

CARE's DEFAULT AND TRANSITION STUDY 2015

(For the period March 31, 2005 – March 31, 2015)

Summary

CARE commenced its rating activity in 1993, and has over the years acquired considerable experience in rating various types of debt instruments covering a wide range of sectors including Manufacturing, Services, Financial Institutions & Banks, 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. Default rates in India reached high levels in the late nineties upto 2002. The continued robust GDP growth rates since then until the recent period of economic stress has ensured low default rates. Beginning in the second half of FY08-09, the impact of the global financial crisis has been felt. This was further exacerbated by the slowdown in the Indian economy in FY13 and FY14 and while there have been some signs of a recovery in FY15, corporate stress appears to be still high. In fact in these three years, the banking system has been confronted with high levels of stressed assets – NPAs and restructured assets due to a combination of factors such as low demand, high interest rates, policy related issues and global disturbances such as the Fed tapering which affected corporate profitability. The increased turbulence saw credit markets squeeze and in turn the slowdown in the economic growth. This study covers the period 2005-2015 and updates earlier default studies of CARE that begin coverage from 2004.

CARE's ratings have shown good discriminatory power across rating categories with higher rated categories generally having lower default rates. However, relatively fewer issuers historically in each rating category posed limitations to the interpretation of the study results. The impact of low issuer base though is being gradually mitigated with recent years having higher number of rated entities.

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

CARE's Default Study

This section examines default experience of CARE's long-term and medium-term ratings from March 31, 2005 to March 31, 2015. CARE has used Cohorts method to calculate the performance of CARE rated entities across various rating categories. Category-wise Cumulative Default Rate (CDR) is calculated for each 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. Then, the issuer weighted average for one-year, two-year and three-year CDR is computed to arrive at the long term CDR for each 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 **Annexure**.

The CDR study includes ratings of issuers across all sectors – banks, financial institutions and corporates. Ratings of Structured Obligations (SO) are not a part of this study which would comprise securitisation transactions, ratings backed by third-party guarantees or instruments with a structured payment mechanism.

Static Pool / Cohort

- The study tracks the long/medium-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 as on the beginning of each cohort falling within the study period. Default experience of each rating category for each cohort is examined over one, two and three-year periods.

Rating category-wise number of issuers is presented below in **Table 1**:

Table 1: Issuers Outstanding at the beginning of each Cohort period

Rating Category	Number of Issuers at the beginning of the cohort period as on 31 st									
	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14
AAA	15	21	23	31	44	49	53	59	57	66
AA	39	48	48	63	93	116	147	162	166	177
A	16	24	30	64	167	220	289	345	305	344
BBB	13	15	11	33	272	561	866	1064	1140	1309
BB	3	2	2	1	60	183	375	806	1262	1678
B	0	2	0	0	8	24	41	264	589	993
C	1	0	0	0	1	3	10	31	59	54
Total	87	112	114	192	645	1156	1781	2731	3578	4621
Median Rating	AA	AA	AA	A	BBB	BBB	BBB	BBB	BB	BB

Key Observations

- The period beginning from March 2008 witnessed a **structural shift** in the rating universe as the Basel II standardized approach for credit risk was implemented for banks by RBI. Two key changes that can be observed are the multiple times increase in the overall number of issuers and the increase in issuer rated below AA category between March 2008 and March 2009.
- In India, the banking sector is still the primary source of debt funding and prior to Basel II implementation, bank borrowings of companies were unrated. Post Basel II implementation, many of the corporates with bank borrowings are getting rated leading to the manifold increase in number of issuers, especially in the lower grades.
- The corporate bond market in India is skewed towards higher rated entities. Therefore, the rating universe primarily comprised of higher rated borrowers before Basel II implementation.
- The median rating based on the above rating universe progressively moved down from AA during March 2005-2007 period to BBB for 2009-2012 and was BB for issuers at the beginning of March 31, 2013.

CARE’s Cumulative Default Rate

CARE’s one-year, two-year and three-year cumulative issuer weighted average default rates consistently follow the principle of ordinality and are lower in the higher rating categories and increase as we move down the rating categories (presented in Table 2 below)

Table 2: CARE’s Issuer Weighted Cumulative Default Rates for the period March 2005 - March 2015

Rating Category	One year		Two Year		Three Year	
	Avg. No. of Issuers	CDR (%)	Avg. No. of Issuers	CDR (%)	Avg. No. of Issuers	CDR (%)
AAA	41.8	0.00%	39.1	0.00%	36.9	0.00%
AA	105.9	0.00%	98.0	0.34%	89.5	0.84%
A	180.4	0.39%	162.2	1.78%	144.4	3.55%
BBB	528.4	1.40%	441.7	3.27%	354.4	5.11%
BB	437.2	4.12%	299.3	7.98%	179.0	11.24%
B	192.1	8.22%	103.1	13.69%	42.4	15.04%
C	15.9	23.90%	11.7	31.43%	5.8	39.13%
Total	1501.7	3.04%	1155.1	5.14%	852.3	6.19%

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-.

Key Observations

- There were no instances of default (in any Cohort) in AAA rating category during the period of this study.
- Small sample size limitations have gradually reduced with average sample size of three year CDR computation being above 50 for all investment grade categories (except AAA).
- For the one-year and the two-year CDRs sample size has improved due to inclusion of recent cohorts. As the sample size continues to increase more meaningful conclusions can be reached.
- It can be observed that CARE’s CDRs display good discriminatory power with higher rating categories having lower CDRs.
- 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. Structured obligation ratings are not part of this study. It may be mentioned that while the ABS and MBS ratings which form a part of CARE’s structured obligation ratings have not witnessed any default or downgrade, other

structured ratings (carrying the SO symbol) have witnessed downgrades in line with the ratings of the respective guarantors.

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, also known as cohorts, are created by grouping issuer ratings according to the year in which the ratings are active and outstanding at the beginning of the year.
- The study tracks the long/medium-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 – banks, financial institutions and corporates. Structured Obligations (SO) are not a part of this study.
- Individual cohorts have been formed for each year under study; in all 9 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 2004 cohort represents the ratings outstanding as on March 31, 2004 and their transitions or changes (upgrades, downgrades and re-affirmation) in the subsequent year till March 31, 2005.
- Data from all individual cohorts have been pooled together to obtain the weighted average transition matrix.
- 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 has been removed from the relevant opening cohort.

Table 3 shows issuer weighted average transition rates on the CARE rating scale over the period 2005-2015.

**Table 3: Average 1-year Rating Transition Rates for the period
Mar 2005- Mar 2015**

	Issuer-Years	AAA	AA	A	BBB	BB	B	C	D
AAA	414	98.28%	1.72%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
AA	1038	1.57%	94.15%	3.80%	0.20%	0.20%	0.10%	0.00%	0.00%
A	1755	0.00%	2.97%	87.06%	8.20%	1.11%	0.19%	0.06%	0.41%
BBB	4990	0.00%	0.06%	3.79%	87.93%	6.19%	0.46%	0.02%	1.35%
BB	3915	0.00%	0.00%	0.00%	6.15%	83.80%	3.97%	0.40%	3.88%
B	1728	0.00%	0.00%	0.00%	0.17%	13.81%	73.22%	0.60%	5.81%
C	137	0.00%	0.00%	0.00%	1.92%	9.32%	26.22%	29.50%	21.09%

Below Investment Grade refers to ratings below BBB- (i.e. BB+ till D)

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-.

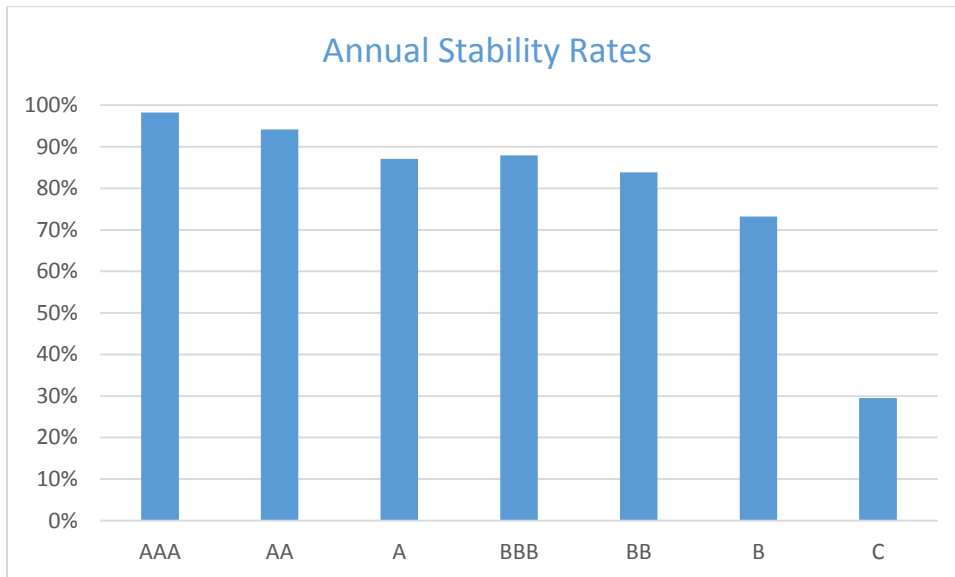
The diagonal of **Table 3** represents the stability of a particular rating category in one year for the period Mar 2005 – Mar 2015.

Based on CARE’s average one-year transition matrix, it can be inferred that out of all the AA rated companies at the beginning of the year, 94.15% have remained in the same category, 1.57% have been upgraded to AAA and 3.80% have been downgraded to A category and so on. Similar interpretation can be done for other rating categories as well.

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 2005-2015 is presented in **Chart 1**:

Chart 1: Annual Stability Rates
Mar 2005- Mar 2015



- CARE’s higher rating categories AAA and AA exhibit high level of stability within one-year period.
- Stability rates of CARE’s higher rating categories have generally been higher than those for the lower rating categories.

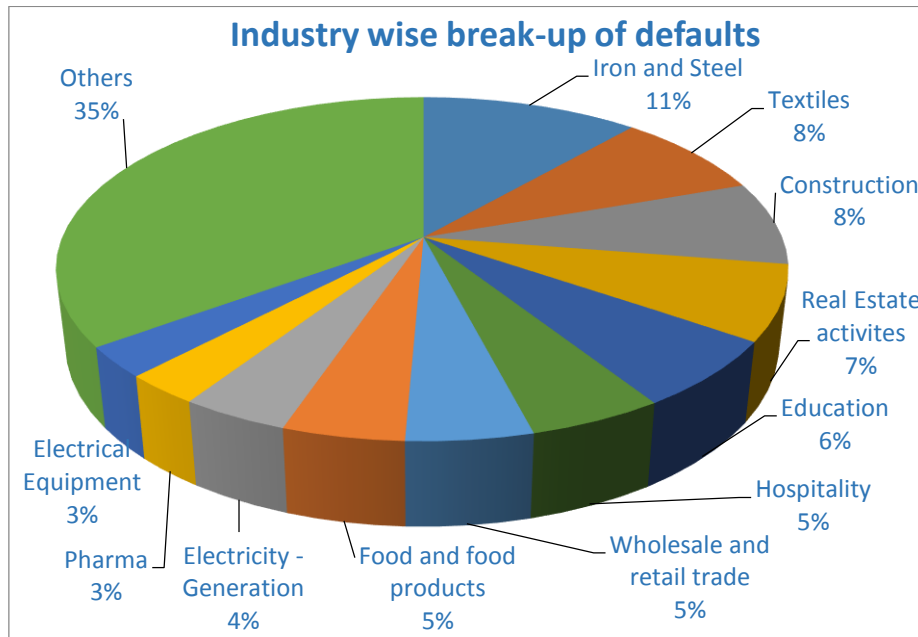
Sector-wise Analysis of Defaults

As seen from **Chart 2**, the defaults during the period March 2005 to March 2015 were majorly from 11 sectors. **About 11% of the total defaults were from the Iron & Steel sector alone.** Textiles and Construction sectors each accounted for 8% of the defaults, closely followed by the Real Estate (7%) and Education (6%) sectors. Hospitality, Wholesale & Retail Trade, Food and Food Products, Electricity Generation, Pharmaceuticals and Electrical Equipment sectors were the other major contributors to the total defaults.

General slowdown in the economy, highly leveraged capital structure of companies, delay in implementation of capex, non-availability of fuel, delay in raising equity, delay in asset monetisation, and slowdown in receipt of payments from clients/build-up of inventory were the major reasons for default by companies during this period.

Chart 2: Industry wise breakup of defaults

Mar 2005- Mar 2015



The largest no. of defaults has been from the Iron & Steel sector. Issues like mining ban, delay implementation of new projects due to land acquisition and environmental clearance issues, instability in the domestic iron ore production, high railway freights, high dependence on imported coking coal alongwith volatile exchange rates, and slowdown in the major consumer industries of steel (namely construction, engineering and auto) led to a decline in the credit profile of several steel players. Falling steel prices and slowdown in demand in the global market also added to the woes of the players in this industry.

Some of the sectors mentioned above have also been identified as ‘stressed sectors’ by RBI in the last few Financial Stability Reports (FSRs) published by it. As per the latest FSR (published in June 2015), Infrastructure (including power generation), Iron & Steel and Textiles sectors contributed 47.3% of the stressed advances in the banking system in December 2014. **Table 4** lists the stressed sectors and their proportion to total advances.

**Table 4: Contribution of stressed sectors to the advances
(December 2014)**

(%)

Sub-sector		Public Sector Banks	Private Sector Banks	Foreign Banks	All SCBs
1. Mining	Share in Advances	1.7	0.4	0.4	1.3
	Share in Stressed Advances	1.4	1.1	0.3	1.4
2. Iron & Steel	Share in Advances	5.2	2.5	2.7	4.5
	Share in Stressed Advances	10.5	7.9	3.6	10.2
3. Textiles	Share in Advances	3.9	2.4	1.2	3.4
	Share in Stressed Advances	7.5	6.4	3.4	7.3
4. Infrastructure (of which)	Share in Advances	17.6	8.4	6.4	15.0
	Share in Stressed Advances	30.9	18.2	32.8	29.8
-Power Generation	Share in Advances	10.1	3.8	1.1	8.3
	Share in Stressed Advances	17.3	7.3	0.0	16.1
-Telecom	Share in Advances	1.7	0.9	3.2	1.6
	Share in Stressed Advances	1.8	3.1	19.7	2.2
5. Aviation	Share in Advances	0.6	0.1	0.6	0.5
	Share in Stressed Advances	2.7	0.4	0.0	2.4
Total of these five sub-sectors	Share in Advances	29.0	13.9	11.3	24.8
	Share in Stressed Advances	53.1	34.1	40.0	51.1

Source: RBI's FSR for June 2015

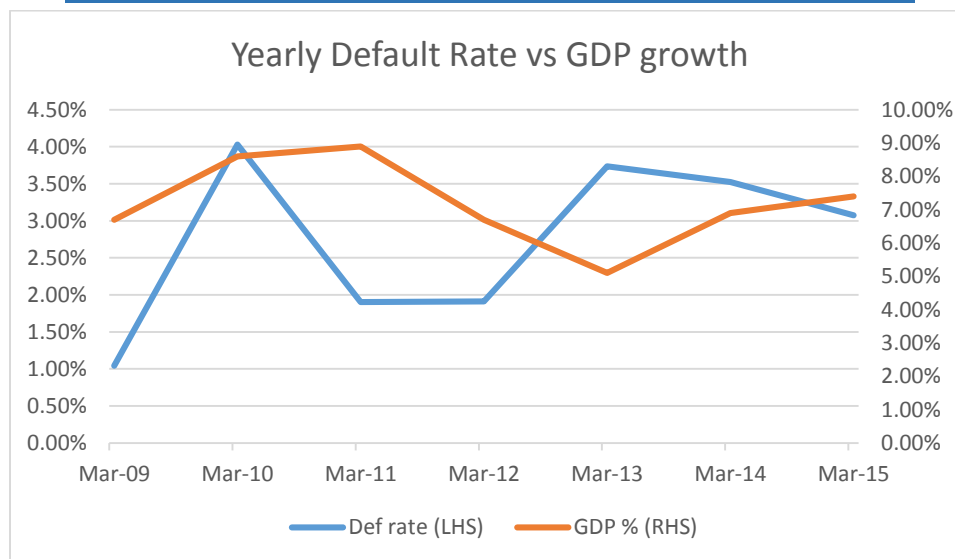
Further, of the total 285 cases live with the CDR Cell as on March 31, 2015, 43% belonged to Infrastructure, Iron & Steel and Textiles sectors. These sectors constituted around 48% of the total debt under restructuring as on March 31, 2015, as seen in **Table 6** below:

Table 6: Contribution of Largest Stressed Sectors (March 2015)

Industry	No. of cases	No. of cases in %	Aggregate debt (Rs. crore)	Debt in %
Infrastructure	23	8.07%	57,130	19.95%
Iron & Steel	58	20.35%	56,443	19.71%
Textiles	41	14.39%	24,432	8.53%
Total of 3 industries	122	42.81%	138,005	48.19%
Aggregate cases with CDR Cell	285	100.00%	286,405	100.00%

Source: CDR Cell

Chart 2: Year-wise analysis of GDP growth and default rates (2009-15)



Note:

- Yearly defaults have been taken on the basis of one year default rates of respective cohorts. For e.g. one year default for Y.E. March-15 refers to default rate in respect of one year cohort of a static pool outstanding as on March 31, 2014.
- GDP Growth for 2012-13 onwards has been calculated as per new index

Though the present CARE default study is for the period March 2005 to March 2015, the year-wise analysis of GDP and default rates is being presented only for the period March 2009 to March 2015. The dynamics of the world economy changed after the financial crisis of 2008. The impact of the crisis was felt in FY09 with GDP declining to 6.7% from 9.3% in FY08. Also with the implementation of the Basel II Standardized Approach in March 2008, the number of CARE rated issuers increased manifold. Though the increase was mainly in the lower rating grades, it presents us with meaningful numbers to study correlation of defaults.

As seen from **Chart 2**, the yearly default rate is highly correlated with the GDP growth rate. The yearly default rate generally increased whenever there was a decline in the GDP growth and vice versa. In the year ended March 2012, the default rate was flat despite the decline in the GDP. However, during the next year, the default rate increased sharply. With the rise in GDP, the default rate has improved in the last two years.

Disclaimer

CARE has taken due care and caution in compilation of the data for this publication. Information has been taken by CARE from sources it considers accurate and reliable. CARE does not guarantee accuracy, adequacy or completeness of any information and is not responsible for any errors or omissions for the results from the use of such information. CARE especially states that it has no financial liability whatsoever to any use on account of the use of information provided in this publication. This material is not intended as an offer or solicitation for purchase or sale of any financial instruments.

CARE's ratings are opinions on credit quality and are not recommendations to buy, sell or hold any security. CARE has based its ratings on information obtained from sources believed by it to be accurate and reliable. CARE does not, however, guarantee the accuracy, adequacy or completeness of any information and is not responsible for any errors or omissions or for the results obtained from the use of such information. Most issuers of securities rated by CARE have paid a credit rating fee, based on the amount and type of securities issued.

Annexure

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 rest of the period of the cohort. 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) 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 frequency. 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		Weighted Average 3 Yr CDR = (C1*W1+C2*W2)/(W1+W2) (%)
	3 Yr CDR (C1) (%)	Opening Issuers (W1)	3 Yr CDR (C2) (%)	Opening Issuers (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

Analyst Contact:

T.N.Arun Kumar
Chief General Manager
 91-22-67543412
 arun.kumar@careratings.com

Ramadasu Bandaru
Manager
 91-22-67543402
 ramadasu.bandaru@careratings.com