FBIL OVERNIGHT MIBOR

Methodology Document

16th August 2017

Version 2

FBIL Overnight MIBOR will be computed on daily basis as per the following methodology:

Computation Methodology

1. All trades executed on NDS-Call system excluding reciprocal and reported deals within the first hour of trading (currently from 9.00 A.M. to 10.00 A.M.) will be used for computation of the new benchmark - FBIL-Overnight MIBOR (FBIL Overnight Mumbai Inter-Bank Outright Rate). The trades will be pulled out from the NDS-CALL system immediately after the cut-off time.

2. Only T+0 settlement deals will be picked.

3. For any working day, the maturity of the deals picked for computation of FBIL Overnight MIBOR will be the next Mumbai Business Day, excluding Saturdays. For example, if Friday is a holiday but the following Monday is a Mumbai Business working day, FBIL Overnight MIBOR calculation on the previous Thursday will pick trades with a maturity of 4 days. Only trades for `5 crore and above will be retained for further calculation.

4. A minimum of 10 trades with an aggregate traded value of `500 crore and more in the NDS-Call segment will be taken as the threshold criteria for estimation of the volume-weighted average rate.

5.In case either of the criteria mentioned above is not met, the timeframe for computation of rates will be extended by 30 minutes first and if both the threshold criteria are still not met, then by another 30 minutes. If both the threshold criteria are still not met after the two time extensions, the fall back procedure will be initiated as explained in serial number 12 onwards.

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6. The Weighted Average Rate and Standard Deviation (STDEV) will be calculated for the retained trades that satisfy both the threshold criteria. These numbers will be rounded off to two decimal places.

7. A rate range will be computed – Maximum will be Weighted Average Rate + 3* Standard Deviation and Minimum will be Weighted Average Rate - 3* Standard Deviation.

8. Any trade at rates outside the above-mentioned Maximum and Minimum range will be considered as outliers and dropped from the data (i.e. Higher than Maximum and Lower than Minimum).

9. The final volume-weighted average rate and standard deviation will then be computed using the remaining trades. The said numbers would be rounded off to two decimal places at each stage.

10. The rate so calculated will be released as FBIL-Overnight MIBOR for the day by 10.45 A.M on the websites of FBIL / FIMMDA and CCIL or such websites as may be notified. If the time is extended due to non-fulfillment of any of the threshold criteria, the dissemination time will be suitably extended.

11. In case the threshold criteria is not met after two time extensions, Data can be augmented with reported deals of only Hour 1 (H1) in NDS-Call system to satisfy both the threshold criteria on days when they are not met.

12. In order to include such reported deals, the following stringent outlier criteria is required to be followed:

o Mean and Standard Deviation are to be computed using only NDS-Call Dealt trades (if there are at least 3 trades) as per the process explained in Point No. 6.

o The Standard Deviation so calculated will be used for outlier criteria in respect of reported deals.

o Any trade fulfilling the "+/-2SD" criteria can be included in the data for augmenting the data set for meeting the threshold criteria.

13. Reported deals will be only used when there are a minimum of 3 trades in the Dealt segment. If all such trades happen to be done at the same rate, the SD will be equal to zero. On such occasions, reported deals will be selected applying +/- 2SD criteria calculated on the basis of the previous day's Dealt trades (as explained in Point No. 6). If SD is equal to zero for the Dealt segment of the previous day as well (till the closure of the prescribed time window for MIBOR computation on previous day), then the SD will be calculated using a weighted-average scheme as given below:

o   Seven closest previous working days each with non-zero variance will be identified. The variance in respect of each day will be multiplied by the volume of dealt trade of that day (MIBOR window only) and then a weighted average of variance will be calculated. The square root of the weighted average variance will be the SD to be used for selection of deals in the Reported segment using the "+/-2SD" range criterion.

Table – 1: An example Volume Weighted Variance and Standard Deviation

	SD	Variance (SD^2)	Volume	Volume*Variance
D1	0.25	0.0625	1500	93.75
D2	0.18	0.0324	850	27.54
D3	0.08	0.0064	754	4.83
D4	0.67	0.4489	689	309.29
D5	0.35	0.1225	1145	140.26
D6	0.48	0.2304	975	224.64
D7	1.02	1.0404	1540	1602.22
SUM		1.9435	7453	2402.53
AVG (Variance)				0.3224
Standard Deviation				0.5678

14. The Benchmark MIBOR will be computed only if the criteria of minimum 10 trades and aggregate volume of `500 crores are met after including the Reported deals of Hour 1 (H1) in the data set.

15. Further, if minimum of 3 dealt trades do not happen even after two 30 minutes extensions (currently 11.00AM) in NDS-Call Dealt segment, the Reported deals will not be used for the day. On such occasions, no rate will be estimated for the day.

16. If all the fallback efforts for calculating FBIL Overnight MIBOR, as explained above, fail, then the previous working day's FBIL Overnight MIBOR will be published for the day.

17. Each month end CCIL will conduct divergence tests2 to observe if the data in respect of reported deals are structurally diverging from that of the data in respect of the dealt trades. If the mean and variance of the data in respect of the reported deals are found to be statistically different (using T -Test), CCIL will not use reported trades for augmenting the data for calculation of FBIL Overnight MIBOR for the following month. In such eventuality, from the 3rd working day of the following month, the fall back mechanism, as detailed in point 15 and 16 will be used instead for calculation of FBIL Overnight MIBOR. If the next month-end test shows that there is no divergence, the reported trades will get included thereafter. If the test reveals continuance of divergence, the fall-back mechanism will also continue to be operative, as in the foregoing, till convergence of data emerges again.

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Reference:

MUMBAI INTER-BANK OVERNIGHT RATE (MIBOR) – Benchmark Calculation and methodology (Technical Document by Golaka C Nath, Member, FBIL OC)

FBIL Overnight MIBOR (Mumbai Interbank Outright Rate) – Technical Document by Golaka C Nath, Member, FBIL OC