

Performance of ICRA-Assigned Credit Ratings

Rating Transition and Default Study – FY2017

July 2017

Corporate Ratings

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SUMMARY

This report presents an update on the performance of ICRA-assigned credit ratings during FY2017 in terms of transition across rating categories and trends in instances of default.

KEY HIGHLIGHTS

Trends in Rating Transition

- ❖ The stability of ICRA-assigned non-structured finance ratings improved in FY2017 – ratings of 93% of the entities were retained in the same rating category during the year (comparable number was 89% in FY2016 while the historical 10-year average is 89%)
- ❖ The severity of rating actions taken by ICRA, as measured by the Large Rating Change Rate (LRCR¹), also improved in FY2017 (2.4% in FY2017 as compared with 3.5% in FY2016). Over a longer time horizon, the LRCR for ICRA assigned ratings has steadily ebbed, from a high of 8.6% in FY2012
- ❖ In FY2017, the stability rates for structured finance ratings were high for the AAA and AA category ratings (100% and 95%, respectively). Stability rates were lower in the A category and the BBB category primarily because of the large number of rating upgrades in micro loan securitisation transactions and the second loss facility of the credit enhancement in some other securitisation transactions.

Trends in Instances of Defaults

- ❖ Overall, 2.4% of the total ICRA-assigned non-structured finance ratings moved to the default category in FY2017 (3.3% in FY2016). The one-year default rate for the investment grade entities stood at 0.4% in FY2017 (1.0% in FY2016), while for the non-investment grade entities, it was 3.3% (4.1% in FY2016). Textiles, Real Estate & Ferrous Metals were the three largest sectors contributing to defaults during FY2017
- ❖ The one-year default rate for ICRA's investment grade ratings has remained below 1% for the last four years. The three-year cumulative default rate of ICRA's investment grade ratings declined further to 2.4% for the cohort of ratings outstanding at the beginning of the year FY2015 (the latest cohort having completed three years of seasoning), from 2.9% for the preceding year's cohort

¹LRCR is defined as the ratio of entities for whom the rating change (downgrade or upgrade) was by three or more notches at one go to the number of live entities at the beginning of the period under review. This excludes any upgrades from [ICRA]D triggered by technical reasons.

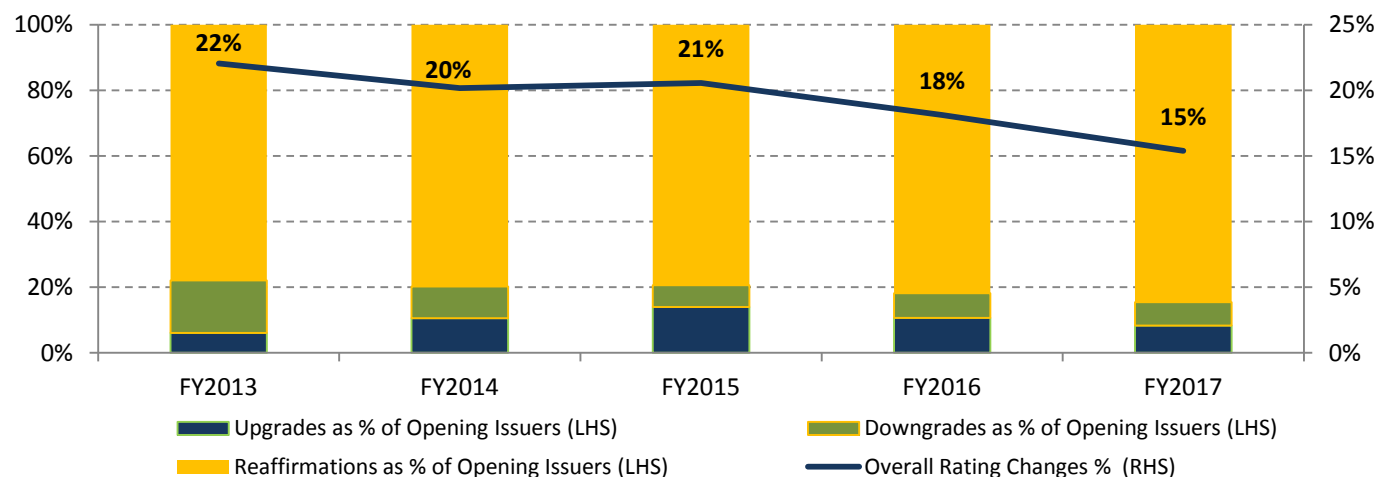
NON-STRUCTURED FINANCE RATINGS

Trend in Rating Changes

The proportion of lower rated entities in the universe of ICRA-rated entities has increased significantly over the last several years. The percentage of entities rated in the [ICRA]BB or lower rating categories increased to 72% in FY 2017 from 14% in FY 2009. Over this period, the median long-term rating for the ICRA-rated universe shifted from the [ICRA]AA category as on March 31, 2008 to the [ICRA]BB category as on March 31, 2016. Over the last three years, however, the category-wise distribution of ratings in ICRA's portfolio has stabilized with the largest proportion of ratings concentrated in the [ICRA]B category and the median rating category being [ICRA]BB.

The transition data for ICRA-assigned ratings over the last five years shows that typically the ratings of only around 1/5th of the entities are either upgraded or downgraded during a year, while the balance ratings are reaffirmed. The trend in the rating actions during different time periods, among other factors, depends on the global and the domestic macro-economic environment. As for recent period trends, the proportion of rating reaffirmations has increased over the past two years from around 80% in FY2015 to around 85% in FY2017, reflecting the ongoing phase of stabilization in the credit quality of entities, which had deteriorated significantly in recent years. In ICRA's assessment, while incremental downgrade pressures have eased overall, the prospects of a definitive improvement in credit quality are not reassuring as yet.

Chart 1: Rating Changes and Reaffirmations as Proportion of Opening Issuers



Note: Rating changes depicted in this Chart includes the count of rating changes within the same rating category
Source: ICRA

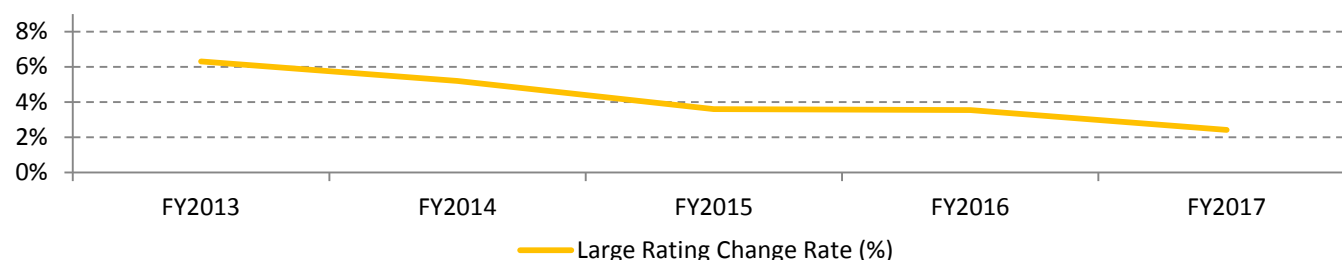
RATING TRANSITION

The LRCR for ICRA's ratings declined to 2.4% in FY2017 from 3.5% in FY2016

Large Rating Change Rate

The Large Rating Change Rate (LRCR) is defined as the ratio of entities for whom the rating change (downgrade or upgrade) was by three or more notches to the number of live entities at the beginning of the period under review. The LRCR, in practice, is influenced mainly by downward rating changes since multiple-notch movements happen primarily in the downward direction. The LRCR excludes upgrades on account of technical reasons². The LRCR for ICRA's ratings declined to 2.4% in FY2017 from 3.5% in FY2016. There has been a steady reduction in the severity of rating changes over the last few years as reflected in LRCR declining to 2.4% in FY2017 from 6.3% in FY2013. The LRCR for rating downgrades (excluding movement to default category) and rating upgrades (excluding movement from default category) also declined to 0.1% each in FY2017 from 0.2% each in FY2016.

Chart 2: Number of Issuers with Large Rating Changes as Proportion of Opening Issuers



Source: ICRA

- ❖ **Downgrades:** The ratings of 169 entities were downgraded by three or more notches in FY2017, of which the ratings of 161 entities were downgraded to the [ICRA]D category. Of the other 8 entities whose ratings were not downgraded to [ICRA]D but that experienced a large rating change, the ratings of three entities (all in the [ICRA]BBB category) were downgraded from the investment grade to the non-investment grade. Such rating actions were triggered by reasons such as liquidity pressure due to elongation in the working capital cycle and reliance on short term borrowings; weak realizations, besides unanticipated management and governance issues. In the [ICRA]A category, the rating of one entity experienced a large rating change which was prompted by a combination of several negative events including – deterioration in the credit profile of the parent which impacted the entity's business volumes on account of business linkages with the parent, limited visibility on the ownership structure in light of the expected exit by the majority shareholder and large committed liabilities towards an acquisition. All the other large rating changes, other than downgrades to the Default category, pertained to entities whose rating was in the non-investment grade prior to the sharp downgrade.
- ❖ **Upgrades:** The ratings of 45 entities were upgraded by three or more notches in FY2017, of which the ratings of 37 entities was upgraded from the [ICRA]D category. Of the other 8 entities that experienced a large rating change, the ratings of one entity (in the [ICRA]BB category) was upgraded from the non-investment grade to the investment grade on account of equity infusion through an IPO which was utilized towards debt reduction. In the [ICRA]BBB category, three entities experienced large rating changes, one of which was driven by a stronger promoter gaining management control, second was driven by the expected improvement in the business profile, favourable merger and substantial equity infusion; and the third was driven by equity infusion, pre-payment of debt, improvement in realizations and favourable industry outlook. All the other large rating changes, other than upgrades from the Default category, pertained to entities whose rating was in the non-investment grade prior to the sharp upgrade.

²Technical reason means an upgrade from the default [ICRA]D category following correction of technical delays in debt servicing.

RATING TRANSITION

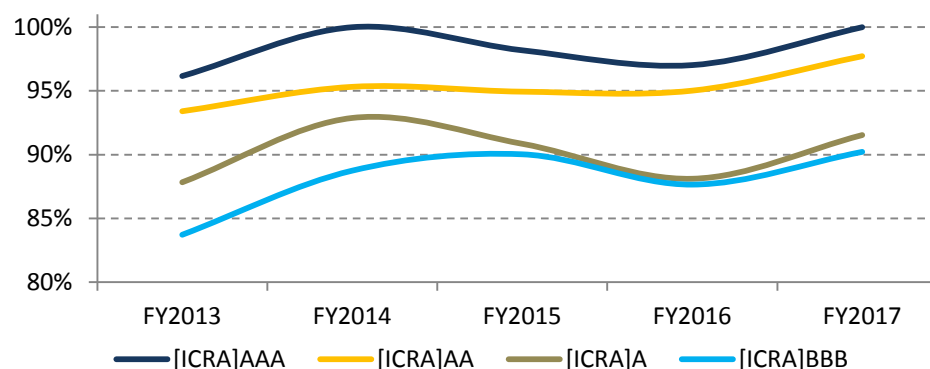
Rating stability is defined as the proportion of issuers whose rating remains in the same rating category during the period under consideration

Stability of ICRA's ratings across all the investment grade categories in FY2017 was better than the average for the last 10 years

Stability of Long-Term Ratings

The stability of ICRA's ratings has been range-bound over the last few years and the rating stability in FY2017 was better than the average for the last 10 years across all the investment grade rating categories.

Chart 3: Trend in Stability of ICRA's Ratings across Investment Grade Categories



Source: ICRA

Ratings Stability	Average of last 10 years*	FY2017*
[ICRA]AAA	97.4%	100.0%
[ICRA]AA	95.7%	97.7%
[ICRA]A	89.3%	91.5%
[ICRA]BBB	87.7%	90.2%

These figures indicate the percentage of ratings remaining unchanged in the given rating category over the specified time horizon

Table 1: One-Year Transition Matrix of Long-Term Ratings* for FY2017

FY2017	[ICRA]AAA	[ICRA]AA	[ICRA]A	[ICRA]BBB	[ICRA]BB	[ICRA]B and Lower
[ICRA]AAA	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
[ICRA]AA	0.4%	97.7%	1.9%	0.0%	0.0%	0.0%
[ICRA]A	0.0%	5.2%	91.5%	2.8%	0.2%	0.2%
[ICRA]BBB	0.0%	0.0%	5.2%	90.2%	4.3%	0.3%

Table 2: One-Year Transition Matrix of Long-Term Ratings* for FY2016

FY2016	[ICRA]AAA	[ICRA]AA	[ICRA]A	[ICRA]BBB	[ICRA]BB	[ICRA]B and Lower
[ICRA]AAA	97.0%	3.0%	0.0%	0.0%	0.0%	0.0%
[ICRA]AA	1.8%	95.1%	2.7%	0.0%	0.0%	0.4%
[ICRA]A	0.0%	6.6%	88.2%	4.9%	0.0%	0.3%
[ICRA]BBB	0.0%	0.0%	5.4%	87.8%	5.1%	1.7%

How to Read the Rating Transition Tables: In FY2017, 91.5% of the [ICRA]A category ratings remained in the same category at the beginning and at the end of the year. Of the total [ICRA]A category ratings outstanding at the beginning of the year, 5.2% were upgraded to [ICRA]AA category during the year, while 2.8% got downgraded to the [ICRA]BBB category during the year.

*Includes transition for Medium-Term ratings after mapping them to equivalent Long-Term rating scale

RATING TRANSITION

Ratings of 1.0% of entities in non-investment grade were upgraded to the investment grade while ratings of 2.8% of entities in investment grade were downgraded to the non-investment grade in FY2017

Table 3: One-Year Transition Matrix of Long-Term Ratings*: Average for Last 10 Years

Average of 10 yrs	[ICRA]AAA	[ICRA]AA	[ICRA]A	[ICRA]BBB	[ICRA]BB	[ICRA]B and Lower
[ICRA]AAA	97.4%	2.6%	0.0%	0.0%	0.0%	0.0%
[ICRA]AA	1.4%	95.7%	2.6%	0.1%	0.0%	0.1%
[ICRA]A	0.0%	4.6%	89.3%	5.6%	0.2%	0.4%
[ICRA]BBB	0.0%	0.0%	4.2%	87.7%	5.8%	2.3%

Table 4: One-Year Stability of Long-Term Ratings* in Investment Grade

	FY2013	FY2014	FY2015	FY2016	FY2017	Average Over Last 10 Years
[ICRA]AAA	96.3%	100.0%	98.2%	97.0%	100.0%	97.4%
[ICRA]AA	93.9% (0.0%)	95.4% (0.0%)	95.1% (4.9%)	95.1% (1.8%)	97.7% (0.4%)	95.7% (1.4%)
[ICRA]A	88.1% (0.3%)	92.9% (3.0%)	90.9% (7.0%)	88.2% (6.6%)	91.5% (5.2%)	89.3% (4.6%)
[ICRA]BBB	84.0% (0.7%)	88.9% (4.4%)	90.2% (6.7%)	87.8% (5.4%)	90.2% (5.2%)	87.7% (4.2%)

Figures in parentheses indicate percentage transition to a higher category, or upgrade

Note: Stability metrics in Table 1, Table 2, Table 3 and Table 4 relate to all issuances except those for structured obligations.

The categories of [ICRA]AA, [ICRA]A, [ICRA]BBB and [ICRA]BB include ratings with suffixes "+" and "-" within the respective categories. For instance, the category [ICRA]AA contains three rating levels: [ICRA]AA+, [ICRA]AA and [ICRA]AA-.

Downgrades

- ❖ In FY2017, no entity in the [ICRA]AAA and [ICRA]AA rating category was downgraded to the non-investment grade. The ratings of two entities in the [ICRA]A rating category were downgraded to the non-investment grade (none to [ICRA]D)
- ❖ In the [ICRA]BBB category, the ratings of 4.6% of the entities were downgraded to the non-investment grade in FY2017. This was lower than the last 10 years' average of 8.1%, as well as the 6.7% figure for FY2016
- ❖ The ratings of 2.8% of the investment grade entities were downgraded to the non-investment grade in FY2017. This was lower than the 10 years' average of 5.0% and also lower than the 4.2% figure for FY2016. Most of the rating downgrades were from [ICRA]BBB category to the [ICRA]BB category

Upgrades

- ❖ The ratings of 1.0% of the non-investment grade entities were upgraded to the investment grade in FY2017. This was lower than the last 10 years' average of 1.8% and also lower than the 1.7% figure for FY2016. Most of the rating upgrades were from the [ICRA]BB category to the [ICRA]BBB category.
- ❖ While the number of upgrades remained higher than downgrades in FY2017, the Credit Ratio (*ratio of number of entities upgraded to those downgraded, excluding upgrades due to technical reasons*) declined to 1.1x in FY2017 from 1.3x in FY2016. Moreover, the debt value-weighted Credit Ratio of ICRA-assigned ratings stood weak at 0.8x in FY2017, reflecting the stress in systemic credit quality.

*Includes transition for Medium-Term ratings after mapping them to the equivalent Long-Term rating scale

Stability of Short-Term Ratings

ICRA has a 9-point rating scale for short-term ratings as against a 20-level rating scale for long-term ratings. The short-term ratings are generally mapped to the long-term ratings, implying that for a particular long-term rating level, there could be more than one option of mapping a particular short-term rating level. For instance, for the long-term rating of [ICRA]A, either of the short-term ratings of [ICRA]A1 or [ICRA]A2+ could be mapped depending on the relative strength of the entity's short-term liquidity position. *Table 5 to Table 8* present the one-year transition metrics for ICRA's short-term ratings for various time periods. Generally, short-term ratings are more dynamic compared with long-term ratings as short-term ratings get influenced more by changes in the near term liquidity position of entities, unlike long-term ratings which are influenced more by fundamental changes in credit quality.

Table 5: One-Year Transition Matrix of Short-Term Ratings for FY2017

FY2017	[ICRA]A1+	[ICRA]A1	[ICRA]A2	[ICRA]A3	[ICRA]A4	[ICRA]D
[ICRA]A1+	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%
[ICRA]A1	13.1%	81.7%	3.9%	1.3%	0.0%	0.0%
[ICRA]A2	0.8%	6.0%	87.9%	4.4%	0.8%	0.0%
[ICRA]A3	0.0%	0.0%	6.0%	87.2%	6.2%	0.6%
[ICRA]A4	0.0%	0.0%	0.0%	1.0%	96.6%	2.4%
[ICRA]D	0.0%	0.0%	0.0%	0.0%	6.6%	93.4%

Table 6: One-Year Transition Matrix of Short-Term Ratings for FY2016

FY2016	[ICRA]A1+	[ICRA]A1	[ICRA]A2	[ICRA]A3	[ICRA]A4	[ICRA]D
[ICRA]A1+	98.4%	0.8%	0.5%	0.0%	0.0%	0.3%
[ICRA]A1	19.7%	73.5%	6.8%	0.0%	0.0%	0.0%
[ICRA]A2	2.5%	6.9%	84.1%	4.7%	1.2%	0.6%
[ICRA]A3	0.2%	0.2%	8.3%	82.9%	7.2%	1.3%
[ICRA]A4	0.0%	0.0%	0.0%	1.7%	95.0%	3.3%
[ICRA]D	0.0%	0.0%	0.0%	0.5%	9.3%	90.2%

Table 7: One-Year Transition Matrix of Short-Term Ratings: Average for Last 10 Years

Average of 10 yrs	[ICRA]A1+	[ICRA]A1	[ICRA]A2	[ICRA]A3	[ICRA]A4	[ICRA]D
[ICRA]A1+	96.9%	2.5%	0.5%	0.0%	0.0%	0.0%
[ICRA]A1	11.9%	77.5%	9.4%	0.8%	0.2%	0.3%
[ICRA]A2	0.8%	6.3%	84.9%	6.0%	1.5%	0.5%
[ICRA]A3	0.1%	0.1%	6.3%	82.9%	9.1%	1.5%
[ICRA]A4	0.0%	0.0%	0.0%	2.1%	93.9%	4.0%
[ICRA]D	0.0%	0.0%	0.1%	0.3%	13.5%	86.1%

RATING TRANSITION

Table 8: One-Year Stability of Short-Term Ratings

	FY2013	FY2014	FY2015	FY2016	FY2017	Average Over Last 10 Years
[ICRA]A1+	94.0%	96.5%	97.9%	98.4%	98.9%	96.9%
[ICRA]A1	85.2% (1.6%)	78.7% (10.3%)	82.9% (11.4%)	73.5% (19.7%)	81.7% (13.1%)	77.5% (11.9%)
[ICRA]A2	83.1% (1.6%)	84.1% (7.0%)	86.2% (11.1%)	84.1% (9.3%)	87.9% (6.8%)	84.9% (7.1%)
[ICRA]A3	76.8% (3.5%)	85.5% (6.3%)	86.0% (9.4%)	82.9% (8.6%)	87.2% (6.0%)	82.9% (6.5%)
[ICRA]A4	94.7% (0.8%)	93.8% (2.5%)	93.7% (2.8%)	95.0% (1.7%)	96.6% (1.1%)	93.9% (2.1%)
[ICRA]D	86.1% (13.9%)	81.2% (18.8%)	85.0% (15.0%)	90.2% (9.8%)	93.4% (6.6%)	86.1% (13.9%)

Figures in parentheses indicate percentage transition to a higher category, or upgrade

Note: The categories of [ICRA]A2, [ICRA]A3 and [ICRA]A4 include ratings with suffixes “+” within the respective categories. For instance, the category [ICRA]A2 contains two rating levels: [ICRA]A2+ and [ICRA]A2.

While most of the rating transitions in the [ICRA]A1 and [ICRA]A2 rating categories remained in the upward direction in FY2017, downgrades were slightly higher than upgrades in the [ICRA]A3 rating category

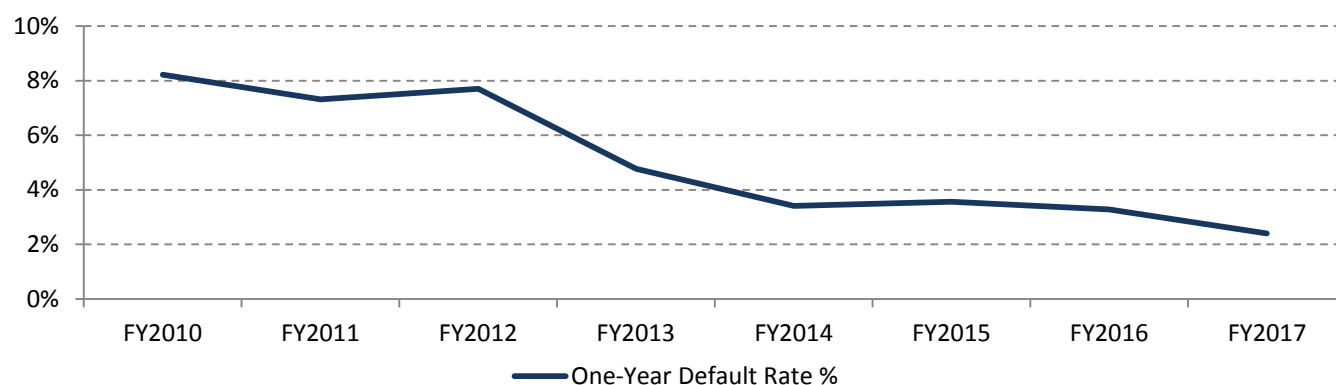
- ❖ The stability of [ICRA]A1+ ratings improved in FY2017 over the previous year and was also higher than the 10-year average. The stability of [ICRA]A1+ ratings had been the lowest in FY2013 in the last five years, when it was also lower than the last 10 year average. This followed from the relatively lower stability of ICRA's long-term ratings in the [ICRA]AA category in FY2013 as a relatively larger proportion of entities in this category were downgraded. Accordingly, this reduced the stability of [ICRA]A1+ ratings during FY2013.
- ❖ The stability in the short-term rating categories of [ICRA]A1, [ICRA]A2 and [ICRA]A3 also improved in FY2017 over the previous year and was also higher than the 10-year average. The improvement in stability of the short term ratings was on account of improvement in the stability of the long-term rating categories of [ICRA]A and [ICRA]BBB in FY2017 as these short term ratings are mapped to the aforementioned long-term ratings.
- ❖ While the direction of most of the rating transitions in the [ICRA]A1 and [ICRA]A2 rating categories remained upwards in FY2017; in the [ICRA]A3 category, downgrades were slightly higher than upgrades in FY2017, unlike the previous year. The direction of most of the rating transitions in the [ICRA]A4 rating category remained downwards in FY2017
- ❖ As around 60% of ICRA-rated entities are in the [ICRA]A4 rating category and given the downward direction of most of the rating transitions for the entities in the [ICRA]A4 rating category, the total number of rating downgrades on the short term rating scale was higher than upgrades in FY2017 (rating upgrades were slightly higher than downgrades in FY2016)

Overall Default Rates have been trending down over the last five years

Trend in Default Rates

The previous section discussed the performance of ICRA's ratings on stability, measured by the frequency and magnitude of rating changes. This section discusses the performance with respect to ratings accuracy as measured by the correlation between each rating level and instances of default. ICRA defines "default" as a missed or a delayed payment by an entity in breach of the agreed terms of the issue (*Refer to ICRA's website to know more on "ICRA's Policy on Default Recognition"*). Chart 4 shows the trend in ICRA's default rate over the years.

Chart 4: Trend in Default Rate of ICRA-assigned Ratings



Source: ICRA; Note: The above estimates are without adjusting for rating withdrawals during the given time horizon

One-Year Default Rate for FY2017 = (Number of long-term ratings downgraded to [ICRA]D during FY2017) / (Total number of long-term ratings outstanding as at the beginning of the year FY2017 that were not rated in the default category)

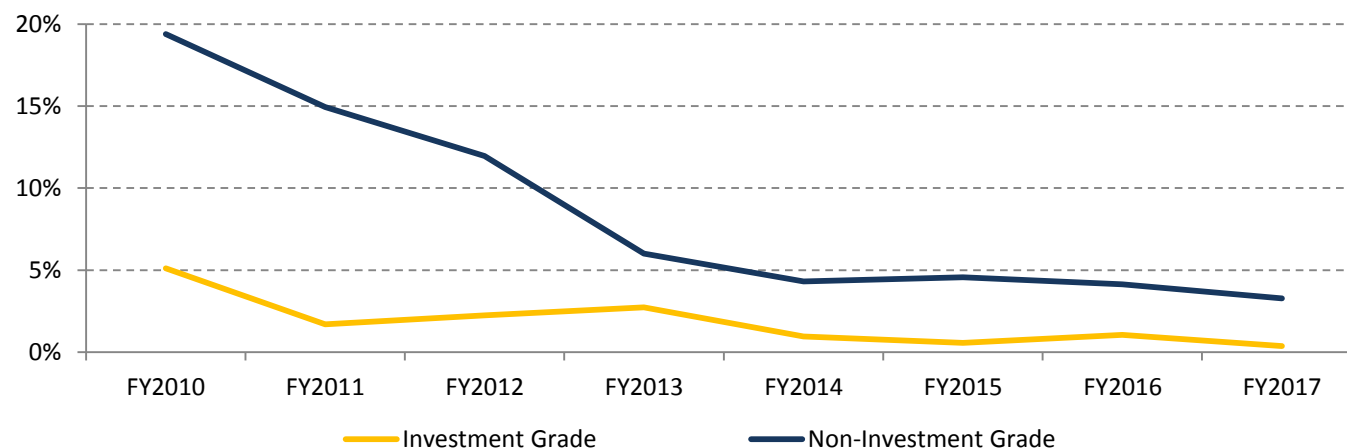
For the cohort of ratings pertaining to the beginning of the year FY2017, the one-year default rate stood at 2.4%, which was lower than the rate of 3.3% for the previous year's cohort.

One-year default rate for ICRA's investment grade ratings has remained below 1% over the last four years, being 0.4% in FY2017

Default Rates in Investment Grade and Non-Investment Grade

- ❖ The one-year default rate of ICRA's investment grade ratings had spiked in FY2010 and had remained elevated over the following three years as a fall-out of the economic downturn that exerted pressure on the liquidity position of several entities leading to defaults by entities in debt servicing. However, since FY2014 the default rates for ICRA-assigned ratings have eased and remained below 1%.
- ❖ Likewise, the one-year default rates in the non-investment grade have also eased over the last few years, but as expected remain much higher than the default rates in the investment grade.
- ❖ While ICRA's one-year default rate for both investment grade and non-investment grade entities declined in FY2017, the overall proportion of the entities which were downgraded in FY2017 was similar to that in FY2016. Most of the defaults in FY2017 were in the Textiles, Real Estate, Ferrous Metals, Trading and Gems & Jewellery sectors.
- ❖ The total value of debt downgraded by ICRA to the Default category reduced to Rs. 36,000 Crore in FY2017 compared with Rs. 128,000 Crore in FY2016.

Chart 5: Trend in One-Year Default Rate in Investment Grade and Non-Investment Grade Rating Categories



Source: ICRA; Note: The above estimates are without adjusting for rating withdrawals during the given time horizon

Cumulative Default Rates

- ❖ The three-year cumulative default rates (CDR-3) for the latest cohort of ICRA's investment grade ratings i.e. pertaining to the cohort of ratings outstanding at the beginning of FY2015, improved to 2.4% as compared to 2.9% for the cohort of the previous year. Overall, the weighted average CDR-3 of all cohorts starting April 1, 2007, continues to be adversely impacted by the high number of defaults during the years FY2010 to FY2013.
- ❖ The default rates for the [ICRA]AAA category continues to remain Nil for the last 10 years. However, because of one instance of default by an [ICRA]AA category entity in FY2016, the average CDR-1 for this category stood at 0.1%, after having been NIL over the years till FY2015.

Table 9: Average Cumulative Default Rates (Cohorts starting April 1, 2007)

	CDR-1	CDR-2	CDR-3
[ICRA]AAA	0.0%	0.0%	0.0%
[ICRA]AA	0.1%	0.1%	0.2%
[ICRA]A	0.4%	1.0%	1.8%
[ICRA]BBB	2.4%	4.5%	6.4%
Investment Grade	1.5%	3.0%	4.3%

How are Cumulative Default Rates (CDR) Computed?

CDR-1: For each rating category, this reflects the weighted average of the default rate of issuers over a **one-year time horizon for ten cohorts**. First, the one-year default rate is computed for each of the ten cohorts from April 1, 2007 to April 1, 2016. Then, the weighted average one-year default rate is computed to arrive at CDR-1 where the weights are the number of issuers in each of the ten cohorts. The number of issuers considered in each rating category is after adjusting for rating withdrawals.

CDR-2: For each rating category, this reflects the weighted average of the default rate of issuers over a **two-year seasoning of ratings for nine cohorts**. First, the two-year default rate is computed for each of the nine cohorts from April 1, 2007 to April 1, 2015. Then, the weighted average two-year default rate is computed to arrive at CDR-2 where the weights are the number of issuers in each of the nine cohorts. The number of issuers considered in each rating category is after adjusting for rating withdrawals.

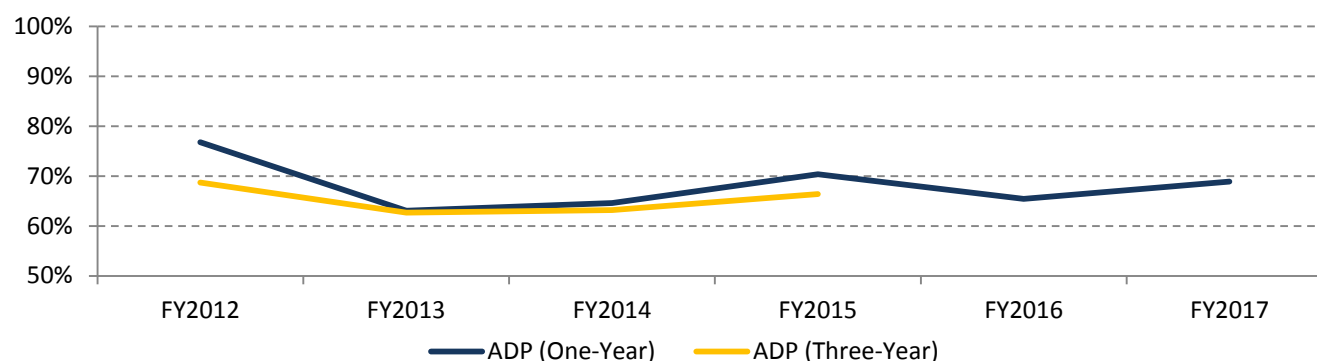
CDR-3: For each rating category, this reflects the weighted average of the default rate of issuers over a **three-year time horizon for eight cohorts**. First, the three-year default rate is computed for each of the eight cohorts from April 1, 2007 to April 1, 2014. Then, the weighted average three-year default rate is computed to arrive at CDR-3 where the weights are the number of issuers in each of the eight cohorts. The number of issuers considered in each rating category is after adjusting for rating withdrawals.

Refer *Annexure-2* for more details on computation of CDR

Average Default Position

The Average Default Position (ADP) measures how well ratings are assigned within a cohort of issuers at a given point in time. The ADP weighs both Type-1 as well as Type-2 errors. Type-1 errors occur when relatively risky credits are assigned high ratings and thereby get placed too high in the rank order. Type-2 errors occur when relatively safe credits are assigned ratings which are too conservative, placing them too low in the rank order. Both sources of error cause the average default position to fall. Numerically, the closer the ADP is to the score of 100%, the greater is the rating system's accuracy. Conversely, an ADP closer to 0% signifies less accurate ratings of the subject cohort. The ADP measure gets influenced by two key variables: (1) the distribution of ratings across various rating categories in a given cohort; and (2) the default proportion of each rating level. The latter is measured by the ratio of the number of defaults in a given rating category to the total number of defaults during the time period of study.

Chart 6: Trend in ADP of ICRA's Ratings



Source: ICRA

- ❖ The proportion of lower rated entities in the universe of ICRA-rated entities has increased significantly over the last few years. The percentage of opening issuers rated in the non-investment grade rating categories (i.e. [ICRA]BB or lower) increased to 72% in FY2017 from 56% in FY2012. Over this period, the median long-term rating for the ICRA-rated universe shifted from [ICRA]BBB as on April 1, 2011 to [ICRA]BB as on April 1, 2016. As highlighted in earlier ICRA studies, this is attributable to the large addition of relatively lower-rated bank loans in the rating universe. Given this stark change in the distribution of ICRA's ratings, a comparison of ADP over the years, as depicted in Chart 7, is not fully informative.
- ❖ However, the distribution of ICRA's ratings has not changed much in the last three years, which makes the last three year comparison of ADP more meaningful. In FY2017, the 'One-Year ADP' of ICRA ratings for the cohort of issuers that defaulted within one-year of rating, improved to 68.9% from 65.5% in the previous year. This was on account of increase in the share of defaults in the [ICRA]BB and lower rating categories out of total defaults to around 95% in FY2017 from 91% in FY2016.

Refer Annexure-3 for more details on computation of ADP

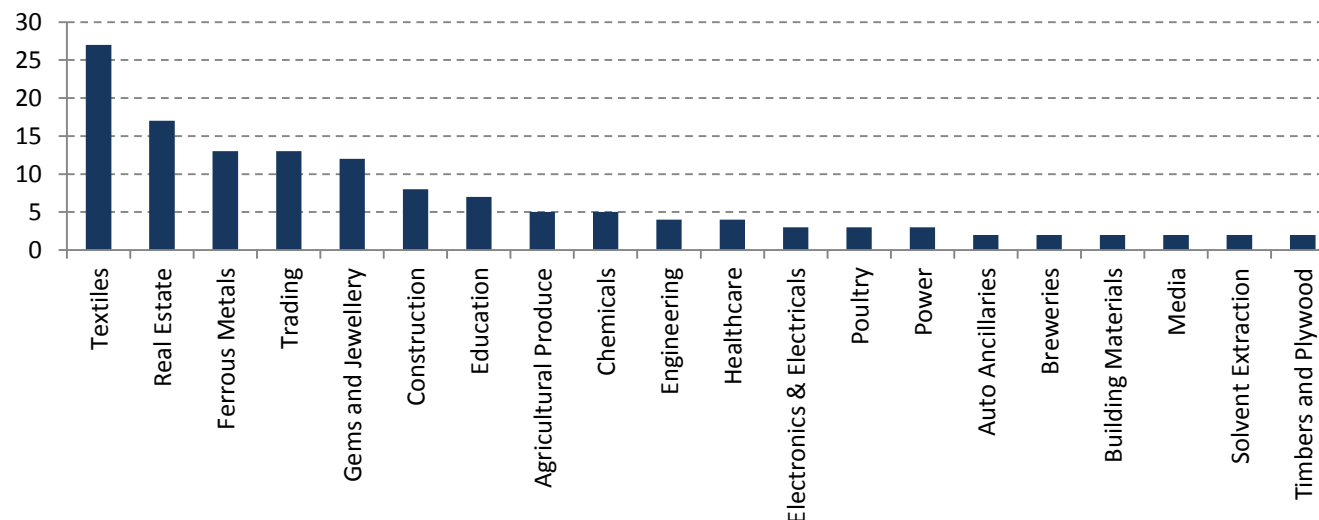
DEFAULT STUDY

Textiles, Real Estate and Ferrous Metals were the largest three sectors in terms of the number of default occurrences during FY2017

In FY2017, the number of Defaults and the Default Rate was higher in the non-investment grade categories than the investment grade categories, as expected

Average time taken to default has increased over the years

Chart 7: Sector-Wise Break-up Of Defaults in FY2017



In addition to above mentioned sectors, there were 20 defaults by entities which are categorized under 'Miscellaneous'

Chart 8: Rating Category-Wise Distribution of Defaults in FY2017 based on Long-Term Ratings at the beginning of year

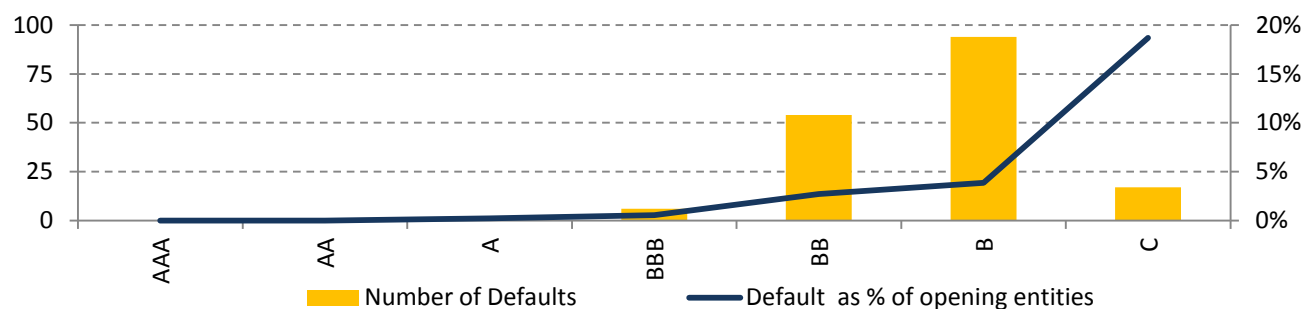
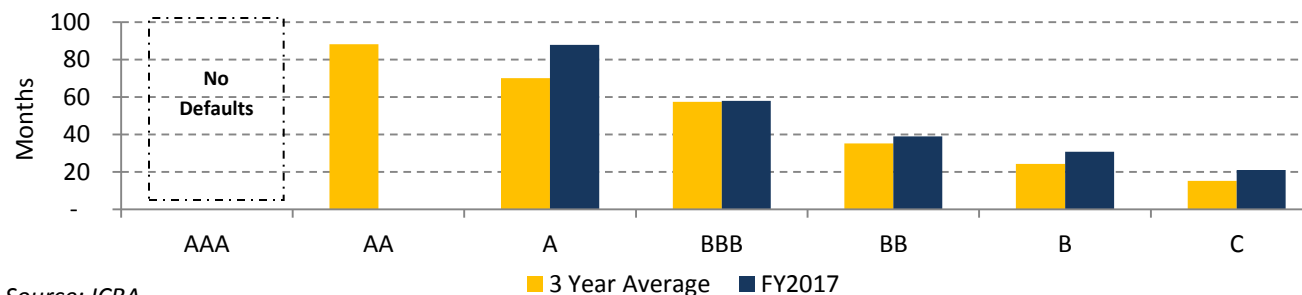


Chart 9: Average Months to Default (Average time taken by entities to default with reference to their initial rating)



Source: ICRA

STRUCTURED FINANCE RATINGS

Upgrades and Downgrades

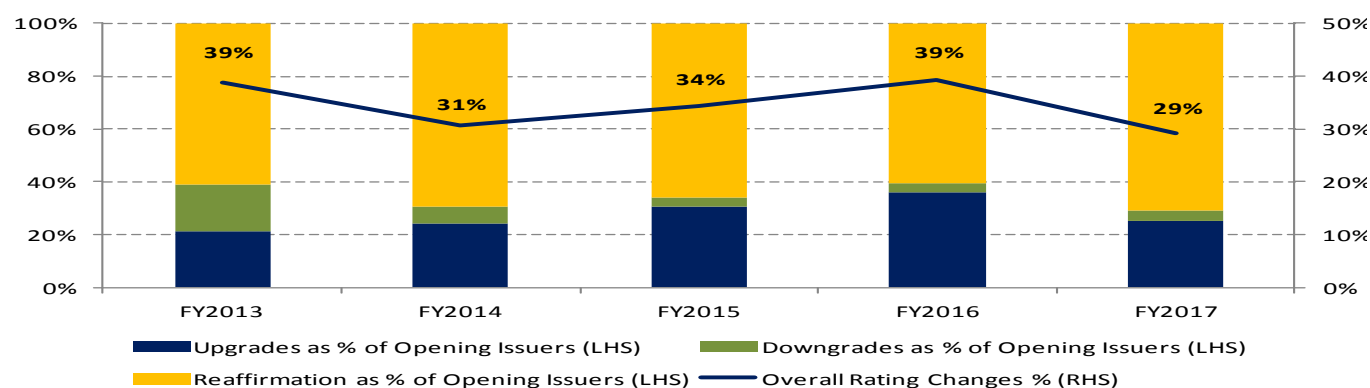
In FY2017, there were 145 rating upgrades and 21 rating downgrades in ICRA rated asset-backed securitisation (ABS) and mortgage-backed securitisation (MBS) transactions. The rating upgrades were mainly on account of the following factors:

- ❖ Upgrades for pass through certificates (PTCs) happened in transactions with micro loans, mortgage loans and SME loans as the underlying asset class. These transactions demonstrated increased Credit Enhancement (CE) cover for the rated instruments over the residual tenure, owing to strong collection performance and rapid amortisation of the pool principal amount. A large proportion of the upgrades occurred in the micro loan segment.
- ❖ Other upgrades happened for the “Second Loss Facility” (SLF) of the CE. In many ABS and MBS transactions, the total CE for senior investors is split into two portions; the SLF is utilised only after the “First Loss Facility” (FLF) has been fully used up. In these cases, the SLF is usually rated in low investment grade category at transaction initiation, usually at the [ICRA]BBB(SO³) level, while the FLF is not rated. Subsequently, with the underlying pools reporting strong performance, the utilisation of the CE for making senior investor payouts was low. Thus, the proportion of FLF to remaining pool principal increased as the transaction progressed, thereby ensuring greater credit comfort for the SLF.

The rating downgrades (in ABS and MBS transactions) belonged to 10 micro loan pools originated by 2 entities. The collection efficiencies of these pools were severely impacted as a result of demonetization due to which the delinquencies in these pools increased significantly and the CE cover available against the delinquent contracts came down. There has been no downgrade in ICRA-rated mortgage-backed securitisation (MBS) ratings so far.

In other structured finance transactions (i.e., other than retail loan securitisation), there were 63 rating upgrades and 12 rating downgrades. Most of these pertained to guarantee-backed debt, wherein the ratings of the guarantors were revised. *Chart 10* depicts the trend in upgrades and downgrades in ICRA-assigned structured finance ratings over the past five years.

Chart 10: Rating Changes and Reaffirmations in Structured Finance transactions as Proportion of Opening Issuers



Source: ICRA Research

³(SO): The letters SO in parenthesis suffixed to a rating symbol stand for Structured Obligation. An SO rating is specific to the rated issue, its terms, and its structure; the categories of AA, A, BBB and BB include ratings with suffixes “+” and “-” within the respective categories. For instance, the category AA contains three ratings: AA+, AA, and AA-.

RATING TRANSITION

The proportion of rating changes has been over 25% during the past five years. However, this has been primarily on account of large number of upgrades in ratings of PTCs in micro-loan backed ABS transactions as well as ratings of SLF, as explained earlier in this report, while the share of ratings that were downgraded was less than 7% in FY2014 and even lower in the last 3 financial years.

The performance of ABS and MBS transactions in the past few years demonstrates the robustness of ratings assigned and credit enhancement stipulated by ICRA in these transactions.

Stability of Ratings

ICRA assigns ratings for ABS, MBS and various other structured obligations, such as guarantee-backed debt and escrow-backed debt⁴. This section presents the one-year transition rates for the various categories of structured finance ratings.

The asset quality of most of the microfinance entities was severely impacted in H2 of FY2017 on account of demonetization. Other than micro loan segment, ICRA-rated ABS and MBS transactions exhibited good performance. There were 21 downgrades in transactions backed by micro loans and no downgrades in other asset classes during FY 2017. Ratings for certain guarantee-backed debt were also downgraded following downgrade in the ratings of the guarantors.

Table 10: One-Year Transition Matrix of Long-Term Structured Finance Ratings for FY2017

FY2017	[ICRA]AAA(SO)	[ICRA]AA(SO)	[ICRA]A(SO)	[ICRA]BBB(SO)	[ICRA]BB(SO)	[ICRA]B(SO) and Lower
[ICRA]AAA(SO)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
[ICRA]AA(SO)	4.9%	95.1%	0.0%	0.0%	0.0%	0.0%
[ICRA]A(SO)	0.0%	20.2%	77.4%	0.8%	1.6%	0.0%
[ICRA]BBB(SO)	0.0%	1.0%	18.2%	78.8%	2.0%	0.0%

⁴ For the present purpose, ABS and MBS include rated bilateral loan pool assignment transactions. Each tranche in a transaction has been accounted for separately. The rated portions of the credit enhancement as well as the liquidity facilities have also been included in the analysis.

RATING TRANSITION

Table 11: One-Year Transition Matrix of Long-Term ABS and MBS Ratings for FY2017

FY2017	[ICRA]AAA(SO)	[ICRA]AA(SO)	[ICRA]A(SO)	[ICRA]BBB(SO)	[ICRA]BB(SO)	[ICRA]B(SO) and Lower
[ICRA]AAA(SO)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
[ICRA]AA(SO)	6.7%	93.3%	0.0%	0.0%	0.0%	0.0%
[ICRA]A(SO)	0.0%	30.8%	69.2%	0.0%	0.0%	0.0%
[ICRA]BBB(SO)	0.0%	0.0%	22.4%	77.6%	0.0%	0.0%

Table 12: Average One-Year Transition Matrix of Long-Term Structured Finance Ratings (Average since April 1, 2007)

Average	[ICRA]AAA(SO)	[ICRA]AA(SO)	[ICRA]A(SO)	[ICRA]BBB(SO)	[ICRA]BB(SO)	[ICRA]B(SO) and Lower
[ICRA]AAA(SO)	97.6%	2.0%	0.3%	0.0%	0.0%	0.0%
[ICRA]AA(SO)	4.2%	93.9%	1.2%	0.0%	0.0%	0.7%
[ICRA]A(SO)	0.7%	13.6%	81.3%	3.0%	0.9%	0.5%
[ICRA]BBB(SO)	0.3%	2.2%	16.9%	78.7%	1.5%	0.4%

Table 13: One-Year Stability of Long-Term Structured Finance Ratings

Average	FY2013	FY2014	FY2015	FY2016	FY2017	One-Year Average Stability since April 1, 2007
[ICRA]AAA(SO)	97.5%	100.0%	100.0%	100.0%	100.0%	97.6%
[ICRA]AA(SO)	86.4% (11.4%)	96.4% (3.6%)	96.3% (3.7%)	98.7% (1.3%)	95.1% (4.9%)	93.9% (4.2%)
[ICRA]A(SO)	79.2% (4.2%)	85.6% (12.2%)	83.3% (16.7%)	78.9% (19.2%)	77.4% (20.2%)	81.3% (14.4%)
[ICRA]BBB(SO)	92.1% (3.9%)	75.2% (23.8%)	74.0% (22.1%)	71.2% (28.8%)	78.8% (19.2%)	78.7% (19.4%)

Figures in parentheses indicate percentage transition to a higher category, or upgrade

In FY2017, the stability rates for structured finance ratings were high for AAA and AA category ratings (100% and 95% respectively). Stability rates were lower in A category and BBB category ratings primarily due to the large number of rating upgrades in micro loan securitisation transactions and second loss facility of the credit enhancement in some other securitisation transactions.

Default Study

The three-year cumulative default rates (CDR-3) for the latest cohort of ICRA's investment grade ratings i.e. pertaining to the cohort of ratings outstanding at the beginning of FY2015, remained stable at 1.14% compared to the cohort of the previous year. Overall, the weighted average CDR-3 of all cohorts starting April 1, 2007, that have completed three years of seasoning, continues to be adversely impacted by ratings in A(SO) and BBB(SO) categories.

The CDR for the AAA(SO) category, as presented in *Table 14*, relates to partial shortfalls to the investors in four ABS transactions, the underlying asset categories being car loans and unsecured personal loans. In one of those transactions, within one month of default, the entire outstanding to the investor was paid through recoveries and there was no eventual loss. These shortfalls were primarily on account of higher-than-expected delinquency against the backdrop of a difficult operating environment and tighter liquidity conditions prevailing during 2008-09. The CDRs for the AA(SO) category and below relate to defaults on instruments backed by State Government guarantee and corporate guarantee.

Table 14: Average Cumulative Default Rates (Cohorts starting April 1, 2007)

	CDR-1	CDR-2	CDR-3
Time Horizon	One-Year	Two-Year	Three-Year
[ICRA]AAA(SO)	0.0%	0.4%	1.0%
[ICRA]AA(SO)	0.2%	0.5%	0.5%
[ICRA]A(SO)	0.6%	1.0%	1.7%
[ICRA]BBB(SO)	0.7%	1.4%	1.4%
Investment Grade	0.3%	0.8%	1.1%

Cumulative Loss to Investors in ABS and MBS Transactions

For rating ABS and MBS transactions, ICRA also factors in the estimate of the relative potential loss to the investor (taking into account credit enhancements, if any) over the tenure of the rated instrument. Hence, it would be appropriate to consider the quantum of loss faced by investors and not just the instance of default. *Table 15* brings out the cumulative loss to investors as a percentage of the initial amounts.

Table 15: Cumulative Loss for Cohorts Starting April 1, 1998 (There were no ratings assigned to ABS/MBS transactions prior to this period)

	Cumulative Loss-1 (based on 19 cohorts)	Cumulative Loss-2 (based on 18 cohorts)	Cumulative Loss-3 (based on 17 cohorts)
Time Horizon	One-Year	Two-Year	Three-Year
[ICRA]AAA(SO)	0.00%	0.00%	0.01%
[ICRA]AA(SO)	0.00%	0.01%	0.00%
[ICRA]A(SO)	0.01%	0.07%	0.26%
[ICRA]BBB(SO)	0.00%	0.00%	0.00%

As *Table 15* shows, the loss rates have been low across all rating categories. In four ABS transactions, there has been some partial shortfall to investors. In one of these transactions, full recovery to the investor happened within one month of default. For others, the shortfall occurred after significant principal had amortised already. Given the highly granular nature of the underlying pools, some cash flow realisation continued, and the eventual loss to the investor was low.

Definitions

1. **Cohort:** Cohorts consist of entities rated on the long-term scale³ at the beginning of the year under study. The entities present in the cohort are evaluated for their performance over one to three year time horizons.

2. **Default:** ICRA defines default as a missed or delayed payment by an entity in breach of the agreed terms of the issue. It must be emphasised that ICRA uses this definition of default consistently for all its default-related studies.

Some additional points on the default definition are as follows:

- If an entity defaults during the year and the rating is withdrawn the same year, the event is considered a case of default.
- If the entity applies for restructuring and starts delaying on repayments, the event is considered a case of default even if the lender subsequently approves the restructuring package with retrospective effect.

3. **Annual Default Rate:** The annual default rate is the number of entities in a particular rating category defaulting in a year 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. It must be emphasised that ICRA follows a strict policy on rating withdrawals: no rating is withdrawn to show better but distorted default rates.

4. **Cumulative Default Rate (CDR):** While the annual default rate captures the default rate on a one-year investment horizon, the CDR captures the default rate over the 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 entities in the cohorts across various rating categories.

5. **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.

³ Including medium-term scale (with medium-term ratings suitably mapped on to ICRA's long-term scale), but excluding structured obligations.

Illustration: Computation of three-year CDR (or CDR-3) for the rating category [ICRA]A

The CDR would be based on defaults experienced in the [ICRA]A ratings outstanding as on April 1, 2014, which would have completed three years of seasoning i.e. FY2015, FY2016 and FY2017.

Step 1: Computation of MDRs for the April 1, 2014 cohort

We take the cohort of issuers rated [ICRA]A as on April 1, 2014 (original cohort C) to explain the concept of MDRs.

$$MDR1 = \frac{\text{Defaults in the year FY2015 out of C}}{(C - (W1 / 2))}$$

MDR1: Marginal default rate for year 1

W1: Withdrawals in FY2015 out of C

$$MDR2 = \frac{\text{Incremental defaults in FY2016 out of C}}{C - W1 - (W2 / 2) \times (1 - MDR1)}$$

MDR2: Marginal default rate for year 2

W2 = Incremental withdrawals in FY2016 out of C

$$MDR3 = \frac{\text{Incremental defaults in FY2017 out of C}}{(C - W1 - W2 - (W3 / 2)) \times (1 - MDR1) \times (1 - MDR2)}$$

MDR3: Marginal default rate for year 3

W3 = Incremental withdrawals in FY2017 out of C

Step 2: Computation of CDRs

Cumulative defaults at the end of year 3 would equal:

$$CDR = \{1 - [1 - MDR1] \times [1 - MDR2] \times [1 - MDR3]\}$$

In the case of ABS and MBS transactions, the numerator for the cumulative loss ratio been taken as “Loss to the investor” and the denominator the “Initial rated amount”.

Weighted Average CDR is calculated using the weighted average MDR1, MDR2 and MDR3 till the latest year i.e. for calculating 10 year Weighted Average CDR, weighted average MDR1 is calculated for 10 years, MDR2 for 9 years and MDR3 for 8 years

Concept of Average Default Position

Here we explain the basics of the concept of Average Default Position (ADP). As an example, we show how to measure “ratings position” and “default probability” for the cohort of issuers having ratings outstanding as on April 1, 2016. When measuring the performance of an ordinal ratings system, we analyze whether companies that ultimately defaulted had lower ratings than the issuers which did not default. The rating system aims to ensure that defaulters are near the bottom of the ratings spectrum long before they default. The ADP is one means of assessing how well this is achieved.

What is Ratings Position?: An entity’s relative rating position is defined as the percentage of entities with higher ratings. Thus, entities rated [ICRA]AAA have positions near 0%; while entities rated [ICRA]C or [ICRA]D have positions near 100%. We can then determine where in the ratings system the entities that defaulted were positioned.

What is Default Proportion?: Let us say a total of 100 defaults happen during a year, of which 2 defaults pertain to the [ICRA]A category, 5 to the [ICRA]BBB category, 13 to the [ICRA]BB category, 50 to the [ICRA]B category and 30 to the [ICRA]C category. Then we define Default Probability as the ratio of the number of defaults in a particular rating category to the total number of defaults in the given time period.

The “Ratings Position”, “Default Probability” and “ADP” of the above ratings performance is computed below for illustration.

Table 16: Illustration: Calculating ADP

	A	B	C	D	E
	No. of Entities Outstanding	Ratings Position	No. of Defaults in One Year	One-Year Default Proportion	E=B*D
[ICRA]AAA	50	0.3%	0	0.0%	0.0%
[ICRA]AA	200	1.9%	0	0.0%	0.0%
[ICRA]A	400	5.6%	2	2.0%	0.1%
[ICRA]BBB	1200	15.5%	5	5.0%	0.8%
[ICRA]BB	3000	41.6%	13	13.0%	5.4%
[ICRA]B	3000	78.9%	50	50.0%	39.4%
[ICRA]C	200	98.8%	30	30.0%	29.6%
	8,050		100	100.0%	75.4%

Total Number of Entities

Total Number of Defaults

Unadjusted ADP

$$ADP = \frac{\text{Unadjusted ADP} - 0.5}{1 - (\text{Total Number of Defaults} / \text{Total Number of Issuers})} + 0.5 = 75.7\%$$

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