**Market Consultation on FBIL Error Policy- Material threshold
for Error Re-fix for Government Securities**

FBIL as the benchmark administrator has taken over the publication of G-Sec and SDL Valuations from FIMMDA with effect from March 31, 2021. In terms of the guidelines issued by RBI both the G-Sec and SDLs have been identified as significant benchmarks and FBIL has been authorized by the RBI for continuing publication of the G-Sec and SDL valuation prices.

2.   FBIL has adopted appropriate governance framework by way of constituting an Oversight Committee for exercising oversight over the calculation and publication of all its benchmarks. It has invested in building the requisite infrastructures, including the information technology systems and business continuity facilities. It has adopted measures to identify and mitigate operational risks involved in the determination and publication of all its benchmarks.

3.   While utmost care is taken to calculate and publish benchmarks with accuracy, it is possible and probable that on rare occasions, including because of discrepant data input and technical issues, etc. errors may occur. For errors detected post publication a need may arise for a revision of the published benchmark by way of re-fix of the same.

4.   The global norms including the regulatory framework involving benchmark administration have also emphasized on the need of formulating a suitable error policy by benchmark administrators.

(a) Principle 11 of the **IOSCO** (International Organization of Securities Commissions) Principles of Financial Benchmarks dealing with Content and Methodology, among other things, state as under:

'At a minimum, the methodology should contain:

…..e) The procedure for dealing with error reports, including when a revision to the benchmark would be applicable;'

The Report of the RBI Committee on Financial Benchmarks, in its paragraph 5.11 (iv) recommended that benchmark Calculation Agent must lay down clear policies to handle any issue arising out of any error in calculation of benchmarks.

"As benchmark administrator is responsible for this kind of errors, ground rules need to be defined so that utmost care is taken in calculating and publishing the benchmarks and market disruption is avoided by dealing with such situation according to pre-defined rules".

5.Accordingly, FBIL has framed the Error Policy for all the significant benchmarks including G-Sec and SDL Valuation. FBIL is seeking market feedback on the materiality of errors threshold in respect of G-sec and SDL.

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It may be mentioned that on the basis of preliminary discussions with the market participants it was proposed to keep a materiality threshold of 7 basis points for error re-fix for G-Sec/SDL. However, based on further discussions within FBIL, a detailed study has been carried out to assess the level of average changes in the G-Sec YTMs over a period of time to validate the proposed error materiality threshold for error re-fix.

a) **Data Analysis**:

FBIL has carried out an analysis of the average market movement at various points of the G-sec yield curve. G-sec traded data have been taken from January 2018 to August 2021, covering a period of 44 months. Attempt has been made to analyse the market movements in the G-Sec in the pre-pandemic and the pandemic period. The month end date being very critical from valuation perspective, has been chosen for collection of ISIN level data. Additionally, during this period, all the monetary policy announcement dates have been included to understand the impact of policy announcement on the movement of yield in various segments of the G-Sec yield curve. Thus, the observations on 22 monetary policy days have been included in the analysis.

Total number of days considered for this analysis = 66

For the purpose of analysis, all the traded ISINs with residual maturity >1 Year have been taken. Total 81 ISINs have been considered for this analysis. To estimate the market movement, we have calculated the market movement for a particular trading day for an ISIN as $YTM_t - YTM_{t-1}$. Absolute value of each spread is taken for calculation.

Bucketing:

The ISINs have been segregated as per residual maturities and have been grouped under 5 maturity buckets to understand if the average spread in the various maturity buckets is different and exhibits some trend. The maturity buckets are as under,

Residual Maturity	Bucket
1-5 Years	Bucket 1
>5-9 Years	Bucket 2
> 9-11 Years	Bucket 3
>11-15 Years	Bucket 4
>15 Years	Bucket 5

Result and Analysis:

Case1: Month-end Dates:

2018-19					
	Bucket1	Bucket2	Bucket3	Bucket4	Bucket5
Mean	0.02	0.03	0.03	0.02	0.03
Standard Error	0.00	0.00	0.00	0.00	0.00
Median	0.02	0.03	0.03	0.02	0.03
Standard Deviation	0.00	0.01	0.00	0.00	0.00
Sample Variance	0.00	0.00	0.00	0.00	0.00
Kurtosis	-0.82	-0.08	-1.03	7.10	2.88

Skewness	-0.09	0.69	0.11	2.61	1.54
Range	0.01	0.02	0.01	0.01	0.02
Minimum	0.02	0.02	0.02	0.02	0.02
Maximum	0.03	0.04	0.03	0.03	0.04
Count	19	14	6	8	14
Confidence Level(95.0%)	0.00	0.00	0.00	0.00	0.00

2020-21					
	Bucket1	Bucket2	Bucket3	Bucket4	Bucket5
Mean	0.03	0.03	0.03	0.02	0.03
Standard Error	0.00	0.00	0.01	0.00	0.00
Median	0.03	0.03	0.03	0.02	0.03
Standard Deviation	0.02	0.01	0.02	0.01	0.01
Sample Variance	0.00	0.00	0.00	0.00	0.00
Kurtosis	3.33	0.45	0.26	5.73	-1.69
Skewness	1.96	0.88	-0.45	2.35	0.08
Range	0.06	0.02	0.05	0.03	0.03
Minimum	0.02	0.02	0.00	0.02	0.01
Maximum	0.08	0.04	0.05	0.05	0.05
Count	26	17	8	11	19
Confidence Level(95.0%)	0.01	0.00	0.01	0.01	0.01

2018-21- Combine period					
	Bucket1	Bucket2	Bucket3	Bucket4	Bucket5
Mean	0.03	0.03	0.02	0.02	0.03
Standard Error	0.00	0.00	0.00	0.00	0.00
Median	0.03	0.03	0.03	0.02	0.03
Standard Deviation	0.02	0.01	0.01	0.00	0.01
Sample Variance	0.00	0.00	0.00	0.00	0.00
Kurtosis	4.68	1.08	2.82	4.62	-0.60
Skewness	2.40	1.00	-1.39	2.06	0.06
Range	0.06	0.02	0.04	0.02	0.03
Minimum	0.02	0.02	0.00	0.02	0.01
Maximum	0.08	0.04	0.04	0.04	0.04
Count	26	17	8	11	19
Confidence Level(95.0%)	0.01	0.00	0.01	0.00	0.00

Case2: Monetary Policy announcement dates:

2018-19					
	Bucket1	Bucket2	Bucket3	Bucket4	Bucket5
Mean	0.09	0.08	0.09	0.08	0.06
Standard Error	0.00	0.00	0.00	0.00	0.00
Median	0.09	0.08	0.09	0.08	0.07
Standard Deviation	0.00	0.01	0.01	0.00	0.01
Sample Variance	0.00	0.00	0.00	0.00	0.00
Kurtosis	-1.05	0.49	1.28	3.00	0.42
Skewness	0.22	0.39	0.95	1.54	-1.26

Range	0.02	0.03	0.02	0.01	0.05
Minimum	0.08	0.07	0.08	0.07	0.03
Maximum	0.10	0.10	0.10	0.09	0.08
Count	19	14	6	8	14
Confidence Level(95.0%)	0.00	0.00	0.01	0.00	0.01

2020-21					
	Bucket1	Bucket2	Bucket3	Bucket4	Bucket5
Mean	0.08	0.07	0.04	0.05	0.05
Standard Error	0.00	0.00	0.00	0.00	0.00
Median	0.09	0.07	0.05	0.06	0.05
Standard Deviation	0.02	0.02	0.01	0.01	0.01
Sample Variance	0.00	0.00	0.00	0.00	0.00
Kurtosis	-0.51	-0.61	0.55	1.24	-0.39
Skewness	-0.68	-0.07	-1.26	-0.96	-0.78
Range	0.06	0.05	0.04	0.03	0.03
Minimum	0.05	0.04	0.02	0.04	0.03
Maximum	0.11	0.09	0.06	0.07	0.06
Count	26	17	8	11	19
Confidence Level(95.0%)	0.01	0.01	0.01	0.01	0.00

2018-21					
	Bucket1	Bucket2	Bucket3	Bucket4	Bucket5
Mean	0.09	0.07	0.06	0.06	0.05
Standard Error	0.00	0.00	0.01	0.00	0.00
Median	0.09	0.08	0.07	0.07	0.06
Standard Deviation	0.02	0.01	0.02	0.01	0.01
Sample Variance	0.00	0.00	0.00	0.00	0.00
Kurtosis	-0.15	1.47	0.31	0.26	-0.54
Skewness	-1.01	-1.48	-1.41	-1.26	-0.76
Range	0.06	0.05	0.05	0.04	0.04
Minimum	0.05	0.04	0.02	0.04	0.03
Maximum	0.11	0.09	0.07	0.07	0.07
Count	26	17	8	11	19
Confidence Level(95.0%)	0.01	0.01	0.02	0.01	0.01

Observation:

i. It may be observed that in all the 44 month end dates, the average and median spread have been 2-3 basis points across all the 5 buckets. The range has been maximum 6 bps in bucket1, whereas in other buckets the range is between 2 to 5 bps. The maximum spread has been 3 bps (Bucket1) for 2018-19, 8 bps (Bucket1) for 2020-21.

ii. In case of Monetary Policy announcement days, the market movement has been higher on average basis. For 2018-19 and 2020-21, maximum means were observed for bucket1 which are 9 bps and 8 bps respectively.

iii.   Thus, it has been observed that the average market movement for almost all maturity buckets is below 7 bps for both cases. In case of monetary policy dates, the market movement is above 7 bps for most of the buckets in 2018-19.

Recommendation:

Based on the above analysis, considering the market movement during the month end dates as well as monetary policy dates, there may be a case for having different materiality threshold for error re-fix based on maturity profile of G-sec and SDL as under:

a) The materiality threshold for error re-fix of G-sec/ SDL up to 9 years maturity segment can be kept at 7 bps and

b) The materiality threshold for error re-fix of G-sec/ SDL above 9 years maturity segment can be kept at 5 bps.

Impact of Materiality Threshold on the G-Sec prices:

Security Description	Modified Duration	Published Price (₹)	Published YTM	Modified YTM1	Modified YTM2	Modified Price1	Modified Price2	Difference1	Difference2
6.10% GS 2031	7.26	99.08	6.22%	6.29%	6.27%	98.57	98.72	(0.51)	(0.36)
6.45% GS 2029	6.85	103.07	6.01%	6.08%	6.06%	102.58	102.72	(0.49)	(0.35)
7.26% GS 2028	6.84	106.1	6.39%	6.46%	6.44%	105.59	105.74	(0.51)	(0.36)
7.17% GS 2028	6.57	95.03	7.93%	8.00%	7.98%	94.59	94.72	(0.44)	(0.31)

- 6.10% GS 2031: The yield and price are taken on 30-Aug-2021.
- 6.45% GS 2029: The yield and price are taken on 29-Jun-2020.
- 7.26% GS 2028: The yield and price are taken on 30-Jul-2019.
- 7.17% GS 2028: The yield and price are taken on 30-Aug-2018.

Modified YTM1= Published YTM+7 bps
Modified YTM2= Published YTM+5 bps
Modified Price1= Price calculated based on Modified YTM1
Modified Price2= Price calculated based on Modified YTM2
Difference1= Difference between Modified Price1-Published Price
Difference2= Difference between Modified Price2-Published Price

FBIL is seeking feedback from the market participants on the above proposal/recommendation. Feedback / suggestion in this regard may please be submitted to the CEO, FBIL at ceo@fbil.org.in or at itsystemadmin@fbil.org.in by December 11, 2021.

Chief Executive Officer