

**Money Market Reference Rate**



**Debt Management Department**  
**Bangladesh Bank**



## **1. Money Market Reference Rate Calculation Methodology:**

### **1.1 Dhaka Overnight Money Market Rate (DOMMR):**

DOMMR shall be published as an unsecured reference rate for 4 (Four) standard tenors: overnight (1 day), 01-week, 01-month, and 03-month.

#### **Data Source:**

DOMMR shall be calculated based on actual transactions in unsecured interbank money market. As all market participants of interbank money market perform all transactions through EDSMoney platform, this benchmark shall use data from EDSMoney system. At this stage, transactions of finance companies shall be excluded in calculating overnight DOMMR.

#### **Calculation:**

The DOMMR shall be calculated for each following business day as a volume weighted trimmed mean of actual interbank money market transactions for each of the standard tenors. The resulting value will be rounded to the second decimal. The volume weighted trimmed mean is calculated by:

Step 1: ordering transactions from the lowest rate to the highest rate;

Step 2: aggregating the transactions occurring at each rate level;

Step 3: removing the top and bottom 15% in volume terms; and

Step 4: calculating the mean of the remaining 70% of the volume-weighted distribution of rates.

This method shall be applied to calculate DOMMR for all rates under standard tenors. Daily overnight rate for DOMMR shall be calculated using the actual transaction of the previous business day. Daily DOMMR for other tenors (01-week, 01-month, and 03-month) shall be calculated using the actual transaction data of last seven business days. If the total volume of transactions of 1-month or 3-month deals is less than BDT 300 crore, no trimming will be applied and full data will be considered to calculate the respective DOMMR. Deals having maturity 05 to 09 days shall be considered to calculate 1-week DOMMR, deals having maturity 25 to 35 days shall be considered to calculate 1-month DOMMR, and deals having maturity 80 to 105 days shall be considered to calculate 3-month DOMMR.

Example: Actual data of (5-9)-day deals from EDSMoney of business days 1, 2, 3, 4, 5, 6 and 7 shall be accumulated, then steps 1-4 shall be used to calculate 1-week DOMMR for business day 8. 01-week DOMMR for business day 9 shall be calculated using the actual data of business days 2, 3, 4, 5, 6, 7 and 8; for business day 10, using the actual data of business days 3, 4, 5, 6, 7, 8, 9, and so on.

### **1.2 Bangladesh Overnight Financing Rate (BOFR)**

BOFR shall be published as a risk-free reference rate for two standard tenors: Overnight (1 day) and 1-week.

#### **Data Source:**

BOFR shall be calculated based on actual transactions in interbank repo market. Interbank repo is fully secured/collateralized by government risk free instruments. This can be a good and available proxy for interbank risk free rate. Interbank repo is conducted using Financial Market Infrastructure (FMI) module of Bangladesh Bank. This benchmark shall use data from FMI module.

**Calculation:**

Step 1: To calculate BOFR for a business day, previous 3 business days' interbank repo transactions data shall be accumulated.

Step 2: Arithmetic mean and standard deviation of the interest rate shall be calculated.

Step 3: All transactions having interest rate within 2 standard deviations from mean interest rate shall be eligible transactions and the others will be treated as outliers.

Step 4: Volume-weighted average interest rate of the eligible transactions will be the BOFR of the day. In effect, this shall be a transaction volume-weighted 3-day moving average after removing outliers.

This method shall be applied to calculate BOFR for all rates under standard tenors. Deals having maturity 05 to 07 days shall be considered to calculate 1-week BOFR.

Example: Data of actual interbank repo transaction data of business days 1, 2 and 3 shall be accumulated, then volume-weighted average after removing outliers shall be calculated to find BOFR for business day 4. BOFR for business day 5 shall be calculated using the actual data of business days 2, 3, 4; for business day 6, using the actual data of business days 3, 4, 5, and so on.

**2. Data Sufficiency and Contingency Plan:**

If reported number of transactions in overnight is less than 10 with regular data period, most recent additional business day(s) data shall be accumulated to have minimum 10 transaction data. If reported number of transactions in other tenors is less than 5 with regular data period, most recent additional business day(s) data shall be accumulated to have minimum 5 transaction data.

If data of any particular tenor is completely absent, linear interpolation/extrapolation can be used to calculate the rate of the tenor. Formula for linear interpolation will be:

$$i = i_1 + \frac{(i_2 - i_1)}{(t_2 - t_1)}(t - t_1)$$

i= interest rate of the target tenor

t = target tenor

i<sub>1</sub> = interest rate of the shorter tenor

i<sub>2</sub> = interest rate of the longer tenor

t<sub>1</sub> = shorter tenor than target tenor

t<sub>2</sub> = longer tenor than target tenor