CARE's DEFAULT & TRANSITION STUDY FY21

Summary

CARE commenced its rating activity in 1993 and has over the years acquired considerable experience in rating various types of debt instruments issued by corporates belonging to wide range of sectors including Manufacturing, Services, Banking, Non-Banking Finance, Infrastructure, Public Finance, Securitisation etc.

The publication of this default and transition study is an endeavour of CARE towards increasing transparency of its ratings. Default rates are influenced by a number of factors and the general state of the economy is one of the key determinants. On the back of challenging economic environment in past couple of years, the overall annual default rate of CARE's rated universe has risen to some extent. On the back of Pandemic in FY21, GDP registered a negative growth of 7%. However, at the same time average annual default rate also fell to 2.7% in FY21, mainly due to regulatory forbearance provided by Reserve Bank of India. Trend of annual default rate of CARE's portfolio of issuers and the economic growth has been discussed in brief in further section in this report.

CARE's ratings have shown good discriminatory power across rating categories with higher rated categories generally having lower default rates following the principle of ordinality. The median rating of CARE's rated population has progressively shifted from A category at the end of March 2008 to BB category in March 2013 and remained there since then. Almost 70% of the issuers in the CARE's rated universe are from non-investment grade rating categories. At the same time, the median default rating category has also been BB till FY18, after which it moved to B in FY19.

This report also presents the transition study of various rating categories of CARE rated issuers. The Average One-year Transition Rates for CARE rated issuers have shown a high degree of stability. Higher rated categories have consistently exhibited higher stability rates.

Default Study

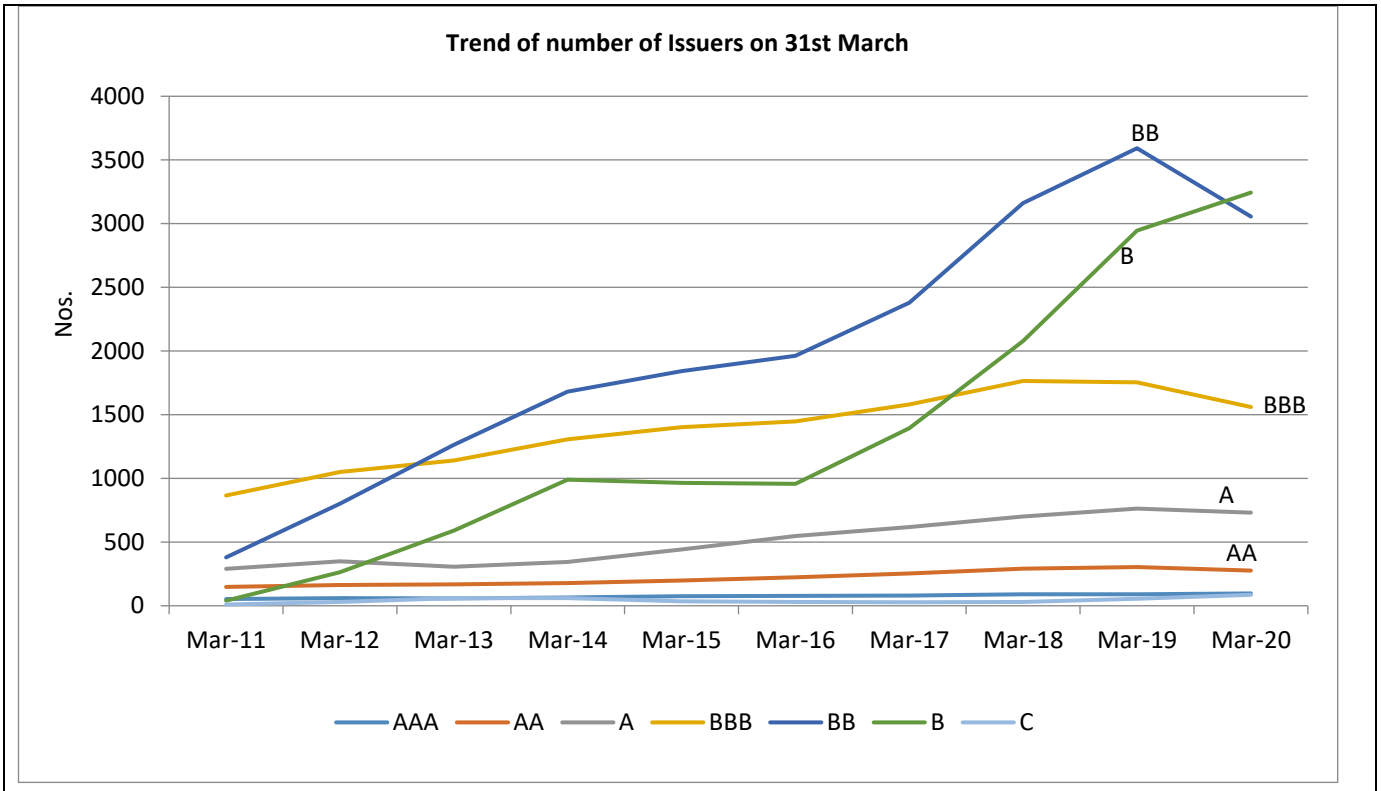
This section examines default experience of CARE's long-term ratings for the period March 2011 to March 2021. CARE has used yearly Cohort's method to calculate the performance of CARE rated entities across various rating categories. Also, this study uses senior most rating of each issuer. The difference between this study and SEBI prescribed default study is elaborated in the Annexure to this study. Category-wise Cumulative Default Rate (CDR) is calculated for each yearly cohort within the period of study. The CDR is calculated over one, two and three year time horizons to evaluate the performance of ratings over varying periods. The issuer weighted average for one-year, two-year and three-year CDR is computed for each rating category. As ratings are a measure of Probability of Default, a higher rating given to an entity implies lower credit risk and should therefore have lower CDR and CARE's CDR numbers generally display this property. CARE's definition of default for this CDR study and detailed methodology for computing CDR is presented in the Annexure.

The CDR study includes ratings of issuers across all sectors – including Manufacturing, Services, Banking, Non-Banking Finance, Infrastructure and Public Finance. Ratings of Structured Obligations (SO) / Credit Enhanced (CE) ratings are not part of this study which would comprise securitisation transactions, ratings backed by third-party guarantees, instruments with a structured payment mechanism, instruments backed by credit enhancing guarantees / letter of comfort etc.

Static Pool / Cohort

- The study tracks the long-term ratings assigned and accepted by the issuer and is based on issuer-specific data and not instrument-specific data (thus counting an issuer only once).
- The rating of senior-most long-term debt of an issuer is considered as the rating of that issuer. If CARE has not rated the long-term instrument of that issuer, then the medium-term rating is considered as the issuer's rating.
- **Static pools / Cohorts** for the study are the number of issuers outstanding in each rating category at the beginning of each cohort falling within the study period. So, calculation of 1-Year default rate for the period of 10 financial years i.e. the period of FY2012 to FY2021 will have 10 yearly cohorts starting from March 2011 till March 2020. Default experience of each rating category for each cohort is examined over one, two and three year periods.

Trend of rating category-wise number of issuers outstanding at the beginning of each cohort is presented in the chart below:



	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20
Median Rating	**BBB**	**BBB**	**BB**	**BB**	**BB**	**BB**	**BB**	**BB**	**BB**	**BB**
Median Rating of defaulted entities	**BB**	**BB**	**BB**	**BB**	**BB**	**BB**	**BB**	**B**	**B**	**B**

Key Observations

- With implementation of Basel II approach for credit risk measurement by RBI, a new era was ushered in the credit rating industry in India. Subsequent to the period March 2008, overall number of issuers increased multiple times. A structural shift was witnessed in the rating universe and there was a significant increase in issuers rated below AA category.
- In India, the banking sector still remains the primary source of debt funding for majority of corporates and prior to Basel II implementation, bank borrowings of companies used to be unrated. Post Basel II implementation, many of these corporates with bank borrowings got rated which led to the manifold increase in number of issuers, especially in the lower grades. Now, almost 70% of the issuers in the CARE's total rated portfolio are from non-investment grade rating category.

- The median rating of the rating universe has moved progressively down from A at the end of March 2008 to BBB till March 2012 and has been BB since March 2013.
- Traditionally the corporate bond market in India is skewed towards higher rated entities, with extremely low investor demand for lower rated paper. As a result, lower rated entities rarely used to get rated and acceptance of those ratings was also extremely low in the pre-Basel II era. Therefore, the rating universe primarily comprised higher rated borrowers in that period. In a way the trend continues with majority of the rated securities placed in the market having high ratings even today.

CARE's Cumulative Default Rate

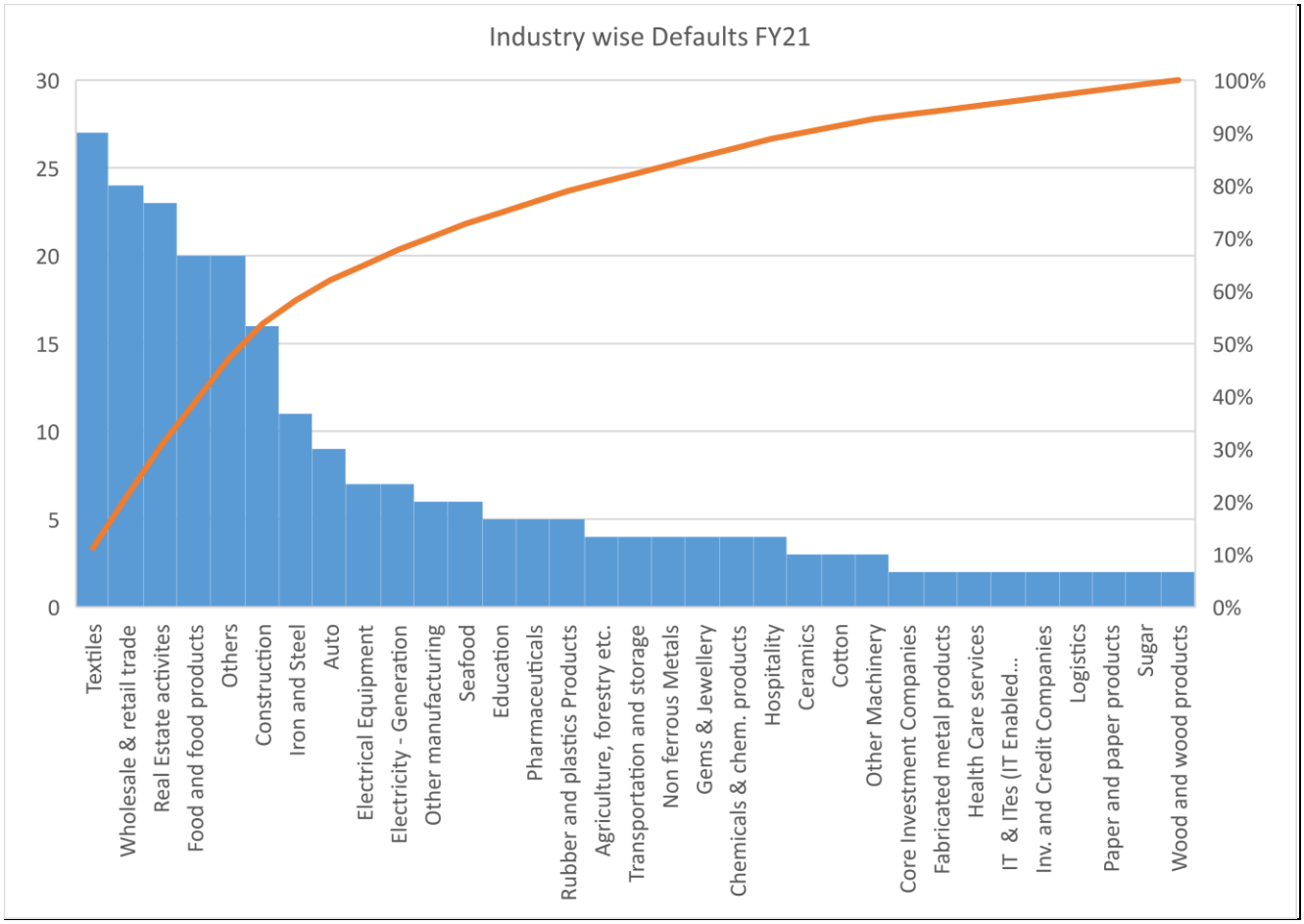
CARE's average issuer weighted cumulative default rates usually follow the principle of ordinality and are lower in the higher rating categories and increase as we move down the rating categories (as presented in Table 1 below)

Table 1: CARE's Issuer Weighted Cumulative Default Rates for the period March 2011 - March 2021

	One year		Two Year		Three Year	
Rating Category	**Avg. No. of Issuers**	**CDR**	**Avg. No. of Issuers**	**CDR**	**Avg. No. of Issuers**	**CDR**
AAA	75	0.27%	72	0.77%	70	1.43%
AA	220	0.32%	214	1.04%	203	1.54%
A	509	0.53%	485	1.61%	450	3.00%
BBB	1,388	1.53%	1,368	3.80%	1,320	6.03%
BB	2,012	4.10%	1,896	7.45%	1,684	10.32%
B	1,347	6.56%	1,136	11.91%	910	15.88%
C	42	25.12%	37	35.12%	35	36.43%
Total	**5,593**	**3.69%**	**5,209**	**6.76%**	**4,672**	**9.17%**

The categories of AA, A, BBB, BB, B and C include ratings with the suffix '+' or '–' within the respective categories. Thus, for instance, the AA category includes three ratings: AA+, AA and AA-.

Industry wise defaults in FY21



As the number of issuers in each industry are limited, it would not be really meaningful to find out overall industry wise default rates.

Transition Study

Rating transition study looks at how ratings have changed over a period of time, an important aspect analysed by CARE to evaluate the stability/migration of its ratings.

Methodology for transition rates

Methodology used by CARE for studying rating transition is discussed below:

- The static pools / cohorts are created by grouping issuer wise ratings according to the year in which the ratings are active and outstanding at the beginning of the year. The study tracks the long-term ratings assigned and accepted by the issuer on a year-to-year basis.
- The study is based on issuer-specific data and is not instrument-specific. Thus, it counts an issuer only once and avoids distortion.
- The transition study includes ratings of issuers across all sectors – including Manufacturing, Services, Banking, Non-Banking Finance, Infrastructure and Public Finance. Structured Obligations (SO) / Credit Enhancements (CE) ratings are not a part of this study.
- Individual cohorts have been formed for each year; total ten cohorts have been prepared for the period of study. Each individual cohort for a given financial year consists of the ratings outstanding in various rating categories at the beginning of the financial year and tracks the changes in rating, if any, during the one-year period therefrom. For example, the March 2011 cohort represents the ratings outstanding as on March 31, 2011 and their transitions or changes (upgrades, downgrades and re-affirmation) in the subsequent year till March 31, 2012.
- Since the rating of an issuer both at the beginning and the end of a study period is required for the computation of transition rate, any issuer whose rating has been withdrawn / suspended / placed under 'Issuer Not Cooperating' category during the year have been removed from the relevant opening cohort for the purposes of this study. This is also in line with the SEBI circular dated 13th November 2018.
- Data from all individual cohorts have been pooled together to obtain the weighted average transition rates across rating categories.

  The following table shows issuer weighted average transition rates for different rating categories over the period March 2011 to March 2021.

Table 3: Average 1-year Rating Transition Rates for the period March 2011 - March 2021

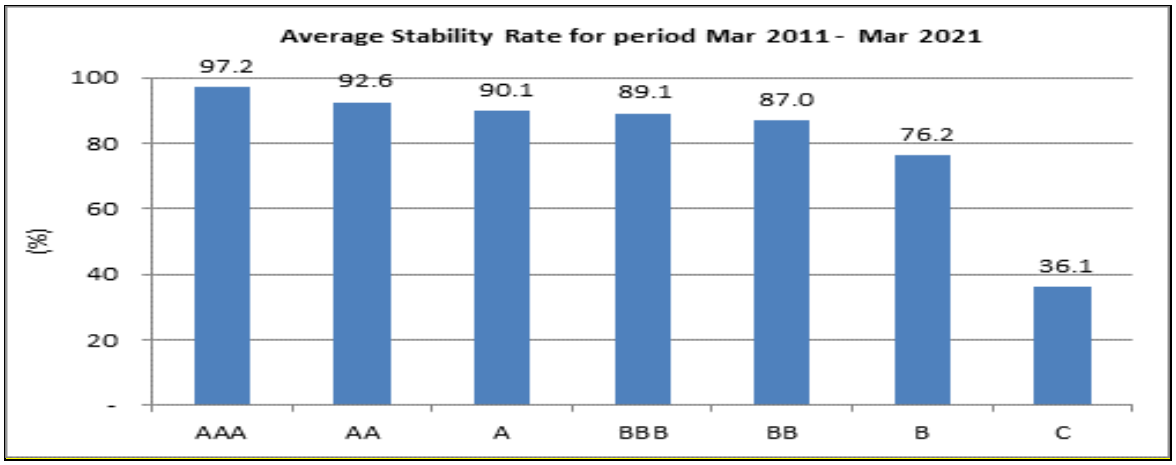
(%)	AAA	AA	A	BBB	BB	B	C	D
AAA	97.24	2.34	0.14	0.00	0.00	0.00	0.00	0.28
AA	1.30	92.56	5.47	0.14	0.19	0.05	0.00	0.29
A	0.00	3.16	90.06	5.64	0.58	0.09	0.02	0.45
BBB	0.00	0.03	4.24	89.10	4.97	0.27	0.04	1.35
BB	0.00	0.00	0.01	5.02	86.98	3.20	0.19	4.61
B	0.00	0.00	0.02	0.09	14.28	76.18	0.44	8.98
C	0.00	0.00	0.00	0.99	8.42	21.78	36.14	32.67

The categories of AA, A, BBB, BB, B and C include ratings with the suffix '+' or '–' within the respective categories. Thus, for instance, the AA category includes three ratings: AA+, AA and AA-.

From the above average one-year transition matrix, it can be inferred that out of all the AA rated companies at the beginning of the year, 92.6% have remained in the same AA category, 1.3% have been upgraded to AAA and 6.1% have been downgraded. Similar interpretation can be done for other rating categories as well. The highlighted diagonal in the above table represents the average stability rate of a particular rating category in one year.

Stability of Ratings

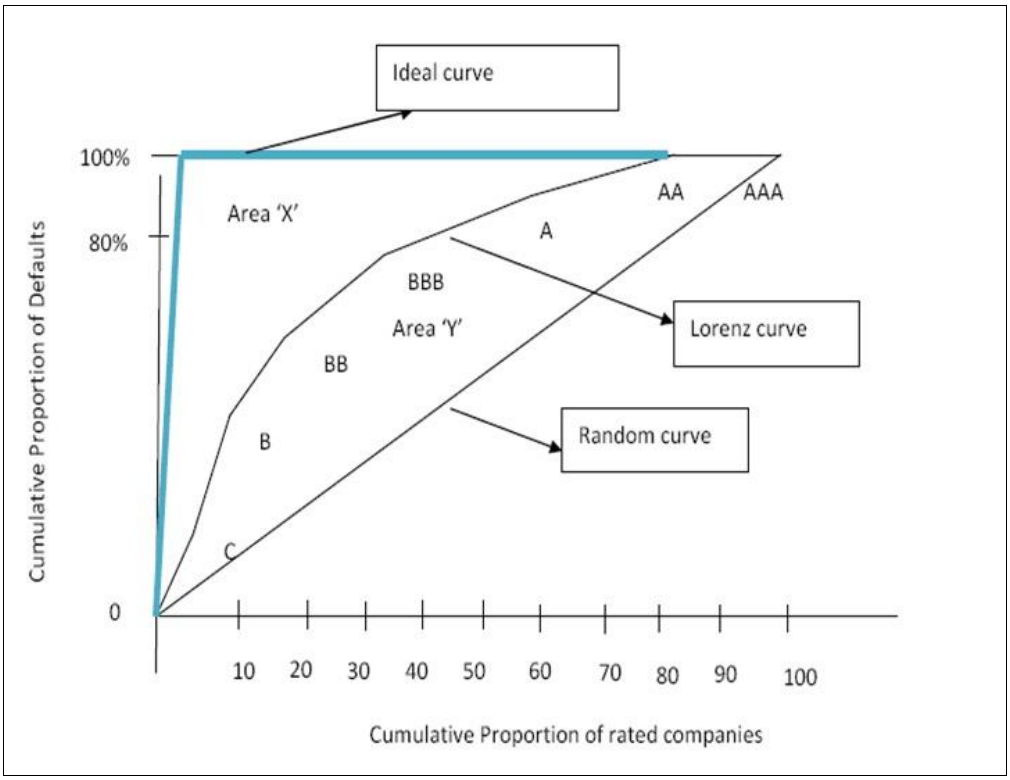
Stability rate for each rating category indicates percentage of ratings remaining in the same category at the end of one year. One-year average stability of CARE's ratings during the period Mar 2011 - Mar 2021 is presented in the chart below:



Stability rates of higher rating categories have generally been higher than those for the lower rating categories. CARE's higher rating categories like AAA, AA and A exhibit high level of stability rate above 90% within one-year period.

Gini Coefficient

The long-term ratings data considered to compute Gini Co-efficient is issuer-specific and not instrument-specific (i.e. counting an issuer only once). The rating of senior most long-term debt has been considered for all issuers. Issuers having long term ratings for securities as well as bank facilities are considered in the data set. Ratings of structured obligations / securitization ratings / credit enhancements are excluded. Moreover, any issuer whose rating has been withdrawn or placed under 'Issuer Not Cooperating' category during the year is omitted from cohorts of outstanding ratings. Defaults in the period of 1 year are considered for all cohorts.



Area X – Area between Ideal curve and Lorenz curve
Area Y – Area between random curve and Lorenz curve
Gini Coefficient = Y / (X+Y)

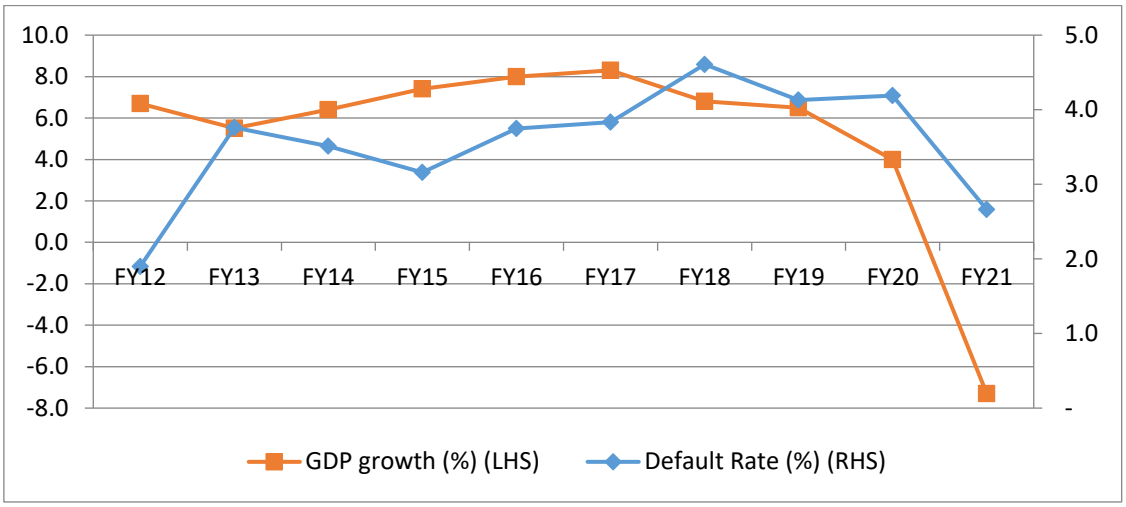
Above chart is a pictorial representation (not to scale) of Lorenz curve and Ideal curve. Ideal curve represents a situation where all defaults happen from the lowest rating category and other higher rating categories have no defaults. To plot the Lorenz curve, coordinates for each rating category are - cumulative proportion of defaults till that rating category (on Y axis) and cumulative proportion of issuers till that rating category (on X axis). For example, 34% of total outstanding issuers rated by CARE upto rating category BB and below (in the cohort March 2020) accounted for about 79% of total defaults. So, coordinates for BB in above plot will be 34% on X axis and 79% on Y axis. Closer the Lorenz curve to the Ideal curve, higher is the Gini Coefficient or Accuracy ratio.

CARE Ratings average Gini Coefficient for One Year defaults during the period FY12 to FY21 was 0.5.

Trend of Default rate and GDP Growth

The following chart presents the relationship between GDP growth rate and overall annual default rate for the CARE Rated entities:

Table 4: Year-wise trend of GDP Growth rate and overall annual default rate (FY12 to FY21)



Note:
1. Overall annual default rate is a ratio of total defaults in a particular year to the total non-defaulted issuers at beginning of that year. For example, overall annual default rate for FY21 refers to default rate of a static pool of total non-defaulted issuers outstanding as on March 31, 2020.
2. GDP Growth for 2012-13 onwards has been calculated based on 2011-12 prices.

The general state of the economy gets depicted in the overall annual default rate to some extent. As the economic growth rate decreased to 5.5% in FY13, the overall annual default rate of CARE's rated universe had registered increase to about 3.7% in FY13. Thereafter, as the economic growth improved to about 8.3% till FY17, overall annual default rate showed a decline for next couple of years and remained more or less at same level of 3.8% till FY17. On the back of challenging economic environment in past couple of years, the GDP growth has reduced considerably, the overall annual default rate of CARE rated universe has risen to a level of about 4.1% in FY20. On the back of Pandemic in FY21, GDP registered a negative growth of 7%. However, at the same time average annual default rate also fell to 2.7% in FY21, mainly due to regulatory forbearance provided by Reserve Bank of India.

One can see substantial change in investment grade default rates as shown below in FY21:

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Investment Grade 1 Year Default rate	0.74	1.17	0.96	0.48	1.42	1.39	1.22	1.62	1.44	0.49

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Annexure I

Definition of Default for the Study

For the purpose of this study, default has been defined as any missed payment on the rated instrument i.e. a single rupee delay even for a single day has been treated as default. A default recognition criterion for bank facilities is specifically detailed in our website.

Concept of Static Pool / Cohort

Static Pool / Cohort for the study is the number of issuers outstanding in each rating category as on a given date. Default experience of each rating category is examined over the study period. New issuers during the study period are not considered and in that sense the data pool remains static. If the rating of the company included in the cohort gets withdrawn, it is treated as withdrawal for the further period for other cohorts. If the company whose rating is included in the cohort defaults, it is treated as default for the rest of the period of the cohort.

However, those entities, which are rated again after withdrawal or which recover from default (and are rated again), are taken as new entities for relevant subsequent cohorts.

Structured obligation (SO) / Credit Enhancements (CE) ratings are not part of this study. CARE's structured obligation ratings include Asset Backed Securitization (ABS), Mortgage Backed Securitization (MBS), obligations of state level entity backed by state/central government guarantee and instruments backed by credit enhancing guarantees / letter of comfort etc.

Cumulative Default Rate (CDR)

Cumulative Default Rate (CDR) shows the number of defaults from a given static pool as a proportion of total issuers in that static pool and provides an estimate of default rate over a period of one year, two years and three years. For a given static pool, three-year CDR is computed as follows:

Three-Year CDR = No. of issuers which defaulted over the three-year period / No. of issuers outstanding at the beginning of the three-year period.

A hypothetical example is presented here:

	Cohort 1			Cohort 2		
	Opening Issuers (A)	Defaults during next 3 years (B)	**3 Yr CDR = (B/A) (%)**	Opening Issuers (A)	Defaults during next 3 years (B)	**3 Yr CDR = (B/A) (%)**
AAA	50	0	**0.00**	60	0	**0.00**
AA	40	1	**2.50**	50	1	**2.00**
A	30	2	**6.67**	20	2	**10.00**
BBB	20	3	**15.00**	15	3	**20.00**

Issuer weighted average three-year CDR is computed to arrive at the average CDR over a specified period of time. The above example is continued here to arrive at the average CDR:

	Cohort 1		Cohort 2		
	3 Yr CDR (C1) (%)	Opening Issuers (W1)	3 Yr CDR (C2) (%)	Opening Issuers (W2)	**Weighted Average 3 Yr CDR** = (C1*W1+C2*W2)/(W1+W2) (%)
AAA	0.00	50	0.00	60	**0.00**
AA	2.50	40	2.00	50	**2.22**
A	6.67	30	10.00	20	**8.00**
BBB	15.00	20	20.00	15	**17.14**

Annexure II

Difference between SEBI methodology & CARE Ratings Methodology

Description	SEBI Methodology	CARE Ratings Methodology
Static Pool	Monthly Static Pool	Annual Static Pool
Issuer/Instrument inclusion	Corporate issuers are included multiple times, with a cap of 3 in case different seniority instruments are rated. Structured finance trusts issuing instruments of different seniority are also taken multiple times and capped at 3.	This study considers only senior most rating of the issuer and doesn't consider structured finance ratings or Credit Enhanced ratings.
Time Frame	For long run CDR, 120, 108 and 96 cohorts are used, whereas for short run CDR, 48, 36 and 24 cohorts are used	10 yearly cohorts are used for the same.
CDR calculation	Average marginal default rate methodology is used	Simple methodology is used as described earlier
Withdrawal adjustment	Ratings withdrawn during the year are excluded	Withdrawal adjustment is not done

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