

TLREFK
TURKISH LIRA OVERNIGHT PARTICIPATION REFERENCE RATE
RULES METHODODOLOGY

1. PURPOSE

Turkish Lira Overnight Participation Reference Rate (TLREFK) is created 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, ~~debt instruments~~ and different types of financial contracts. TLREFK is a measure of the return rate for Turkish participation banks in circumstances where credit, liquidity and other risks are minimal (Underlying Interest).

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. Calculation Method

The Turkish Lira Overnight Participation Reference Rate (TLREFK) is calculated as the volume-weighted mean rate, as follows:

- a) All Eligible Transactions traded on any given business day are ranked from the smallest to the largest with respect to the return rate reported on these transactions.
- b) The top and the bottom 10% of the traded volumes (associated to the highest and the lowest interest rates) are detected as outliers and removed from the observations.
- c) 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.

- d) 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).

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

2.3. Calculation and Dissemination Times

The calculations are made on the days that BIST Committed Transactions Market is open. The TLREFK value is calculated with the transaction data 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.

2.4. BIST TLREFK Index

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

Calculated index values are shared in a similar way and time as specified in the article 2.3 for TLREFK rate.

2.5. Starting Index / Rate 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 Precision |
|--------------------------|-----------------------------|
| TLREFK Rates | Rounded to 4 decimal places |
| BIST TLREFK Index Values | Rounded to 5 decimal places |

3. OTHER

3.1. TLREFK Committee

- TLREFK Committee (Committee) is established in order to oversee the activities regarding the calculation and dissemination of TLREFK rate and BIST TLREFK Index and undertake studies to make necessary changes in the rules based on the market developments, and needs and requirements of the market participants.
- The Committee reviews, at least annually, the current methodology with a view to ensuring that it continues adequately to measure the underlying interest.
- Decisions by the Committee are taken with unanimous of the votes. The Committee is made up of representatives of Borsa İstanbul and Participation Banks Association of Türkiye and The Secretariat of the Committee is carried out by the Participation Banks Association of Türkiye.

3.2. Insufficiency of Input Data

Borsa İstanbul will consider that the data collected on a given day is not sufficient to calculate the TLREFK rate if the eligible transaction volume is lower than TL 6 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 $0 \leq$ Volume < TRY 50 Million | 0 | 100 |
| TRY 50 Million \leq Volume < TRY 500 Million | 10 | 90 |
| TRY 500 Million \leq Volume < TRY 2 Billion | 20 | 80 |
| TRY 2 Billion \leq Volume < TRY 4 Billion | 50 | 50 |
| TRY 4 Billion \leq Volume < TRY 6 Billion | 75 | 25 |
| TRY 6 Billion \leq Volume | 100 | 0 |

3.3. Delay in Calculation/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.

3.4. Temporary Suspension

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 TLREFK Committee evaluates the issue and determines the actions to be taken. The decisions are announced on the Borsa İstanbul website.

3.5. Permanent Cessation

The TLREFK Committee may decide 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.

3.4.3.6. Retroactive Correction in Calculated Values

If an error is detected in a published value, only same day retroactive correction is made by the TLREFK Committee's 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.

3.5.3.7. Follow-up and Management

Maintenance of TLREFK is provided by Borsa İstanbul Index Directorate. Borsa İstanbul as the administrator of TLREFK rate and BIST TLREFK Index regarding this methodology has responsibility for the process of calculating and publishing the rate and the index.

3.6.3.8. Changes in the ~~Rules~~Methodology

All changes about TLREFK ~~Rules~~Methodology are announced on Borsa İstanbul's website with the approval of TLREFK Committee.

3.7.3.9. Nonregulated Subjects

All practices about the subjects, which are not clearly explained or regulated in this document, are decided by TLREFK Committee and announced on Borsa İstanbul's website.

4. EFFECTIVE DATE

This Methodology takes effect on DD/MM/YYYY.