate calculated according to Article 2.2 from eligible transaction volume and TLREF rate of current day are weighted based on the table below to reach the final TLREFK rate.

Eligible Transactions' Volume Ranges	TLREFK Weight (%)	TLREF Weight (%)
TRY 0 ≤ Volume < TRY 5 Billion	0	100
TRY 5 Billion ≤ Volume < TRY 10 Billion	10	90
TRY 10 Billion ≤ Volume < TRY 20 Billion	20	80
TRY 20 Billion ≤ Volume < TRY 50 Billion	50	50
TRY 50 Billion ≤ Volume < TRY 100 Billion	75	25
TRY 100 Billion ≤ Volume	100	0

3.2 Delay in Calculation or Technical Problem

In the case of a problem in the calculation due to any reason and, as a result, unavailability of related reports and values at the scheduled times, the announcements about the delay and the solution are made on the Borsa İstanbul's website at the time until 18:00.

3.3 Temporary Suspension of Calculations

In cases where there is a problem with the calculations due to any reason and the TLREFK rate cannot continue to be calculated temporarily, the Financial Benchmarks Committee and/or TLREFK Committee evaluates the issue. The decisions taken and finalized with the approval of the General Manager of Borsa İstanbul are announced on the Borsa İstanbul website.

3.4 Permanent Cessation

Financial Benchmarks Committee and/or TLREFK Committee may evaluate to cease the calculation due to the fact that TLREFK does not represent the changes aimed to measure, data insufficiency, or changes in applicable laws or market structure, or for other reasons. In this case, "Cessation of Financial Benchmarks" titled Article 8 of "Financial Benchmarks Management Procedure" is applied. The decisions taken and finalized with the approval of the General Manager of Borsa İstanbul are announced on the Borsa İstanbul website.

3.5 Retroactive Correction in Published Values

If an error is detected in a published value, only same day retroactive correction is made by the General Manager of Borsa İstanbul decision and the corrected values are republished. The announcement about the correction is made on the Borsa İstanbul's website.

After 15.30 TLREFK calculation time of current day or on return day, if Takasbank use the its' right of withdrawal from one-side or both-side of transactions, TLREFK Rate is not calculated again.

4. EFFECTIVE DATE

This Methodology takes effect on August 15, 2025. The current version of the Methodology should be confirmed on the Borsa İstanbul corporate website (www.borsaistanbul.com), Indices - Methodologies and Changes page.



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