Marginal Default Rate and Cumulative Default Rate Computation Approach

A. BACKGROUND

SEBI, vide its circular No SEBI/ HO/ MIRSD/ DOS3/ CIR/ P/ 2019/ 70 dated June 13, 2019 issued revised guidelines for Credit Rating Agencies (CRAs) as regards Computation of Long run and Short run average Cumulative Default Rates (CDR) based on Marginal Default Rates (MDR) approach using monthly static pools.

CRAs are required to disclose, on an annual basis, the average one-year, two-year and three-year cumulative default rates (based on weighted average) each for: a) Last 10-financial years period (Long-run average default rates) and b) 24, 36 and 48 most recent cohorts, respectively (Short-run average default rates).

In order to enable investors to discern the performance of a CRA vis-à-vis a standardised PD benchmark scale, SEBI also advised CRAs to disclose standardised and uniform PD benchmarks on their websites for ratings of long-term and short-term instruments.

B. THE APPROACH:

1. Static Pool: Non-defaulted ratings that were outstanding at the beginning of any period.

2. Default: Non-payment of interest or principal amount in full on the pre-agreed date. Default is recognised at the first instance of delay in servicing of interest or principal on the rated debt instrument.

3. Default Rate: The number of defaults among rated entities in the static pool as a percentage of the total number of entities in the static pool.

4. Averaging: All averaging across static pools for default rate computations is carried out based on the weighted average method where the weights are the number of ratings in each static period.

5. Cohort: Cohorts consists of the total issuers of a particular rating category at the beginning of the year of study.

6. Marginal Default Rate (MDR): MDR is defined as the number of entities defaulting in a particular year in a specific rating category as a proportion of the number of entities in that rating category in the cohort at the beginning of the year under study, adjusted for withdrawals. As advised by SEBI, Monthly Static Pools are used for computation of MDRs.

7. Cumulative Default Rate (CDR): CDR captures the default rate over one or more-than-one-year horizon. In calculating the CDR the weighted average marginal default rates (MDRs) of the various cohorts are used, the weights being the number of issuers in the cohorts.

C. Calculation of CDRs.

Calculation of CDRs is explained below.

Calculation of 1-year, 2-year, 3-year CDRs using the MDRs.

Step 1 : Compilation of Static Pool of a rating category for a particular year.

e.g. all the outstanding ratings as on March 31, 2020 in rating category B is compiled. This static pool remains the same for the calculation of CDRs for different periods.

Step 2: Calculation of MDRs

Terms used:

C – Initial Static Pool

D1 – Defaults* during Year 1

D2 – Incremental Defaults during Year 2

D3 – Incremental Defaults during Year 3

W 1 – Withdrawals* during Year 1

W 2 – Incremental Withdrawals during Year 2

W 3 – Incremental Withdrawals during Year 3

MDR 1 : Marginal Default Rate for Year 1

MDR 2 : Marginal Default Rate for Year 2

MDR 3 : Marginal Default Rate for Year 3

CDR 1 : Cumulative Default Rate for One Year

CDR 2 : Cumulative Default Rate for Two Years

CDR 3 : Cumulative Default Rate for Three Years

*(*Defaults and Withdrawals from the initial Static Pool).*

Using the above inputs, Marginal Default rates for Year 1, Year 2 and Year 3 are calculated as under:

MDR 1 = D1 / (C-W1)

MDR 2 = D2 / (C-W1-D1-W2)

MDR 3 = D3 /(C-W1-D1-W2-D2-W3)

Using the MDRs calculated as above, Cumulative Default Rates (CDRs) for One Year, Two Years and Three Years are calculated as under:

Issuer weighted average MDRs are calculated for the required period.

MDRs mentioned below are Issuer weighted Average MDRs.

The calculation of CDR1 (1- year CDR) is straightforward as it is equal to MDR1 since both represent a single year.

Thus, CDR1 = MDR1

In case of CDR2 (2 - year CDR) the default rate of year 1 is taken into consideration and the conditional probability of the issuers surviving the first year (using their survival rate) multiplied by the default rate of year 2 (MDR2).

So, CDR2 = MDR1 + (1 – MDR1) * MDR2

= 1 – (1 – MDR1) * (1 – MDR2)

CDR2 is the sum of default rate of year 1 and the probability that a firm which has survived year 1 or the survival rate (1 - MDR1) multiplied by the default rate of year 2 (MDR2).

Similarly, 3- year CDR (CDR3) can be calculated using a similar formula,

CDR3 = MDR1 + (1 - MDR1) * MDR2 + (1 – MDR1) * (1 – MDR2) * MDR3

= 1 – (1 – MDR1) * (1 – MDR2) * (1 – MDR3)

The reasoning for this is similar to that of CDR2.

Short-run and Long Run CDRs

Short -run CDRs would comprise average default rates for 24, 36 and 48 most recent cohorts for CDR1, CDR2 and CDR3 respectively.

Long-run CDRs would be average default rates over a longer period of last 10-financial years. Since Infomerics commenced rating operations for February 2016, calculation of Long-run CDRs is not applicable at present. However, computation of Long-run CDRs is presently carried out on the data from the commencement of rating operations.

Notes:- -

1) In order to adjust for rating withdrawal, all the ratings withdrawn during the year are excluded from the initial static pool.

However, in case of Securities, as per SEBI Guidelines, the withdrawn ratings are included in the computation of default rates till the completion of the cohort or the maturity of the instrument, whichever is earlier (this arises on account of a provision for early rating withdrawal permitted by SEBI, in case of repayment of 50% of the debt or 3/5 years based on certain conditions). Accordingly, all Debenture Trustees (DTs) are required to report to Infomerics any delays/ default in payment on debentures for the lifetime of the instrument, irrespective of the rating on that instrument being withdrawn.

2) For ratings on non-structured instruments, various instruments of an issuer with equal seniority level and having same rating are not included separately for default rate calculation.

However, various instruments of an issuer having different seniority levels are included as separate instances, subject to a cap of three instances across all rating categories put together.

3) For ratings on structured instruments, various instruments, issued by a trust, with the same degree of seniority and hence having same rating are not included separately for default rate calculation. However, various instruments, issued by a trust, having different seniority levels are included as separate instances. Further, in order to avoid under-estimation of default rates in case of significantly higher number of tranches of differing seniority but same rating, a cap of three tranches per rating category per issuer is applied.

D. Rating of Non Co-operative Issuers

As advised by SEBI, ratings of non- co-operative issuers are included in the cohort under the rating category in which the instrument is currently being rated.

E. Computation & Disclosure of two additional CDRs for credit ratings of Securities that are listed, or proposed to be listed, on a recognized stock exchange.

SEBI vide circular no. SEBI/HO/DDHS/DDHS-RACPOD2/P/CIR/2022/ 113 August 25, 2022, advised that in addition to the above disclosures, which include non-cooperative issuers and various types of credit ratings, CRAs are also required to disclose, separately, two other CDRs limited to credit ratings of securities that are listed, or proposed to be listed, on a recognized stock exchange:

i. CDR (ii), wherein ratings of non-cooperative issuers shall be included in the cohort under the rating category in which the instrument is currently being rated.
ii. CDR (iii), wherein ratings of non-cooperative issuers shall be excluded in the cohort under the rating category in which the instrument is currently being rated.

Accordingly, the above-mentioned two additional CDRs are computed and disclosed in respect of credit ratings of Securities that are listed, or proposed to be listed, on a recognized stock exchange.

All the above-mentioned CDR related disclosures are made by Infomerics on its website.

*****