



**Consultation paper for determining uniform methodology for pricing of non-traded and thinly traded non convertible debt securities**

**I. Objective:**

1. To solicit the comments/views from public on the proposed uniform methodology for determining price for non-traded and thinly traded non convertible debt securities ("NCDs" hereinafter).

**II. Background:**

2. Corporate bond markets are becoming more and more dynamic given the growing number of issuers, diverse set of institutional investors, growing variety and complexities of products and changing dynamics of interest rates.
3. The secondary market of bonds however remains lacklustre owing to various reasons. The data given below provides the average trading in the total outstanding ISINs in the FY 2017-18<sup>1</sup>.

Period	Average number of ISINs traded	Total outstanding ISINs	% of ISIN traded vis a vis outstanding ISIN
Daily	160	18137	0.88%
Month	1253	18137	6.91%
Annually	5226	18137	28.81%

Thus, as can be seen from the abovesaid data, on an average, not even 1% of the total outstanding ISINs are traded daily.

4. For the institutions, which hold debt securities in their portfolio, there has to be a mechanism for finding the fair price of these securities, basis which they can value their portfolios and/or trade them. Further, the mechanism shall be so that the values derived should be through a uniform and transparent process.
5. The requirement of such a framework also assumes importance in view of the fact that a large number of such investors belong to categories such as mutual funds, insurance companies and pension/retirement funds which have a mandate of daily NAV with an exit

<sup>1</sup> Data source - Crisil



facility at any point of time for their investors. This requires a reliable and accurate price of the outstanding securities on a daily basis.

6. Availability of such a uniform pricing framework, will ultimately lead to improvement in liquidity in the secondary market and thus will help in deepening the bond markets.

### III. Current State of affairs

7. The August 2016 report of the Working Group on Development of Corporate Bond Market in India chaired by Shri H R Khan, makes an observation on the current state of pricing norms for corporate bonds in India. The observation made in the report is as under:

*"Currently, RBI and IRDA have advised their regulated entities to follow credit spread matrix published by FIMMDA to value their corporate bond portfolio. FIMMDA publishes spread for different ratings under various issuer segments like banking, NBFC, corporates, etc. It is recognised that FIMMDA, though a quasi self-regulatory organisation, is not a regulated entity. Mutual funds, however, have been, following matrix published by credit rating agencies (CRAs). CRAs are bound by the code of conduct under SEBI (Credit Rating Agencies), 1999 to address possible issues of conflict of interest. Further, Mutual Funds require daily pricings as they have an obligation to publish net asset value of their schemes on a daily basis. However, FIMMDA rates and prices for corporate bonds are calculated on a monthly basis. Use of different sources for pricing of corporate bond portfolio by regulated entities adversely impact trading in the secondary market."*

8. The report further, proposes, following on the matter:

*'a uniform pricing methodology available on a daily basis may be followed by all the regulated entities for pricing of their holdings of corporate bonds. All regulators may explore an acceptable mechanism for pricing including engaging the Financial Benchmarks India Pvt. Ltd. (FBIL) or credit rating agencies for the same with necessary safeguards and regulatory oversight'.*

9. Thus, as have been observed in the HR Khan Committee report the current practice of pricing of corporate bonds varies for different classes of regulated entities and this impact trading in the secondary market. It has therefore been recommended that a uniform pricing methodology be evolved, which provides prices on a daily basis and may be followed by all the regulated entities for valuing their corporate bond portfolio.

**IV. Consultation with market participants**

10. SEBI consulted with representatives of various market participants and industry bodies such as Association of Mutual Funds in India (hereinafter "AMFI") and Fixed Income Money Markets and Derivatives Association (hereinafter "FIMMDA"). A stock of the current set of pricing methodologies was taken and as identified in HR Khan committee report, there are primarily two different methodologies are currently being followed, one administered by FIMMDA and the other by credit rating agencies.
11. These methodologies were discussed amongst market participants, representatives of FIMMDA, AMFI and regulators viz. SEBI, RBI, IRDA and PFRDA.

**V. Need for review and proposed framework**

12. The most accurate price of any security can be ascertained from the prices at which that particular security trades in the market. However, as in the case of most of the debt securities, there is hardly any trading and thus alternative mechanisms need to be devised for such calculation of price.
13. Current practices for pricing of corporate bonds have significant divergences and thus impacts both the valuation of the investor's portfolio and the trading of such securities among them. Therefore, for an investor in corporate bonds a reliable methodology for pricing is desirable, where such methodology reflects the current market situation and the process used for calculation of such prices is uniform and standardised.
14. This would help an institutional investor in not only ascertaining the value of holding of debt securities in its portfolio, but also in providing exit to its investors, taking appropriate risk management decisions and helping in secondary trading.
15. It is also felt that a single reference price would not be achieved by prescribing a principle or methodology, however it will generate daily closing prices which would be derived by following a consistent methodology for all the bonds in the market and would thus be more suitable and timely.
16. The proposed methodology has been framed keeping in mind the fact that pricing illiquid debt securities is as much an art as science, hence making the process completely objective may neither be possible nor is desirable. Further, the idea is of providing uniformity to the process, while not taking away the judgement of a pricing agency.

17. The framework proposes to streamline the process flow and various variables used within the framework for pricing, this is to ensure that market players will be confident of these pricings, will believe in its accuracy and rely on it for transacting.
18. Further, it is felt that with fairly consistent reference price, market participants will have a starting point to begin trading these debt securities and this ultimately may act as a catalyst to spur trading volumes.
19. Accordingly it is proposed to have a uniform methodology for pricing of non-traded and thinly traded NCDs, which is placed at **Annexure- A** for public comments.

#### **VI. Public comments**

20. Public comments are invited on the proposed framework as at **Annexure-A**. The comments, may be sent by **email or through post**, latest by **June 18, 2018**, in the following format:

<b>Details of Responder</b>	
Name <sup>1</sup> /Organization: <sup>1</sup> if responding in personal capacity	
Contact number:	
Email address:	

<b>Comments on consultation paper</b>			
Sr. No.	Para No.	Comment/proposed change	Rationale

While sending email kindly ensure the subject is "**Comments on the Consultation paper for determining uniform methodology for pricing of debt securities**"

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**Proposed framework for determining uniform methodology for pricing of non-traded and thinly traded NCDs**

A Corporate bonds is typically valued by discounting the stated cash flows using the yields derived from a certain process. Most of the bonds can be valued using a standardised waterfall approach, however there may be certain classes of non-vanilla bonds such as tax free bonds, perpetual bonds, etc. where the standard approach as proposed herein may not be suitable.

Thus for a non-vanilla security, the pricing agency shall determine the list of such type of bonds and the deviations proposed in the standard methodology for valuing such non-vanilla bonds. However, such revised methodology shall be made available in the public domain.

Further, as highlighted above, a large number of investors in debts securities are mutual funds, insurance companies and pension/retirement funds, which require prices on a daily basis as they have a mandate of daily NAV with an exit facility at any point of time for their investors. Thus, the methodology proposes that the pricing exercise shall be undertaken by the pricing agency on a daily basis.

The draft methodology given under is arranged in following order:

- Meaning and context of various terms used in the methodology are proposed in the paper.
- Details of the methodology for undertaking pricing activity for bonds.
- Approach of construction of spread matrix.
- Pollers and polling methodology
- Dissemination of the pricing related information

**1. Meaning and context of various terms**

**A. Definitions:**

For the purpose of this framework, unless the context otherwise requires, the terms defined herein shall bear the meanings assigned to them below and shall be construed accordingly:

- a) "Pricing agency" shall mean a corporate entity which undertakes the daily pricing activities and is regulated by either of SEBI or RBI and complies with following requirements:



- i. a minimum net worth of INR 10 crore;
  - ii. shall not price a bond, which it has issued itself;
  - iii. has not less than two employees, each with at least 5 years of relevant working experience in areas related to bond trading or bond pricing;
  - iv. necessary infrastructure in terms of systems, security and contingency arrangements, for undertaking activities as an bond pricing agency;
  - v. shall maintain complete records of its operations related to bond pricing including audit trail of the process and activity for at least seven years;
  - vi. the entity, its key personnel's and its directors are fit and proper persons in terms of following:
    - integrity, reputation and character;
    - absence of convictions and restraint orders;
    - competence including financial solvency and network;
    - absence of categorization as a willful defaulter .
  - vii. where a shareholder in the pricing agency is a credit rating agency (CRA) or the CRA is itself the pricing agency, adequate measures must be taken so as to mitigate any conflict of interest between the rating operations and the pricing operations. Further, full independence shall be ensured of the operations of the pricing agency.
- b) "Bonds" shall mean non convertible debt securities issued by any corporate in India;
- c) "Securities" shall mean Non Convertible Debt Securities (NCDs), Commercial Papers (CPs) and Certificate of Deposits (CDs);
- d) "T- day" shall mean the day for which price is being calculated for a bond;
- e) "Trade/issuance" shall mean following trades/issuances:
- i. all trades in securities, value of which is Rs. 5 crore or above;
  - ii. all primary issuances of securities, value of which is Rs. 25 crore or above.
- f) "Cut off time" shall mean timings within which any trade/issuance reported will be taken into account while determining the price of bonds and such timings shall be between 9 am to 5 pm of T-Day.



**B. Other parameters:**

The proposed pricing framework shall be operationalised in context of the parameters as defined here under

a) Similar Maturity:

- i. While calculating price of a bond the primary reference is the prices at which trades have happened in that bond. However, in the event where no such trades have happened, the nearest approximation is the trades in a security which is issued by the same issuer and whose residual tenor matches that of the bond, whose price is to be determined.
- ii. While matching the residual tenor of two securities, it may not be possible to match the exact tenor. In such cases, the industry practice is to make various buckets of residual tenors of the bonds, which are to be priced, and match them against the securities which are maturing within a certain time frame. Thus, for a particular bucket of residual tenor, all the securities maturing in a particular time frame can be used. These are categorized as similar maturity security.
- iii. The proposed criteria to be followed for such categorization shall be as under:

<b>Residual tenor of bond, which is to be priced</b>	<b>Buckets in which the security is maturing</b>
Upto 3 months	Calendar Fortnightly bucket
Greater than 3 months to 1yr	Calendar Monthly bucket
Greater than 1yr to 3yr	Quarterly bucket
Beyond 3 years	Half yearly bucket

- iv. Following example will provide a greater clarity in this matter:

The price of a bond ABC, which is maturing on June 01, 2019, is to be calculated on May 01, 2018. Since the residual tenor of bond ABC lies between 1 year to 3 year, in terms of the aforesaid criteria, any security maturing between April 01, 2019 to June 30, 2019, will be categorised as similar maturity security.

Thus, trades in any such similar maturity security can be used for the purposes of determining price of bond "ABC".

b) Similar issuer:

- i. Where the trades/issuances are not available for the similar maturity securities of the same issuer, a close approximation is the trades/issuances for the similar maturity securities of another issuer, where such issuer matches in terms of industry, rating etc., Such kind of reference issuers are categorised as similar issuer.
- ii. For the purpose of identification of a “similar issuer” under the proposed framework, following criteria may be considered:
  1. Issuers within same sector/industry
  2. Issuers within same rating band
  3. Issuers with same parent/ within same group with similar financials i.e. net worth, debt equity ratio, similar borrowings frequency, etc.
  4. Issuers with debt securities having same guarantors
- iii. The aforesaid criterion are broad principles and the pricing agency shall determine the manner of identification of the similar issuers, in terms of the criteria above. However, the methodology so used shall be made available in public domain.

c) VWAP when multiple trades/ issuances:

- i. In cases where there are multiple trades/issuances of any particular security, in such cases volume weighted average price (VWAP) of all the trades/ issuance price shall be used for determining the price under aforesaid framework.
- ii. This is given the fact that the trades in these securities are far and few and the last traded price (LTP), of a security at times may be an aberration or may not represent the existing market levels. Thus, to deal with such issues, VWAP is proposed.
- iii. Further, a study was conducted for a period of 16 month starting from 01.01.2016 and it was noted that the deviation between the yields calculated as per VWAP and LTP was less than 5 bps in respect of 94% of the ISINs traded during the period. Further, it was also noted that in respect of a significant number of ISINs the number of trades was just one or two and thus the VWAP and the LTP were the same.



d) Outlier trades:

- i. The prices of the securities at which they are traded, basis which all the calculation is carried out, is not traded price but reported price viz. price at which the transfers have taken place on bilateral basis and then subsequently reported on exchanges.
- ii. Thus, it would be critical to identify and disregard trades which are aberrations, which do not reflect market levels and may potentially lead to mispricing of security or group of securities.
- iii. The below-said criteria is proposed to determine 'outlier trade(s)', which shall be disregarded while calculating the VWAP of the trades:
  1. Securities with rating of AA and above, in case the residual tenor of securities is less than 1 year, any trade outside of plus minus 50 bps from the previous days yield of the security should be construed as an outlier trade.
  2. Securities with rating of AA and above, in case the residual tenor of securities is 1 year or more than 1 year, any trade outside of plus minus 25 bps from the previous days yield of the security should be construed as an outlier trade.
  3. Securities with rating below AA irrespective of residual tenor of such securities, trades outside of plus minus 50 bps, from the previous days yield of the security should be construed as an outlier trade.

e) Exceptional events:

- i. It is understood that there are certain exceptional events, occurrence of which during market hours may lead to significant change in the yield of the debt securities. Hence, such exceptional events need to be factored in while calculating the price of the securities.
- ii. Thus, for the purpose of calculation of VWAP of trades and identification of outliers, on such exceptional events date, rather than considering whole day trades, only those trades shall be considered which have occurred post the event (on the same day). The pricing agency, while providing the prices shall however disclose the timings beyond which trades have been considered.
- iii. Therefore, there is a need of identifying such events so that there is a defined set of such exceptional events available to all the pricing agencies. This will help in bringing uniformity across all the pricing agencies and will bring objectivity to the

entire process. The following events are therefore proposed to be identified as exceptional events for the purpose of this framework:

1. Monetary / Credit policy
2. Union budget
3. Government borrowing / Auctions days
4. Material statements on sovereign rating

iv. Based upon the experience gained with this framework, the list of exceptional events may be expanded at a later stage.

## **2. Proposed methodology for undertaking pricing activity**

For determining the price of any particular bond, following waterfall mechanism shall be followed. The mechanism and the operating framework of the same is as under:

### **A. Mechanism**

For determination of the price of a bond "X" issued by an issuer "Y", the pricing agency shall follow the below-said waterfall mechanism.

#### **a) Step 1: Trade in X:**

- i. Pricing agency shall use T-day trade data of the bond "X".
- ii. If there are more than one trade then value weighted average price (VWAP) of all such trades shall be used to determine the price. Outliers, if any, to be excluded.
- iii. In case no trade has taken place on T-day, move onto step 2.

#### **b) Step 2: Secondary Trade of similar maturity security of issuer "Y":**

- i. Pricing agency shall use the T-day trade data of any other security by issuer "Y", where such security is of similar maturity as that of bond "X".
- ii. If more than one trade has taken place in such security, then VWAP of all such trades shall be used to determine the price. Outliers, if any, to be excluded.
- iii. In case no trade has taken place in the same issuer similar maturity bucket on T-day, move onto step 3.

**c) Step 3: Primary issuance of same issuer similar maturity:**

- i. Pricing agency shall use the price at which the primary issuance of a security by issuer "Y" has taken place on T-day, where such security is of similar maturity as that of bond "X".
- ii. If there are more than one issuance of securities within similar maturity bucket, then VWAP of all such issuances shall be used to determine the price.
- iii. In case there are no issuance of a security in the same issuer similar maturity bucket, on T-day, move onto step 4.

**d) Step 4 :Secondary Trade of similar issuer similar maturity:**

- i. Pricing agency shall use the T-day trade data of a security by any other issuer, where such security is of similar maturity as that of bond "X" and the issuer is categorised within the definition of similar issuer as that of issuer "Y".
- ii. If more than one trade has taken place in such security, then VWAP of all such trades shall be used to determine the price. Outliers, if any, to be excluded.
- iii. In case no trade has taken place on in the similar issuer with similar maturity security on T-day, move onto step 5.

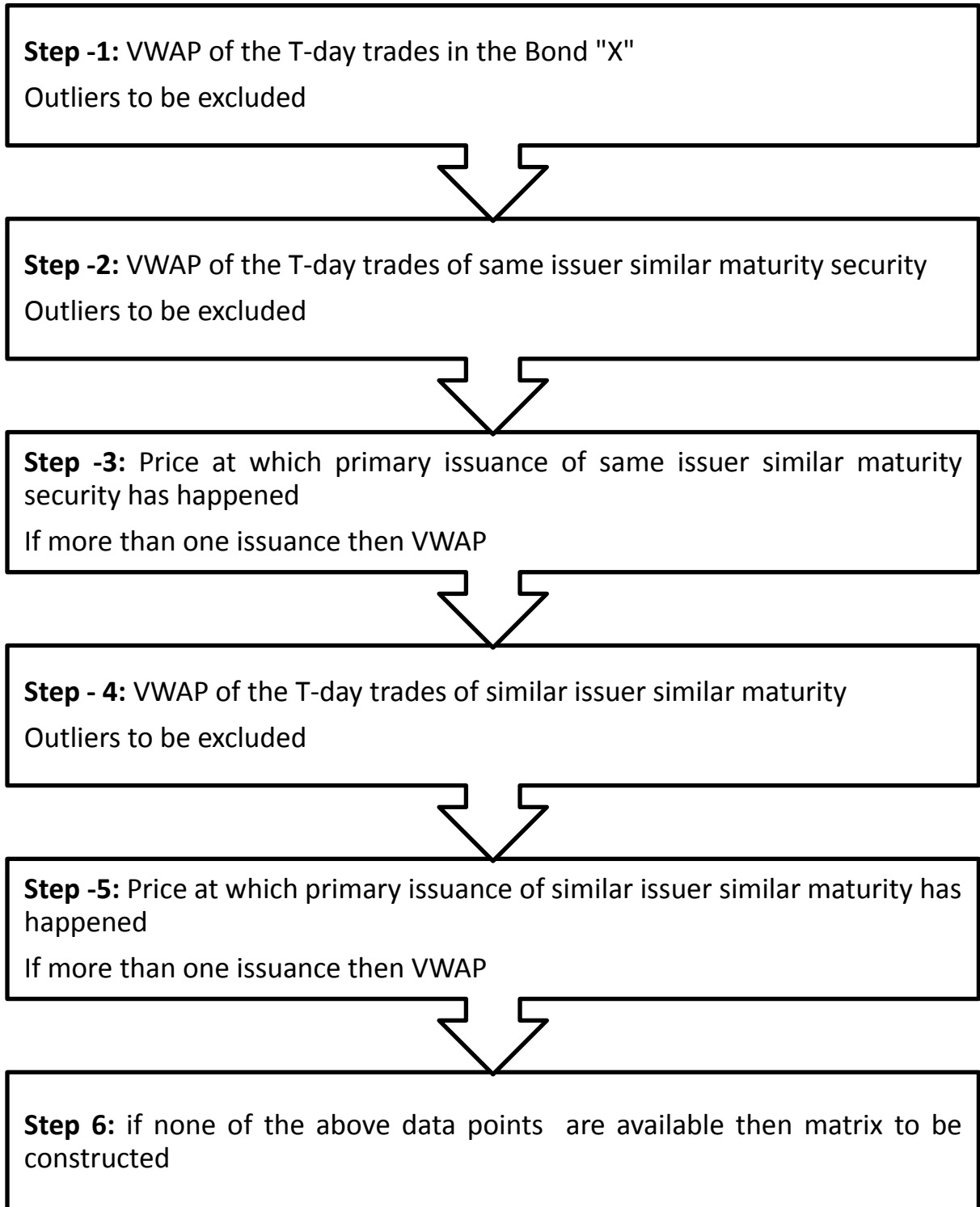
**e) Step 5: Primary issuance of similar issuer similar maturity:**

- i. Pricing agency shall use the price at which the primary issuance of a security of any other issuer has happened on the T- day, where such security is of similar maturity as that of bond "X" and the issuer is categorised within the definition of similar issuer as that of issuer "Y".
- ii. If there are more than one issuance of securities within similar maturity bucket, then VWAP of all such issuances shall be used to determine the price. Outliers, if any, to be excluded.
- iii. In case no issuance of a security, of similar issuer with similar maturity, has taken place on T-day, move onto step 6.

**f) Step 6: Construction of matrix:** This step would involve construction of yield spread matrix by the pricing agency. The construction of matrix shall be done in terms of framework as defined under at Point 3 below.



Pictorial representation of the aforesaid waterfall mechanism for pricing:



### **3. Approach for construction of spread matrix:**

In cases where the pricing of bonds is not possible in terms of process as mentioned between Step 1 to Step 5 of Point 2 above, than to calculate prices of such bonds, spreads are to be determined on certain representative securities of such bonds. The manner of identification of such representative issuers and calculating spreads is as under:

#### **a) Segmentation of corporates**

- i. The entire corporate sector is first categorised across following four sectors i.e. all the corporates will be catalogued under one of the below mentioned bucket:
  1. Public Sector Undertakings/Financial Institutions/Banks;
  2. Non Banking Finance Companies - except Housing Finance Companies;
  3. Housing Finance Companies;
  4. Other Corporates

#### **b) Representative issuers**

- i. For the aforesaid 4 sectors, representative issuers shall be chosen by the pricing agency for each of the rating (i.e. between "AAA" or equivalent to "D" or equivalent).
- ii. The spreads have to be determined for the representative issuers, so chosen, for any particular sector. The spreads determined shall be used for valuing bonds issued by the corporates identified within that particular sector
- iii. The manner of identification of the representative issuers shall be as defined by the pricing agency and such methodology shall be made available in public domain.

#### **c) Calculation of spreads and construction of matrix**

- i. Spreads for any particular sector shall be determined in the following way:
  1. Spreads to be calculated for representative issuers in entire rating spectrum, for securities with following residual maturities of 0.5, 1, 2, 3, 4, 5, 7, 10, 15, 20, 25 and 30 years.



2. The trades/primary issuances carried out in a security(ies) of such representative issuers, wherever available, shall be taken as trades for the purpose of calculation of spreads.
  3. In the event of no data related to trades/primary issuances in the securities of the representative issuer is available, polling shall be conducted from market participants to gauge from the price at which a particular security may be priced at. Further, while seeking market polling no concept of outliers shall be applicable.
  4. The spreads calculated from either of secondary trades on securities of such issuers, primary issuances of securities or from the market poll can then be depicted in form of a matrix.
  5. Priority of inputs while constructing the matrix shall be in the order of secondary market trades, price at which primary issuance has happened and then market polls. If polls are not available for a particular reference, interpolation of existing data is to be used.
- ii. The principles of VWAP, outlier trades and exceptional event shall be applicable while constructing the matrix on the basis of trades/primary issuances.
  - iii. The credit rating to be used for the representative issuers shall be latest and shall not be more than 12 months old. Also, in case there are two credit ratings, the lower rating to be considered.
  - iv. Residual tenor of the securities of representative issuers shall be used calculation of spreads.
  - v. Polling shall be undertaken with a minimum quorum of atleast 7 pollers, where such pollers are identified from the universe of pre identified pollers.

#### **4. Pollers and Polling Methodology**

##### **a) Governance framework**

- i. While constructing a matrix for pricing, one of the very important parameters is the polls by the market participants, which provide their view on the yields of securities across different sectors and ratings.





- ii. The “Uniform code of Conduct for submitters” issued by FIMMDA<sup>2</sup>, provides the governance framework for pollers. The document, inter-alia, provides the various compliances, policies and procedures to be followed by a poller and the manner of polling.
- iii. The aforesaid "Uniform code of conduct for submitters" is proposed to be the guiding structure and a framework for pollers shall be finalised in terms of the aforesaid Uniform code and the proposals contained in this framework. Comments/inputs, if any on the aforesaid code may also be forwarded along with the comments on the other proposals in this paper.

#### **b) Universe of pollers**

- i. A universe of pollers shall be identified among following regulated financial sector entities viz. insurance companies, pension/provident funds, banks, mutual funds, brokers, primary dealers and merchant bankers. Only such entities, of the aforesaid class of entities, shall be included in the universe of pollers which deal in the corporate bond markets and which comply with uniform code of conduct as referred at para 4(a) above.
- ii. From the universe of pollers, entities which are required to poll for any particular day shall be identified as per the methodology devised by the pricing agency. The methodology shall also provide for a rotation policy and the methodology needs to be disclosed in public domain. Further, entities who have been identified for polling on any particular day, shall be mandatorily required to poll.
- iii. All, the Financial sector Regulators would be requested to prescribe the same to their regulated entities.

#### **5. Dissemination of the data in public domain**

- a) The pricing provided by the different pricing agencies may be made available by them, on a daily basis, on their website for public at large. This will ensure that any kind of back-testing and/or verification could be easily done.
- b) However, to ensure that the commercial interest of the pricing agencies is preserved, such pricing data may be made available to public at large after a delay of one day.

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<sup>2</sup><http://www.fimmda.org/Uploads/general/UnifiedCodeofConductforSubmittersofallBenchmarks21stNovember2014-new.pdf>