CRISIL Ratings

CRISIL Ratings
Default and rating transition study

Up to fiscal 2024

CRISIL Ratings analytical contacts

Somasekhar Vemuri
Chief Criteria Officer and Senior Director, Regulatory Affairs & Operations
somasekhar.vemuri@crisil.com

Ramesh Karunakaran
Senior Director
ramesh.karunakaran@crisil.com

Jaya Mirpuri
Director
jaya.mirpuri@crisil.com

Varsha Chandwani
Associate Director
varsha.chandwani@crisil.com

Naveen Sai
Manager
naveen.sai@crisil.com

Piyush Khanduri
Senior Rating Analyst
piyush.khanduri@crisil.com

Baryab Akhtar
Rating Analyst
baryab.akhtar@crisil.com

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Default rates - Meaning and significance

What is default rate?

Default rate is the number of defaults among rated firms during a specified period, expressed as a percentage of the total number of firms with outstanding ratings at the beginning of the period. Default rates are calculated for each rating category and over multiple periods.

What is transition rate?

Transition rate indicates the number of instances when credit ratings of rated firms have changed over a specified period, expressed as a percentage of the total number of firms with outstanding ratings at the beginning of the period. Transition rates can be calculated for the entire rated population or for a specified rating category.

How are default and transition rates used?

Accurate and reliable default and transition rates are critical inputs for debt market participants for:

a. **Pricing debt**

Default and transition rates are critical inputs in pricing debt instruments or loan exposures. Default probabilities associated with ratings help investors and lenders quantify the credit risk in their debt exposures and provide inputs on whether and how much to lend, and at what price.

b. **Structuring and pricing credit-enhanced instruments**

The structuring, rating and pricing of credit-enhanced instruments depend heavily on the default and transition rates of the underlying borrowers and securities.

c. **Measuring credit risk**

Default and transition rates are key inputs in many quantitative risk assessment models. Investors in rated instruments can manage their risk exposures effectively if they have access to reliable default and transition rates. Transition rates are also important for debt funds that need to maintain a certain threshold of credit quality in their portfolios, and for investors who are, because of regulations or otherwise, mandated to invest only in securities that are rated at or above a certain level.

d. **Indicating efficacy of the rating scale**

Credit ratings indicate probability of default. If ratings are reliable, the default rates should reduce as one moves up the rating scale. Default and transition rates could therefore help validate rating scales and quantify rating stability.

Key variables in default rate computation

i. Definition of default

A clear definition of default is necessary for computing default rates. CRISIL Ratings defines default as any missed payment on a rated instrument. Thus, if a rated debt obligation is not serviced in full by the due date, it moves to 'CRISIL D' or an equivalent rating. Furthermore, as credit ratings are an opinion on the likelihood of timely repayment of debt, any post-default recovery is not factored into the ratings. Thus, the **default rates of CRISIL Ratings are free from default-recognition bias.** CRISIL Ratings believes that such an objective definition of default and its consistent application over time provide a strong foundation for the meaningful third-party use of its default rates.

ii. Period of computation

Default rates may be computed over varying time frames, potentially exposing such computation to period-selection bias. For example, if default rates were published over a period of economic strength, they would appear to be artificially low, and hence would be of limited use to market participants. CRISIL Ratings has published its default rates computed over the past 10 fiscals, which are representative of the prevailing credit environment. CRISIL Ratings also publishes default rates from inception to date, ensuring they are **free from period-selection bias.**

iii. Computation methodology

Default rates may be computed using several methodologies. Each has implications for the numeric outcome, as explained in Table A20. CRISIL Ratings computes default rates using the average cumulative default rate approach and the weighted marginal default rate methodology, with full-year withdrawal adjustments as explained in Annexure 10. Default rates should not be calculated on small data sets (for instance, instrument-specific default rates), as these suffer from sample size issues and are not representative of the default behaviour of Indian corporates.

A 'normalisation' of variables must precede any comparison of default statistics across credit rating agencies (CRAs).

Preface

The uniqueness of the default and ratings transition study of CRISIL Ratings

CRISIL Ratings incorporates global best practices in the computation of default rates and rating transitions. These include a digital definition of default, elimination of period-selection bias, application of the globally accepted marginal default rate method, and use of monthly frequency static pools as base data. CRISIL Ratings was the first CRA in India to use monthly static pools in computing default and transition rates. This rigorous method amplifies the ability to capture defaults and rating changes that have occurred during the year.

Moreover, the default and transition statistics of CRISIL Ratings adequately represent the default characteristics of companies across sectors and industries. This study presents the default and transition statistics for the past 10 fiscals to focus on the more recent rating performance. This addresses the view of many investors and policymakers that the huge surge in default rates in the late 1990s was because of structural changes in the Indian economy and is unlikely to recur, and hence default rates in recent years would be more representative of the prevailing credit environment.

The study also includes the performance of ratings assigned by CRISIL Ratings since its inception in 1987. The data set is the largest and most comprehensive in the Indian debt market as it accounts for multiple economic cycles.

CRISIL Ratings believes it is important to present default rates for the recent period to help stakeholders form an opinion on the default behaviour of the ratings and make informed decisions, especially during and after the unprecedented situation wrought by Covid-19.

In computing default and transition rates in this study, issuers are removed from static pools if, 1) in the beginning of the static pool, the outstanding rating carries an 'INC' suffix (treatment similar to a withdrawn rating), or 2) the issuer is cooperative at the beginning of the static pool but turns non-cooperative later on. The rationale for the above treatment for non-cooperative issuers is that such ratings lack a forward-looking perspective as these are arrived at without any interaction with the management and are based on best available, limited, or dated information about the firm.

However, if an entity defaults after it is classified as 'issuer not cooperating', it is added back to those monthly static pools where it was cooperative for default rate computation. This is the most prudent approach and ensures that default rates are accurate and reliable *(see Annexure 10 for details on treatment of non-cooperative issuers for computing the default statistics).*

Executive summary

The overall annual default rate for firms rated by CRISIL Ratings was 1.3% in fiscal 2024 — a 16-year low — with 70[1] defaults during the fiscal. The default rate has tapered each year over the four fiscals through 2024. Fiscals 2021 and 2022 were deeply impacted by Covid-19, but the overall default rate in these fiscals was less than 2.5%, compared with an average 4.3% in the three fiscals through 2020 (pre-Covid era). This is largely because of timely government and regulatory intervention during the pandemic and the changing rating distribution in the CRISIL Ratings portfolio with the median rating gradually moving up.

The default rate remained low in fiscal 2024 largely because of the improving median rating for the CRISIL Ratings portfolio. Notably, the proportion of ratings in the 'BBB' category or above has increased from ~24% as of March 2013 to ~66% as of March 2024. In fact, after staying in the 'BB' category till March 2021, the median rating shifted to the 'BBB' category in fiscal 2022 and stayed put in fiscal 2024.

This shift in the rating distribution is not as much due to rating actions by CRISIL Ratings as because of the portfolio shrinking at the lower end of the rating spectrum — a phenomenon seen across the rating industry in India. This is because several banks have, in the last seven years, increased the threshold of minimum exposure that requires an external credit rating. This has led to withdrawal of ratings or, more commonly, non-cooperation in the rating process by rated entities, especially in the sub-investment grade categories.

It must be noted that the change in the rating distribution is not reflective of any similar change in the loan portfolios of banks. On the contrary, with entities earlier rated in sub-investment grade categories moving out of the external rating system while continuing in the portfolios of banks as unrated, this may lead to lower risk weights than warranted and, in turn, to undercapitalisation of banks in comparison to the actual credit risk on their books.

Key takeaways of the default and ratings transition study:

- The average default rates for the 'CRISIL BBB' and above rating categories improved during fiscals 2014-2024 compared with fiscals 2013-2023, except for the 'AA' category, where the lone default was due to an operational issue.
- The average default rates of CRISIL Ratings continue to exhibit ordinality across rating categories, that is, the higher rating categories have lower default rates.
- No long-term instrument rated 'CRISIL AAA' has ever defaulted in one-, two- or three-year periods.
- The stability rates of long-term ratings have continued to strengthen over the years for most investment grade categories. The stability rates of investment grade have consistently exceeded 90%.
- The default rates for short-term ratings have improved across rating categories.

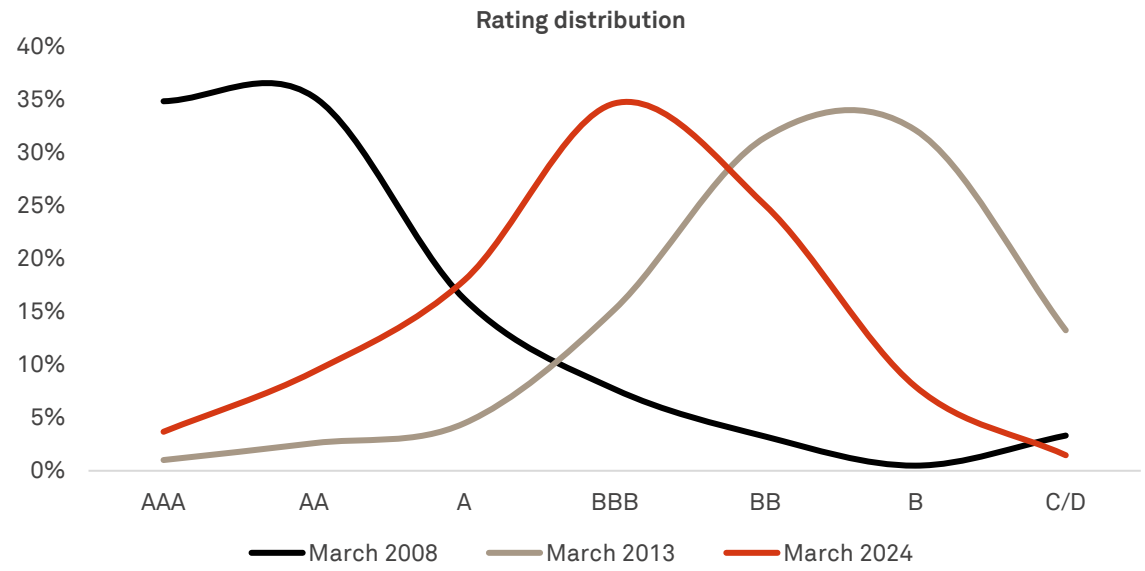
[1] This refers to the number of defaults from active ratings outstanding at the beginning of the fiscal. If we include instances of defaults for 1) issuers with new ratings assigned during the fiscal or 2) issuers that were non-cooperative at the beginning of the fiscal and turned cooperative during the year, the defaults tally would stand at 74.

I. Rating distribution

Our outstanding ratings as of March 2024 cover ~7,000[2] companies. Of these, ~66% are in the 'BBB' or above rating categories. With the introduction of bank loan ratings in 2007 and rapid expansion of our rated portfolio, especially in the lower rating categories, the median rating had moved to 'BB' as on March 31, 2010, from 'AA' as on March 31, 2008, and stayed there till fiscal 2021. The median rating shifted to the 'BBB' category in fiscal 2022 and remained in this category till fiscal 2024 *(see Chart 1)*. The proportion of ratings in the 'BB' or lower categories fell from ~76% as of March 2013 to ~34% as on March 30, 2024.

This is attributable to the portfolio shrinking at the lower end of the rating spectrum mainly because several banks have increased the threshold of minimum exposure that requires an external credit rating. This has led to non-cooperation in the rating process by the rated entities, especially in sub-investment-grade categories.

Chart 1: Shift in the rating distribution of CRISIL Ratings



Source: CRISIL Ratings

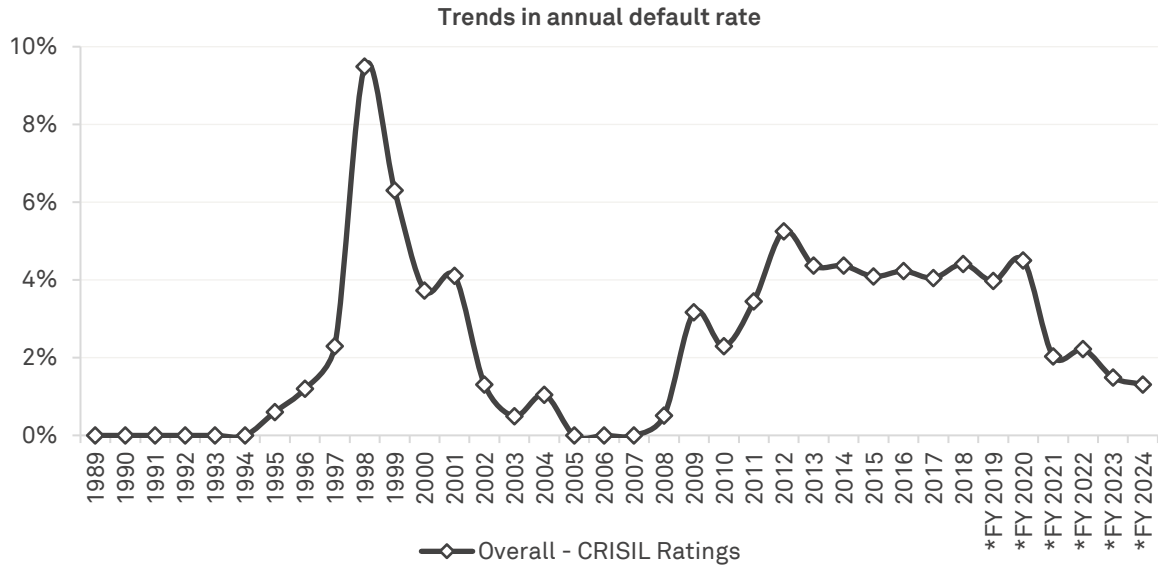
[2] This excludes companies in the INC category. The CRISIL Ratings portfolio had ~12,000 INC issuers as of March 2024. Including such ratings, our outstanding rating list would comprise ~19,000 issuers.

II. Annual default rates of CRISIL Ratings since inception

Annual default rates for corporate issuers[3] at a 16-year low

Default rates have to be both low and stable over a given period to be usefully factored into debt pricing. Chart 2 indicates the trend for the annual default rates of CRISIL Ratings (the proportion of defaults in long-term ratings during a year to outstanding non-default long-term ratings at the beginning of the year). The annual default rate is on a declining trend and was at 1.3% in fiscal 2024, down from 1.5% in the previous fiscal. This is a 16-year low. The default rate remained less than 2.5% for the four fiscals through 2024, despite the pandemic years, because of the gradual improvement in the share of investment grade ratings in the rated portfolio and on the back of relief measures announced by the government and regulators during the pandemic.

Chart 2: Annual default rates in the past decade



There has been a change in reporting of default statistics by CRISIL Ratings from the calendar year to the fiscal, and the default rates from 2019 are on fiscal basis. Refer to CRISIL Default Study FY20 for a detailed comparison of the previous and current methodologies.

Source: CRISIL Ratings

[3] The term 'corporate issuers' has been used generically to include public and private limited companies, societies, trusts, and partnership and proprietorship firms across the manufacturing, financial and infrastructure sectors that have availed of long-term ratings from CRISIL Ratings.

III. Default rates of corporate issuers

One-, two- and three-year cumulative default rates (CDRs)

Credit ratings are opinions on the risk of default: the higher the rating, the lower should be the probability of default. An inverse correlation between credit ratings and default probability — called the test of ordinality — is desirable for CRAs. Table 1 shows the one-, two- and three-year CDRs of CRISIL Ratings across rating categories during fiscals 2014-2024 (*see Annexure 10 for the methodology for calculation of default rates*). The default rates of CRISIL Ratings continue to be ordinal. Average default rates from fiscals 1989 to 2024, indicating rating behaviour over a prolonged period, were also ordinal. Notably, not a single instrument rated 'CRISIL AAA' has ever defaulted in the one-, two- or three-year periods. (*See Table A5, Annexure 3. For default rates based on the annual static pools methodology, see Tables A6 and A7, Annexure 3.)*

Table 1: Average CDRs for long-term ratings – Monthly static pools

One-, two- and three-year CDRs (FY14-24)				
Rating category	**Issuer-months**	**One-year**	**Two-year**	**Three-year**
CRISIL AAA	15,796	0.00%	0.00%	0.00%
CRISIL AA	40,980	0.05%	0.18%	0.31%
CRISIL A	78,111	0.07%	0.34%	0.69%
CRISIL BBB	2,11,375	0.52%	1.42%	2.49%
CRISIL BB	3,08,532	3.01%	6.39%	10.13%
CRISIL B	2,41,508	8.25%	16.70%	24.77%
CRISIL C	5,330	24.20%	39.47%	50.65%
Total	**9,01,632**			

Source: CRISIL Ratings

Since fiscal 2020, there have been three defaults from the 'CRISIL AA' category. These were due to an unexpected legal event (fiscal 2020), the pandemic (fiscal 2021), and an operational issue (fiscal 2024).

Of the three issuers, one is an airport operator that saw revenue plummet because of the steep decline in passenger traffic. This significantly stretched liquidity, already burdened by large investments for capital expenditure in a subsidiary – an airport operator in the same catchment area – and substantial delays in monetisation of real estate, resulting in a default.

The second issuer is an apparel retailer whose operations were significantly impacted as the lockdown led to sudden closure of stores, thereby choking cash flow. The impact of the pandemic was exacerbated by the put option exercised by an investor, even as the retailer, along with other key group companies, was amid a distress slump sale and debt restructuring exercise with other lenders. The weakened financial flexibility of the retailer resulted in a default.

The third default pertains to an operational issue in debt servicing resulting in a one-day delay in servicing a small portion of the debt service amount. This default was recognised by CRISIL Ratings pursuant to a change in its default recognition approach post implementation of a regulatory guidance pertaining to operational issues in debt servicing. In this specific case, while the issuer serviced 97.6% of the amount due on time, a system glitch led to a one-day delay in servicing of the remaining 2.4% of the payment. The delay was not reflective of fundamental credit quality of the company and the delay was rectified quickly. It is to be noted that the rating was simultaneously upgraded to the same level. If not for this default, the one-year, two-year and three-year CDRs for 'CRISIL AA' category for the period fiscals 2014 to 2024 would be 0.02%, 0.12% and 0.21%, respectively.

One-year transition rates for ratings on long- and short-term scales

Transition rates indicate the instances of a given rating migrating to other rating categories (*see Table 2*). As credit ratings drive bond yields and, therefore, their prices, transition rates are relevant for investors who do not intend to hold debt instruments to maturity or need to mark their investments to market regularly. Transition rates are also crucial to investors mandated to hold investments of a minimum credit quality.

Table 2: Average one-year transition rates for long-term ratings (FY14-24) – Monthly static pools

Rating category	Issuer-months	CRISIL AAA	CRISIL AA	CRISIL A	CRISIL BBB	CRISIL BB	CRISIL B	CRISIL C	CRISIL D
CRISIL AAA	15,796	98.83%	1.16%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%
CRISIL AA	40,980	2.26%	96.10%	1.53%	0.04%	0.01%	0.00%	0.00%	0.05%
CRISIL A	78,111	0.14%	3.39%	93.13%	3.13%	0.11%	0.02%	0.01%	0.07%
CRISIL BBB	2,11,375	0.00%	0.04%	3.20%	91.50%	4.61%	0.11%	0.03%	0.52%
CRISIL BB	3,08,532	0.00%	0.00%	0.01%	4.14%	88.97%	3.73%	0.15%	3.01%
CRISIL B	2,41,508	0.00%	0.00%	0.00%	0.03%	8.83%	82.49%	0.40%	8.25%
CRISIL C	5,330	0.00%	0.00%	0.02%	0.00%	0.71%	19.87%	55.20%	24.20%
Total	**9,01,632**								

Note: During fiscal 2023 and 2024, a few bank loan ratings with 'CE' suffix were migrated to ratings without 'CE' suffix, solely in line with regulatory guidance issued to all CRAs. There was no change in the underlying credit profiles; therefore, such rating migrations are not a part of the transition rates computation

Source: CRISIL Ratings

The highlighted diagonal in Table 2 indicates the stability rate of each rating category. The numbers to the left of the highlighted diagonal represent the proportion of upgrades, while those to the right represent the proportion of downgrades for that rating. For instance, between fiscals 2014 and 2024, 96.10% of 'CRISIL AA' ratings remained in that category at the end of one year, 2.26% were upgraded to 'CRISIL AAA' and 1.63% were downgraded to 'CRISIL A' category or lower.

The one-year transition rates of CRISIL Ratings, like its default rates, are comprehensive and reliable. This is because they have been compiled using monthly static pools that cover data for the past 10 fiscals and are representative of the prevailing credit environment. CRISIL Ratings has also published the one-year transition

rates over a longer period (since the first rating was assigned), thus covering multiple business cycles (*see Table A8, Annexure 4; for transition rates based on the annual static pools methodology, see Tables A9 and A10, Annexure 4).*

Table 3 provides the average one-year transition rates for short-term ratings. The stability rate for the 'CRISIL A1+' rating is 98.92%, and 7.44% of 'CRISIL A1' ratings have been upgraded to 'CRISIL A1+' in a year.

Table 3: Average one-year transition rates for short-term ratings (FY14-24) – Monthly static pools

Rating*	Issuer-months	CRISIL A1+	CRISIL A1	CRISIL A2	CRISIL A3	CRISIL A4	CRISIL D
CRISIL A1+	56,749	98.92%	0.96%	0.06%	0.01%	0.02%	0.02%
CRISIL A1	25,357	7.44%	88.42%	3.84%	0.13%	0.14%	0.03%
CRISIL A2	57,930	0.16%	5.63%	89.15%	4.18%	0.58%	0.29%
CRISIL A3	1,12,294	0.02%	0.05%	5.51%	87.65%	6.29%	0.48%
CRISIL A4	3,07,936	0.00%	0.00%	0.02%	2.60%	92.59%	4.79%
Total	**5,60,266**						

*'CRISIL A2', 'CRISIL A3' and 'CRISIL A4' include ratings at the respective modifier levels.

Source: CRISIL Ratings

CRISIL Ratings has also published one-year transition rates since the first rating was assigned, covering multiple business cycles (*see Table A11, Annexure 4; for transition rates based on the annual static pools methodology, see Tables A12 and A13, Annexure 4).*

Movement in stability rates for long-term ratings

Stability rates indicate the proportion of ratings that have remained unchanged over a period. The stability rates of CRISIL Ratings have been high for investment-grade ratings and have generally increased over the years, indicating lower volatility in these categories.

Table 4 shows the one-year stability rates for various 10-year periods. The stability rates for 'CRISIL A' rating and below increased during fiscals 2014-2024. The stability rates for 'CRISIL AAA' and 'CRISIL AA' ratings have consistently exceeded 98% and 95%, respectively, while those for 'CRISIL A' and 'CRISIL BBB' ratings have exceeded 91% and 90%, respectively. The stability rate of 'CRISIL AA' category have marginally declined to 96.1% from 96.6% compared with the previous 10-year period because of increase in the proportion of upgrades to AAA to 2.26% from 1.53% earlier. This increase was because of upgrade of ratings for a group of 18 renewable assets having an obligor-co-obligor structure, wherein the assets saw an improvement in power generation levels during fiscal 2024 given the ongoing performance improvement measures undertaken by the entities.

Table 4: Average one-year stability rates for various periods – Monthly static pools

Period	CRISIL AAA	CRISIL AA	CRISIL A	CRISIL BBB
FY14-24	**98.8%**	**96.1%**	**93.1%**	**91.5%**
FY13-23	98.8%	96.6%	92.8%	91.2%
FY12-22	98.7%	96.4%	92.8%	91.1%
FY11-21	98.6%	96.3%	92.6%	90.9%
FY10-20	98.8%	96.1%	92.4%	90.8%
FY09-19	98.2%	95.4%	92.0%	90.8%

Source: CRISIL Ratings

Table 5 indicates the average one-year stability rate of each rating category over several periods since 1988. These broadly continue to display higher stability each year, barring the exception mentioned above.

Table 5: Average one-year stability rates since 1988 – Monthly static pools

Period	CRISIL AAA	CRISIL AA	CRISIL A	CRISIL BBB
FY89-24	**98.0%**	**94.6%**	**91.2%**	**90.5%**
FY89-23	98.0%	94.8%	90.9%	90.4%
FY89-22	97.8%	94.6%	90.9%	90.5%
FY89-21	97.7%	94.3%	90.5%	90.2%
FY89-20	97.6%	94.0%	90.2%	90.1%
FY89-19	97.6%	93.7%	89.8%	90.0%

Source: CRISIL Ratings

IV. Default rates of structured finance instruments (ratings with 'SO' or 'CE' suffix)

CRISIL Ratings pioneered the rating of several complex structured finance instruments in India. Its data set comprises over 7,500 issue years, including 4,065 issue years for retail asset-backed securities (ABS) and retail mortgage-backed securities (MBS) spanning over 31 years. CRISIL Ratings also had outstanding ratings on a variety of structured finance instruments that were assigned an 'SO' suffix, including those backed by full or partial guarantee. In compliance with the Securities and Exchange Board of India (SEBI) circular in June 2019 (now superseded by the SEBI operational circular dated May 16, 2024), part of the instruments backed by explicit external credit enhancement were assigned the 'CE' suffix from September 2019. The performance of instruments with the 'CE' suffix will continue to be reported as part of structured finance securities. For clarity, the reference to the 'SO' suffix in the default and transition metrics presented in the section below includes instruments that have migrated to the 'CE' suffix.

Furthermore, for a smaller subset of instruments, particularly those issued by corporates or special-purpose vehicles (SPVs), the 'SO' suffix has been removed since September 2019 based on structuring of internal cash flow. Practical challenges arise in tracking such instruments separately from other rated instruments of an issuer on a consistent basis. Hence, to ensure consistency on removal of the suffix, these instruments have been considered at par with other plain vanilla instruments and are being reported as part of corporate issuers. However, given the small subset of such instruments in comparison with the large pool of securitised instruments that carry an 'SO' suffix, this change has not materially impacted the metrics.

One-, two- and three-year CDRs

Table 6 provides the one-, two- and three-year average CDRs for each rating category between fiscals 1993[4] and 2024 (*see Table A14 in Annexure 5 for default rates during fiscals 2014 to 2024)*.

Table 6: Average CDRs for ratings on structured finance instruments (FY1993-2024) – Annual static pools

One-, two- and three-year CDRs (FY1993-2024)				
Rating category	**Issue years**	**One-year**	**Two-year**	**Three-year**
CRISIL AAA (SO)	4,106	0.05%	0.12%	0.24%
CRISIL AA (SO)	1,388	0.22%	0.54%	0.86%
CRISIL A (SO)[5]	1,117	0.54%	2.04%	5.26%
CRISIL BBB (SO)	750	0.93%	2.27%	2.27%
CRISIL BB (SO) and below	153	20.92%	36.73%	39.26%
Total	**7,514**			

Source: CRISIL Ratings

[4] CRISIL Ratings assigned its first structured finance rating in January 1992, which forms a part of the 1993 annual static pool. For calculating default and transition rates for structured finance ratings, CRISIL Ratings has used the annual static pool methodology as defaults in structured finance securities have been rare.

[5] The default rates in the 'CRISIL A (SO)'category are on account of defaults on multiple instruments of two issuers backed by the same guarantor. If all the instruments were treated as one, the three-year default rate would be 3.73%

The non-zero default rates in the 'CRISIL AAA (SO)' category are on account of defaults on instruments by two issuers. One was a central government-guaranteed instrument, which defaulted in fiscal 2005 because the trustee delayed the invocation of the guarantee, thereby delaying payment to investors. Under its rigorous default recognition norms, CRISIL Ratings treated this as a default. The default was subsequently cured, the investors were paid in full, and the rated instrument was redeemed.

The other default pertained to a securitised instrument issued by a non-bank, wherein the originating non-bank defaulted and subsequently went into insolvency in fiscal 2020. The rating was downgraded owing to commingling risks, despite adequate collections and cash collateral. Furthermore, because of legal interpretation issues, the trustee did not make payments to the investors despite available cash collateral. Hence, the rating was downgraded to default in fiscal 2020. The same trust had another instrument that defaulted from the 'CRISIL AA (SO)' category. The defaults here were also subsequently cured, with the repayment to investors normalised and the ratings upgraded.

One-year transition rates

Around 55% of all structured finance instruments – 4,106 of 7,514 issue years – are rated 'CRISIL AAA (SO)' and show a high stability rate of over 98%. Table 7 shows the average one-year transition rates during fiscals 1993-2024 for structured finance instruments.

Table 7: Average one-year transition rate for structured finance instruments (FY1993-2024) – Annual static pools

Rating category	Issue-years	CRISIL AAA (SO)	CRISIL AA (SO)	CRISIL A (SO)	CRISIL BBB (SO)	CRISIL BB (SO) and below	CRISIL D (SO)
CRISIL AAA (SO)	4,106	98.44%	1.32%	0.15%	0.00%	0.05%	0.05%
CRISIL AA (SO)	1,388	5.48%	92.15%	1.80%	0.00%	0.36%	0.22%
CRISIL A (SO)	1,117	0.63%	6.09%	88.27%	2.24%	2.24%	0.54%
CRISIL BBB (SO)	750	1.87%	1.73%	12.00%	81.60%	1.87%	0.93%
CRISIL BB (SO) and below	153	1.96%	1.96%	3.27%	7.19%	64.71%	20.92%
Total	**7,514**						

The highlighted diagonal shows the stability rates for various rating categories

Source: CRISIL Ratings

Movement in stability rates

Table 8: Average one-year stability rates of structured finance ratings since 1993 – Annual static pools

Period	CRISIL AAA (SO)	CRISIL AA (SO)	CRISIL A (SO)	CRISIL BBB (SO)
FY93-24	**98.4%**	**92.1%**	**88.3%**	**81.6%**
FY93-23	98.4%	93.3%	88.4%	83.4%
FY93-22	98.5%	94.1%	88.4%	83.0%
FY93-21	98.4%	93.8%	88.2%	82.0%
FY93-20	98.3%	92.4%	87.8%	81.4%
FY93-19	98.4%	92.2%	88.1%	81.3%

Source: CRISIL Ratings

Note: The stability rate of 'CRISIL AA' (SO) category have marginally declined to 92.1% from 93.3% compared with the previous period because of increase in the proportion of upgrades to AAA (SO) to 5.5% from 4.3% earlier.

Table 9: Average one-year stability rates of structured finance ratings for 10-year periods – Annual static pools

Period	CRISIL AAA (SO)	CRISIL AA (SO)	CRISIL A (SO)	CRISIL BBB (SO)
FY14-24	**99.3%**	**93.2%**	**83.7%**	**81.3%**
FY13-23	99.4%	95.7%	84.3%	83.1%
FY12-22	99.5%	96.3%	85.0%	83.1%
FY11-21	99.5%	95.6%	85.3%	80.0%
FY10-20	99.5%	93.6%	84.8%	79.7%
FY09-19	98.3%	93.2%	86.1%	80.4%

Source: CRISIL Ratings

V. One-year transition rates of retail ABS and MBS issuances

The CRISIL Ratings database of retail ABS and MBS transactions consists of 4,065 issue years across 32 years (fiscals 1993-2024). Table 10 shows the transition rates for ABS and MBS ratings for this period. ABS or MBS instruments rated 'CRISIL AAA (SO)', which account for more than two-thirds of the ratings in the database, have a stability rate of 98.39%.

Table 10: Average one-year transition rates for ABS and MBS ratings (FY1993-2024) – Annual static pools

Rating category	Issue years	CRISIL AAA (SO)	CRISIL AA (SO)	CRISIL A (SO)	CRISIL BBB (SO)	CRISIL BB (SO) and below	CRISIL D (SO)
CRISIL AAA (SO)	2788	98.39%	1.36%	0.18%	0.00%	0.04%	0.04%
CRISIL AA (SO)	399	15.54%	81.95%	1.00%	0.00%	1.25%	0.25%
CRISIL A (SO)	251	2.79%	13.15%	80.88%	2.79%	0.40%	0.00%
CRISIL BBB (SO)	588	2.38%	2.21%	11.90%	82.65%	0.34%	0.51%
CRISIL BB (SO) and below	39	7.69%	7.69%	7.69%	7.69%	61.54%	7.69%
Total	**4,065**						

Source: CRISIL Ratings

The non-zero default rates in the 'CRISIL AAA (SO)' and 'CRISIL AA (SO)' categories are on account of defaults in two retail MBS instruments (one in each of the rating category) issued by a trust. The originator of these instruments was a non-bank, which defaulted and subsequently went into insolvency in fiscal 2020. The ratings on the securitised instruments were downgraded because of commingling risks, despite adequate collections and cash collateral. Furthermore, owing to legal interpretation issues, the trustee did not make payments to the investors despite available cash collateral and hence, the rating was downgraded to default in fiscal 2020. The defaults here were subsequently cured, with the repayment to investors normalised and the ratings upgraded.

The stability rate in the 'CRISIL AAA (SO)' category can be compared with the 'CRISIL AAA' category. Data density is sparse below 'CRISIL AAA (SO)', which explains the non-ordinal stability rates below this rating category. Furthermore, a significant number of instruments rated 'CRISIL AA (SO)' and 'CRISIL A (SO)' have performed well, resulting in upgrades.

Conclusion

The overall annual default rate has reduced to a 16-year low and stood at 1.3% in fiscal 2024 because of the increasing proportion of entities with investment-grade ratings. The median rating is moving up not so much because of rating upgrades but as a result of the active portfolio shrinking at the lower end of the rating spectrum.

The robustness of the rating process of CRISIL Ratings continues to be demonstrated by the ordinality of its default rates and the high stability of its ratings. CRISIL Ratings has set up, stabilised and refined its processes over more than three decades of experience. The quality of its ratings is recognised by both issuers and investors. This study is based on ratings assigned over 30 years, covering multiple credit cycles. Because of the quality, vintage and diversity of the instruments, the size of the database, and the use of monthly static pool methodology, this remains the most comprehensive study on corporate defaults and rating transitions in India.

VI. Annexures

1: Comparison of methodologies

Parameters	SEBI methodology[6]	CRISIL Ratings methodology
Static pool	Monthly static pool	Monthly and annual static pools
Withdrawal adjustment	Exclude ratings withdrawn during the year, except securities	Exclude ratings withdrawn during the year
Treatment of non-cooperative issuers	Issuers that turn non-cooperative during the year are included	Issuers that turn non-cooperative at the beginning of the year are excluded (barring those that have defaulted)
Calculating CDR	Average marginal default rate methodology	Average marginal default rate methodology
Time frame	For the last 121 cohorts for the long run and for cohorts 24, 36 and 48 for the short run	For the last 121 cohorts and since inception
Issuer/instrument reporting	Corporate issuers are reported at the issuer level and 'SO' instruments are reported at the instrument level with the following adjustments: • Corporate issuers with multiple ratings of different seniority levels on different instruments accounted for with a cap of three instances • For structured finance trusts issuing multiple tranches, the number of instances to be capped at three for different categories if the seniority is different	Corporate issuers are reported at the issuer level and 'SO' instruments are reported at the instrument level
Split of databases	Default rates on corporate issuers and structured finance instruments are provided together	Default and transition rates on corporate issuers and structured finance instruments are provided separately

[6] Refers to the SEBI circular dated June 13, 2019, titled 'Guidelines for enhanced disclosures by credit rating agencies' and SEBI's operational circular for CRAs dated January 6, 2023

2: CDRs disclosed as per SEBI[7] methodology

As per the SEBI methodology outlined in Annexure 1, Tables A1-A4 include ratings on corporate issuers, structured finance instruments and non-cooperative issuers. The computation includes adjustments prescribed in the June 2019 circular (superseded by the operational circular issued by SEBI on May 16, 2024).

Table A1: Long-run average default rates for long-term instruments – Monthly static pools

One-, two- and three-year CDRs (FY14-24)			
Rating category	**One-year**	**Two-year**	**Three-year**
CRISIL AAA	0.01%^	0.07%^	0.15%
CRISIL AA	0.07%*	0.24%	0.43%
CRISIL A	0.09%	0.44%	0.89%
CRISIL BBB	0.50%	1.31%	2.18%
CRISIL BB	2.25%	4.32%	6.11%
CRISIL B	4.10%	7.52%	10.26%
CRISIL C	14.51%	22.73%	28.43%

^On account of one default in fiscal 2020 that occurred due to an unexpected legal event

*Since fiscal 2020, there have been three defaults. These were due to an unexpected legal event (fiscal 2020), Covid-19 pandemic (fiscal 2021) and an operational issue (fiscal 2024).

With respect to the operational issue in fiscal 2024, while the issuer serviced 97.6% of the amount due on time, a system glitch led to a one-day delay in the remaining 2.4% of the payment. If this operational issue related default were to be excluded, the one-year, two-year and three-year default rates for the 'AA' category would stand at 0.05%, 0.19% and 0.35%, respectively.

Table A2: Long-run average default rates for short-term instruments – Monthly static pools

Rating*	One-year default rate FY14-24
CRISIL A1+	0.02%
CRISIL A1	0.03%
CRISIL A2	0.30%
CRISIL A3	0.45%
CRISIL A4	3.21%

*'CRISIL A2', 'CRISIL A3' and 'CRISIL A4' include ratings at the respective modifier levels.

7 The computation of default rates here is in line with the methodology articulated in the SEBI circular dated June 13, 2019, and SEBI's operation/al circular dated May 16, 2024. These are also available on the CRISIL Ratings website at https://www.crisilratings.com/content/dam/crisil/generic-images1/our-businesses/ratings/regulatory-disclosure-highlighted-policies/regulatory-disclosures/sebi/disclosures-as-per-sebi-circular-cir-mirsd-cra-6-2010/long-run-and-short-run-average-default-rates.pdf

Table A3: Short-run average default rates for long-term instruments – Monthly static pools

One-, two- and three-year CDRs			
Rating category	**One-year**	**Two-year**	**Three-year**
Period	**FY22-24**	**FY21-24**	**FY20-24**
CRISIL AAA	0.00%	0.00%	0.02%
CRISIL AA	0.08%*	0.15%	0.34%
CRISIL A	0.02%	0.12%	0.36%
CRISIL BBB	0.13%	0.35%	0.83%
CRISIL BB	1.31%	2.62%	4.08%
CRISIL B	1.77%	3.58%	5.77%
CRISIL C	8.07%	12.62%	17.54%

*Since fiscal 2022, there was one default seen in fiscal 2024. This was due to an operational issue. While the issuer serviced 97.6% of the amount due on time, a system glitch led to a one-day delay in the remaining 2.4% of the payment. If this operational issue related default were to be excluded, the one-year, two-year and three-year default rates for the 'AA' category would stand at 0.00%, 0.00% and 0.12%, respectively.

Table A4: Short-run average default rates for short-term instruments – Monthly static pools

Rating*	**One-year default rate FY22-24**
CRISIL A1+	0.00%
CRISIL A1	0.00%
CRISIL A2	0.04%
CRISIL A3	0.09%
CRISIL A4	1.77%

*'CRISIL A2', 'CRISIL A3' and 'CRISIL A4' include ratings at the respective modifier levels.

Further, SEBI in its August 25th, 2022 circular (now superseded by SEBI's master circular for credit rating agencies (CRAs) dated May 16, 2024) mandated additional disclosure of CDRs limited to credit ratings of securities that are listed, or proposed to be listed, on a recognized stock exchange for both wherein ratings of non-cooperative issuers shall be included as well as excluded in the cohort. These are available on the CRISIL Ratings website at https://www.crisilratings.com/content/dam/crisil/generic-images1/our-businesses/ratings/regulatory-disclosure-highlighted-policies/regulatory-disclosures/sebi/disclosures-as-per-sebi-circular-cir-mirsd-cra-6-2010/long-run-and-short-run-average-default-rates.pdf

3: Comparative default rates for different periods

Table A5: CDRs for long-term ratings (FY1989-2024) – Monthly static pools

One-, two- and three-year CDRs				
Rating category	**Issuer months**	**One-year**	**Two-year**	**Three-year**
CRISIL AAA	30,156	0.00%	0.00%	0.00%
CRISIL AA	71,877	0.04%	0.23%	0.55%
CRISIL A	1,15,411	0.27%	1.13%	2.27%
CRISIL BBB	2,77,029	0.73%	1.95%	3.49%
CRISIL BB	3,89,606	3.40%	7.14%	11.06%
CRISIL B	3,01,253	8.34%	16.80%	24.32%
CRISIL C	10,184	21.87%	35.67%	45.04%
Total	**11,95,516**			

Source: CRISIL Ratings

Table A6: CDRs for long-term ratings (FY14-24) – Annual static pools

One-, two- and three-year CDRs				
Rating category	**Issuer years**	**One-year**	**Two-year**	**Three-year**
CRISIL AAA	1,450	0.00%	0.00%	0.00%
CRISIL AA	3,783	0.08%	0.21%	0.33%
CRISIL A	7,202	0.07%	0.38%	0.75%
CRISIL BBB	19,319	0.48%	1.30%	2.35%
CRISIL BB	27,808	2.99%	6.40%	10.09%
CRISIL B	21,962	8.04%	16.32%	24.29%
CRISIL C	521	23.22%	36.90%	49.35%
Total	**82,045**			

Source: CRISIL Ratings

Table A7: CDRs for long-term ratings (FY1989-2024) – Annual static pools

One-, two- and three-year CDRs				
Rating category	**Issuer years**	**One-year**	**Two-year**	**Three-year**
CRISIL AAA	2,601	0.00%	0.00%	0.00%
CRISIL AA	6,230	0.06%	0.27%	0.53%
CRISIL A	10,104	0.29%	1.13%	2.28%
CRISIL BBB	24,132	0.65%	1.81%	3.33%
CRISIL BB	33,276	3.39%	7.13%	10.93%
CRISIL B	25,620	8.26%	16.67%	24.25%
CRISIL C	872	21.44%	34.84%	44.90%
Total	**1,02,835**			

Source: CRISIL Ratings

4: Comparative transition rates for different periods

One-year transition rates for long-term ratings

Table A8: Average one-year transition rates (FY1989-2024) – Monthly static pools

Rating category	Issuer months	CRISIL AAA	CRISIL AA	CRISIL A	CRISIL BBB	CRISIL BB	CRISIL B	CRISIL C	CRISIL D
CRISIL AAA	30,156	98.03%	1.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CRISIL AA	71,877	1.89%	94.61%	3.04%	0.29%	0.09%	0.02%	0.01%	0.04%
CRISIL A	1,15,411	0.09%	3.42%	91.21%	4.09%	0.75%	0.06%	0.11%	0.27%
CRISIL BBB	2,77,029	0.00%	0.05%	3.10%	90.53%	5.24%	0.23%	0.12%	0.73%
CRISIL BB	3,89,606	0.00%	0.01%	0.01%	3.98%	88.63%	3.71%	0.26%	3.40%
CRISIL B	3,01,253	0.00%	0.00%	0.00%	0.04%	8.36%	82.79%	0.46%	8.34%
CRISIL C	10,184	0.00%	0.00%	0.01%	0.12%	1.36%	18.13%	58.51%	21.87%
Total	**11,95,516**								

Source: CRISIL Ratings

Table A9: Average one-year transition rates (FY14-24) – Annual static pools

Rating category	Issuer years	CRISIL AAA	CRISIL AA	CRISIL A	CRISIL BBB	CRISIL BB	CRISIL B	CRISIL C	CRISIL D
CRISIL AAA	1,450	98.83%	1.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CRISIL AA	3,783	2.22%	96.06%	1.61%	0.03%	0.00%	0.00%	0.00%	0.08%
CRISIL A	7,202	0.15%	3.32%	93.28%	3.04%	0.11%	0.01%	0.01%	0.07%
CRISIL BBB	19,319	0.00%	0.04%	3.22%	91.37%	4.73%	0.12%	0.05%	0.48%
CRISIL BB	27,808	0.00%	0.00%	0.01%	4.11%	89.11%	3.64%	0.14%	2.99%
CRISIL B	21,962	0.00%	0.00%	0.00%	0.02%	8.50%	83.06%	0.38%	8.04%
CRISIL C	521	0.00%	0.00%	0.00%	0.00%	0.77%	18.81%	57.20%	23.22%
Total	**82,045**								

Source: CRISIL Ratings

Table A10: Average one-year transition rates (FY1989-2024) – Annual static pools

Rating category	Issuer-years	CRISIL AAA	CRISIL AA	CRISIL A	CRISIL BBB	CRISIL BB	CRISIL B	CRISIL C	CRISIL D
CRISIL AAA	2,601	98.04%	1.96%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CRISIL AA	6,230	1.94%	94.74%	2.99%	0.18%	0.08%	0.02%	0.00%	0.06%
CRISIL A	10,104	0.11%	3.37%	91.35%	3.96%	0.76%	0.06%	0.10%	0.29%
CRISIL BBB	24,132	0.00%	0.05%	3.18%	90.55%	5.23%	0.22%	0.12%	0.65%
CRISIL BB	33,276	0.00%	0.01%	0.01%	3.99%	88.72%	3.63%	0.26%	3.39%
CRISIL B	25,620	0.00%	0.00%	0.00%	0.03%	8.28%	82.98%	0.45%	8.26%
CRISIL C	872	0.00%	0.00%	0.00%	0.11%	1.61%	17.55%	59.29%	21.44%
Total	**1,02,835**								

Source: CRISIL Ratings

One-year transition rates for short-term ratings

Table A11: Average one-year transition rates (FY1989-2024) – Monthly static pools

Rating*	Issuer months	CRISIL A1+	CRISIL A1	CRISIL A2	CRISIL A3	CRISIL A4	CRISIL D
CRISIL A1+	1,13,269	97.99%	1.64%	0.21%	0.13%	0.02%	0.01%
CRISIL A1	38,804	8.58%	86.57%	4.00%	0.37%	0.21%	0.27%
CRISIL A2	77,669	0.19%	5.39%	88.40%	4.64%	0.93%	0.44%
CRISIL A3	1,48,118	0.02%	0.05%	5.10%	87.18%	7.01%	0.64%
CRISIL A4	4,02,312	0.00%	0.01%	0.02%	2.47%	92.52%	4.99%
Total	**7,80,172**						

Source: CRISIL Ratings

Table A12: Average one-year transition rates (FY14-24) – Annual static pools

Rating*	Issuer years	CRISIL A1+	CRISIL A1	CRISIL A2	CRISIL A3	CRISIL A4	CRISIL D
CRISIL A1+	5,183	98.92%	0.95%	0.08%	0.02%	0.02%	0.02%
CRISIL A1	2,346	7.03%	88.45%	4.01%	0.21%	0.17%	0.13%
CRISIL A2	5,314	0.19%	5.49%	88.90%	4.48%	0.62%	0.32%
CRISIL A3	10,237	0.02%	0.06%	5.47%	87.54%	6.53%	0.39%
CRISIL A4	27,955	0.00%	0.00%	0.01%	2.58%	92.66%	4.74%
Total	**51,035**						

*'CRISIL A2', 'CRISIL A3' and 'CRISIL A4' include ratings at the respective modifier levels.

Source: CRISIL Ratings

Table A13: Average one-year transition rates (FY1989-2024) – Annual static pools

Rating*	Issuer years	CRISIL A1+	CRISIL A1	CRISIL A2	CRISIL A3	CRISIL A4	CRISIL D
CRISIL A1+	9,732	98.02%	1.64%	0.23%	0.07%	0.03%	0.01%
CRISIL A1	3,353	9.10%	86.16%	3.94%	0.36%	0.21%	0.24%
CRISIL A2	6,797	0.19%	5.38%	88.24%	4.72%	1.03%	0.43%
CRISIL A3	12,816	0.02%	0.05%	5.20%	87.22%	6.96%	0.55%
CRISIL A4	34,179	0.00%	0.01%	0.01%	2.48%	92.53%	4.97%
Total	**66,877**						

*'CRISIL A2', 'CRISIL A3' and 'CRISIL A4' include ratings at the respective modifier levels.

Source: CRISIL Ratings

5: Comparative default rates for structured finance instruments

Table A14: CDRs for ratings of structured finance instruments (FY14-24)

One-, two- and three-year CDRs				
Rating category	**Issue years**	**One-year**	**Two-year**	**Three-year**
CRISIL AAA (SO)[8]	1,191	0.08%	0.22%	0.47%
CRISIL AA (SO)	838	0.24%	0.43%	0.73%
CRISIL A (SO)	466	1.29%	6.80%	16.89%
CRISIL BBB (SO)	481	1.46%	3.03%	3.03%
CRISIL BB (SO) and below	92	20.65%	34.33%	42.54%
Total	**3068**			

Source: CRISIL Ratings

6: Comparative default and transition rates for corporate issuers, including ratings on non-cooperative issuers[9]

Table A15: CDRs for long-term ratings – Monthly static pools

One, two and three-year CDRs (FY14-24)				
Rating category	**Issuer months**	**One-year**	**Two-year**	**Three-year**
CRISIL AAA	15,802	0.00%	0.00%	0.00%
CRISIL AA	41,022	0.05%	0.18%	0.31%
CRISIL A	78,956	0.06%	0.33%	0.67%
CRISIL BBB	2,27,956	0.48%	1.26%	2.12%
CRISIL BB	4,75,988	2.21%	4.26%	6.03%
CRISIL B	6,54,324	4.08%	7.48%	10.20%
CRISIL C	11,990	13.62%	21.34%	26.76%
Total	**15,06,038**			

Source: CRISIL Ratings

[8] The non-zero default rates in the 'CRISIL AAA (SO)' category are on account of default on a securitised instrument issued by a non-bank, where the originating non-bank defaulted and subsequently went into insolvency in fiscal 2020. Because of legal interpretation issues, the trustee did not make payments to the investors despite available cash collateral.

[9] In computing default statistics, entities classified as 'issuer not cooperating' were considered a part of the static pools and were not treated as withdrawals on classification.

Table A16: Average one-year transition rates for long-term ratings (FY14-24) – Monthly static pools

Rating category	Issuer months	CRISIL AAA	CRISIL AA	CRISIL A	CRISIL BBB	CRISIL BB	CRISIL B	CRISIL C	CRISIL D
CRISIL AAA	15,802	98.82%	1.17%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%
CRISIL AA	41,022	2.26%	96.04%	1.55%	0.04%	0.05%	0.00%	0.00%	0.05%
CRISIL A	78,956	0.14%	3.36%	92.38%	3.33%	0.70%	0.03%	0.01%	0.06%
CRISIL BBB	2,27,956	0.00%	0.04%	2.99%	85.92%	10.27%	0.25%	0.04%	0.48%
CRISIL BB	4,75,988	0.00%	0.00%	0.02%	3.12%	78.67%	15.87%	0.11%	2.21%
CRISIL B	6,54,324	0.00%	0.00%	0.01%	0.14%	3.70%	91.87%	0.20%	4.08%
CRISIL C	11,990	0.00%	0.00%	0.01%	0.00%	0.32%	8.97%	77.09%	13.62%
Total	**15,06,038**								

Source: CRISIL Ratings

Table A17: Average one-year transition rates for short-term ratings (FY14-24) – Monthly static pools

Rating*	Issuer months	CRISIL A1+	CRISIL A1	CRISIL A2	CRISIL A3	CRISIL A4	CRISIL D
CRISIL A1+	56,811	98.85%	0.98%	0.07%	0.02%	0.06%	0.02%
CRISIL A1	25,617	7.36%	87.90%	3.94%	0.21%	0.56%	0.03%
CRISIL A2	59,771	0.15%	5.47%	86.93%	4.33%	2.83%	0.28%
CRISIL A3	1,21,526	0.02%	0.05%	5.13%	81.98%	12.38%	0.45%
CRISIL A4	5,89,488	0.00%	0.00%	0.07%	1.63%	95.11%	3.19%
Total	**8,53,213**						

*'CRISIL A2', 'CRISIL A3' and 'CRISIL A4' include ratings at the respective modifier levels.

Source: CRISIL Ratings

7: Industry-wise classification of defaults

CRISIL Ratings is the first rating agency in India to publish industry-wise classifications and a chronological account of all the defaults in its portfolio that form part of the static pools used for computing default rates. Since the inception of CRISIL Ratings, there have been 3,763 defaults by issuers with long-term ratings. Over the past 36 years, six industries (textiles, construction and engineering, food products, real estate development, distributors and metals and mining) accounted for almost half of the defaults, as shown in Table A18.

Table A18: Industry-wise chronological break-up of defaults on long-term instruments in the past 36 years

Industry	1988 to 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Textiles- apparel and luxury goods		1	1	3	1	3	1	1		1					3	8	12	26	50	45	53	46	55	52	70	55	39	10	16	8	10
Construction and engineering					1			1								3	4	4	16	21	28	20	25	23	32	34	27	11	14	11	13
Food products				1	2	3					1					3	6	7	23	30	44	43	51	35	52	40	34	16	13	8	8
Diversified consumer services																1	1	8	10	22	11	16	17	9	13	11	11	5	9	6	4
Real estate development						1		1								1	2	4	7	14	35	25	38	35	16	16	21	5	6	3	1
Distributors																1	3	9	31	37	48	59	53	39	42	27	15	9	6	1	1
Metals and mining			2	1	6	2	2	2			1					2	6	28	34	31	23	35	19	23	6	4	12	6	5	4	2
Hotels, restaurants and leisure						1										2	5	7	16	10	8	4	6	9	2	2	7	3	6	2	0
Machinery					2	2	1									3	3	6	17	19	18	20	27	16	13	10	21	4	2	5	7
Speciality retail																		2	8	11	13	13	9	16	9	10	15	8	3	3	1
Containers and packaging					2	1										1	3	1	13	10	6	12	12	7	9	10	6	4	3	3	2
Construction materials			1		2	2	1		1							2	1	3	8	12	5	3	6	11	6	7	5	3	3	1	0
Independent power producers and energy traders								1							1	1	3	4	7	10	6	5	6	13	6	3	9	0	0	1	0
Auto components			1		1	1		1								1	1	2	11	9	6	5	10	9	4	2	2	3	2	1	1
Pharmaceuticals			1		1	2		1								4	2	5	7	4	13	7	4	3	6	6	5	1	0	2	3
Electrical equipment						1	1										2	7	6	11	9	7	2	2	8	6	6	1	3	2	3
Chemicals				1	2	2	3	3	1								1	1	6	3	4	7	6	8	3	3	5	3	2	2	0
Building products															1			2	9	1	3	8	10	9	7	8	6	3	4	5	0
Paper and forest products				1	1	1									1	1	5	4	4	6	4	6	4	4	2	1	1	0	1	1	1
Commercial services and supplies						1										3		1	5	2	4	7	7	5	5	5	13	8	1	2	5
Household durables		1	1		3				1							3		1	5	2	4	5	4	3	3	3	6	1	3	0	0
Healthcare providers and services																	1	2	4	4	2	6	3	6	5	4	9	3	1	1	2
Electronic equipment instruments and components							1									1		4	1	2	8	3		6	5	3	7	2	0	1	0
Non-banking financial companies				4	12	2												2						1			1	0	0	0	1
Others				2	9	2	2				1					2	7	21	43	30	23	33	29	20	21	35	34	13	10	8	9
Total defaults	0	2	7	13	45	27	12	11	3	1	3	0	0	0	6	43	68	161	341	346	378	395	403	364	345	305	317	122	113	81	74
Overall annual default rate*	0.0%	0.6%	1.2%	2.3%	9.5%	6.3%	3.7%	4.1%	1.3%	0.5%	1.0%	0.0%	0.0%	0.0%	0.5%	3.2%	2.3%	3.5%	5.3%	4.4%	4.4%	4.1%	4.2%	4.1%	4.4%	4.0%	4.5%	2.0%	2.2%	1.5%	1.3%

* The proportion of total defaults in a particular year to total non-default ratings outstanding at the beginning of the year (adjusted for withdrawals and non-cooperative issuers during the year)

Source: CRISIL Ratings

Over the past decade, the lowest number of defaults, in absolute terms, was in 2024. Consequently, the annual default rate was at a 16-year low. Default rates were higher between fiscals 1997 and 1999 because of economic slowdown and structural/regulatory changes, especially in the financial sector.

8: Analysis of defaults: Time to default (for corporate issuers)

Higher rating categories farther away from default

An analysis of the 3,763 defaults (see Table A19) indicates that the higher-rated firms were farther away from default than the lower-rated ones. Issuers that were rated in the 'CRISIL B' or 'CRISIL C' categories and that defaulted did so in 20 and 18 months, respectively; issuers rated in the 'CRISIL A' and 'CRISIL AA' categories and that defaulted did so in 51 and 62 months, respectively.

Time to default for issuers rated 'CRISIL AAA' was around 15 years[10].

Table A19: Average time to default (for defaulted firms) in number of months

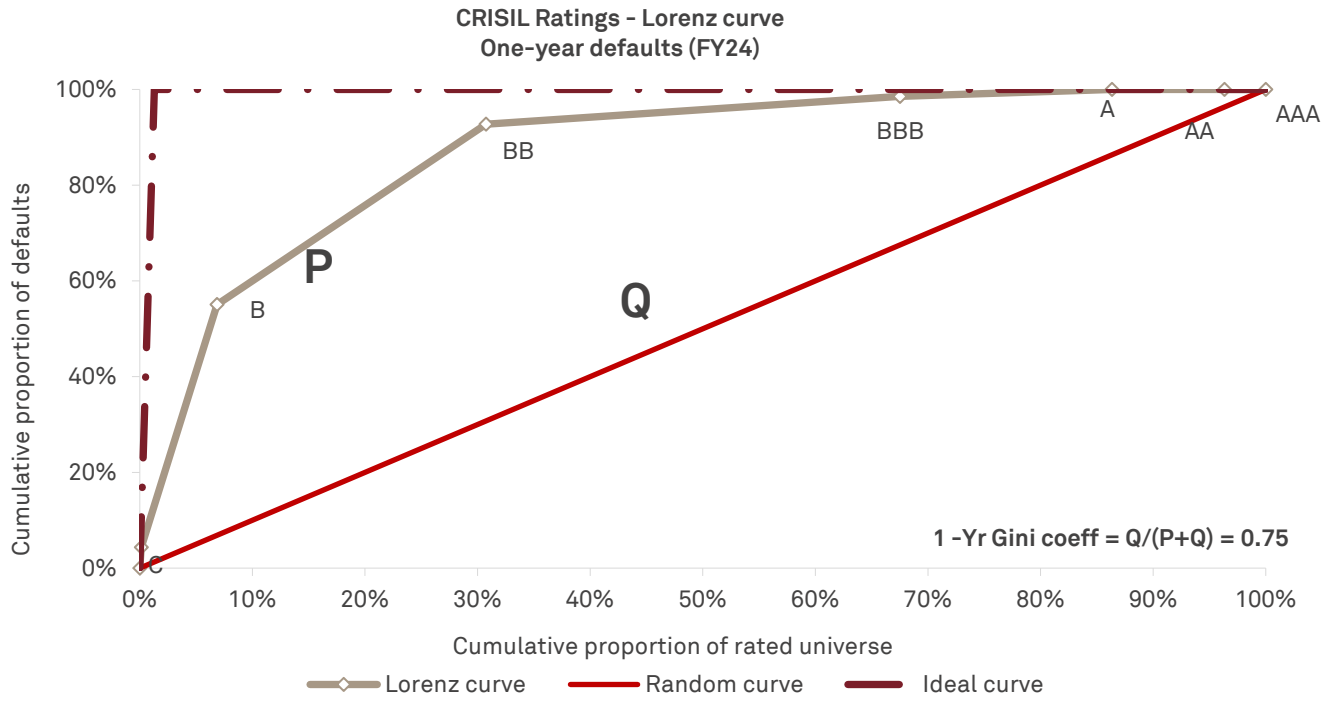
Rating category	Months to default
CRISIL AAA	178
CRISIL AA	62
CRISIL A	51
CRISIL BBB	38
CRISIL BB	26
CRISIL B	20
CRISIL C	18

Source: CRISIL Ratings

[10] In the 36 years through 2024, only one entity originally rated 'CRISIL AAA' has ever defaulted. The entity was last rated 'CRISIL AAA' in 2009 and has been gradually downgraded over the years on account of significant changes in its business and financial risk profiles. It eventually defaulted in 2018 from a much lower rating category. The defaulted instrument was repaid shortly post default, and the investors did not face any loss.

9: The Lorenz curve and Gini coefficient for CRISIL Ratings

Chart 3: Graphical representation of the Gini coefficient and the Lorenz curve



Source: CRISIL Ratings

The one-year Gini coefficient moderated to 0.75[11] in fiscal 2024, from 0.76 in fiscal 2023, driven by the slightly higher proportion of defaults from the investment grade categories. Furthermore, in the longer term, the one-year Gini coefficient improved to 0.52 during fiscals 1989-2024 from 0.46 in fiscals 1989-2018. Though the Gini coefficient has improved over the years owing to rigorous surveillance processes, it continues to face challenges such as:

- Typically, a 'CRISIL C' rating is assigned when a firm defaults on its unrated debt while continuing to service the rated debt on time. In most instances, such firms continue to default on the unrated debt but service the rated bank loan facilities (typically, a revolving working capital facility) on time, thereby avoiding a 'CRISIL D' rating. Ideally, for a high Gini coefficient, a large portion of defaults should be from the 'CRISIL C' category, the lowest non-default rating category.
- There is an inherent mismatch between default recognition by CRAs, such as CRISIL Ratings, vis-à-vis the banking system. CRISIL Ratings recognises default as a 'single-rupee shortfall or single-day delay' while banks recognise non-performing assets at 90 days past due. Hence, for the Gini coefficient to improve, there needs to be a systemic shift towards timely payments.
- There has been a gradual shift in recent years in the rated portfolio, with the median rating moving up to the 'CRISIL BBB' category in fiscal 2022 (and staying there in fiscal 2024). However, for almost 10 fiscals till 2021, more than half of the rated portfolio of CRISIL Ratings consisted of issuers in the 'CRISIL BB' and lower categories. Not only are these categories characterised by limited information availability about the rated entities, but they are also inherently vulnerable to sharp rating changes.

[11] If operational default of AA category was to be included, Gini coefficient moderates to 0.73

Reading the chart on the Gini coefficient, a measure of rating accuracy

If ratings had no ability to predict default, then default rates and ratings would not be correlated. For instance, consider that 30 defaults occur out of 1,000 ratings (that is, a default rate of 3%) in one year. For a randomly selected set of 100 companies (10% of the rated population), three companies could be expected to have defaulted (10% of the defaulting population), as the number of defaults expected in a sample is proportional to the selected number of companies. This is represented by the random curve, which will be a diagonal straight line. However, if ratings are perfect predictors of default, then the lowest 30 ratings should capture all the defaults in this case. This is represented by the ideal curve.

As no rating system is perfect, the actual predictive power of ratings lies between the two extremes. The cumulative curve (the Lorenz curve) represents the actual case. The closer the cumulative curve is to the ideal curve, the better the predictive power of the ratings. This is quantified by measuring the area between the cumulative and random curves (area Q in Chart 3) in relation with the area between the ideal and random curves (the sum of the areas P and Q in Chart 3). This ratio of Q/(P+Q), called the Gini coefficient or the accuracy ratio, will be 1 if ratings have perfect predictive ability as the cumulative curve will coincide with the ideal curve. On the other hand, the ratio will be close to zero if the ratings have poor predictive power as the cumulative curve will almost coincide with the random curve. Thus, a higher Gini coefficient indicates the predictive ability of any rating system.

Definitions

The Lorenz curve

The Lorenz curve is a plot of the cumulative proportion of category-wise defaults (of issuers with ratings outstanding at the beginning of the year and in default at the end of the year) against the total proportion of issuers up to that category. For instance, in Chart 3, around 93% of the defaults recorded were in categories 'CRISIL BB' and lower; these included nearly 31% of the total outstanding ratings, that is, the lower 31% of the ratings accounted for 93% of all defaults.

The random curve

The random curve is a plot of the cumulative proportion of issuers against that of defaulters, assuming that defaults are distributed equally across rating categories. In such a plot, the lower 31% of the issuers would account for exactly 31% of defaults; the plot would, therefore, be a diagonal straight line, and the ratings would have no predictive value.

The ideal curve

The ideal curve is a plot of the cumulative proportion of issuers against that of defaulters if ratings were perfectly ranked such that all defaults occurred only among the lowest-rated firms. As the overall default rate of CRISIL Ratings is 1.3%, the lower 1.3% of issuers would have accounted for all defaults if the ratings were perfect default predictors and rating categories above this level would have no defaults at all.

Accuracy ratio/Gini coefficient

Accuracy ratio = (Area between the Lorenz curve and the random curve)/(Area between the ideal curve and the random curve).

10: Methodology used by CRISIL Ratings in this study

Time period of reporting

CRISIL Ratings started reporting its default statistics on a fiscal basis from the 2020 edition of the default and transition study, as against the reporting period of January-December followed earlier. Moreover, default statistics have been aligned with the cohort size defined by SEBI in its June 2019 circular (now superseded by SEBI's operational circular for CRAs dated May 16, 2024). Earlier, CRISIL Ratings presented its 10-year default statistics with 109 cohorts. In line with disclosure norms specified by SEBI, CRISIL Ratings has started publishing its default statistics with 121 cohorts from fiscal 2020. This improves comparability of default rate metrics with those as per the regulatory requirement.

Disclosure of 'SO' instruments

In its June 2019 circular, SEBI revised the norms for assigning ratings with an 'SO' suffix. While traditional securitisation instruments will retain the 'SO' suffix, those with explicit external credit enhancement will carry a 'CE' suffix. Instruments issued by corporates, which could have carried an 'SO' suffix earlier, based on an internal credit enhancement/structure, shall not carry a suffix anymore. As per the revised norms, in September 2019, CRISIL Ratings changed the suffix for instruments that earlier carried an 'SO' suffix. For default statistics, these instruments were earlier reported under structured obligations. Instruments with the 'CE' suffix will continue to be reported under the 'structured obligation' dataset. As these instruments continue to carry distinctive risks — different from those of the underlying borrowers — they are reported as part of structured obligations.

On the other hand, ratings that had an 'SO' suffix earlier, which has been removed, were reported as part of long-term instruments from September 2019. This refers primarily to instruments issued by corporates, or mostly SPVs, based on structuring of the internal cash flow. In compliance with the SEBI circular dated June 13, 2019 (now superseded by SEBI's operational circular for CRAs dated May 16, 2024), CRISIL Ratings removed the suffix from these instruments from September 2019. To ensure consistency, keeping in mind the practical challenges in tracking these instruments on a consistent basis without a suffix, the instruments were considered on par with other plain vanilla instruments on removal of the suffix and reported as part of corporate issuers.

Static pools

CRISIL Ratings moved to the monthly static pool method from the annual static pool method with the 2009 edition of the default and transition study. The monthly static pool methodology captures more granular data, such as intra-year transition and defaults, thus ensuring accurate and useful default and transition rate estimates.

A static pool of a particular date is composed of a set of firms with a given rating outstanding as on that date. CRISIL Ratings forms static pools on the first day of every month for its default and transition study. As CRISIL Ratings calculates one-, two- and three-year CDRs, the static pools formed are of similar lengths. Once formed, the pool does not admit any new firms. For a firm to be included in an n-year static pool, its rating has to be outstanding through the entire period of 'n' years. Firms with ratings withdrawn or placed in default in the interim will continue to be withdrawn or in default for the remaining years. Therefore, a firm that ceases to be rated and is subsequently rated again, or a firm that defaults and recovers later is not considered for re-inclusion in the pool.

A firm that remains rated for more than a month is counted as many times as the number of months over which it was rated. This method assumes that all ratings are current through an ongoing surveillance process which, in the case of CRISIL Ratings, is the cornerstone of the value proposition of its ratings.

For instance, a firm that had ratings live (not withdrawn) from April 1, 2000, to April 1, 2002, would appear in 12 consecutive static pools of one-year lengths, such as April 2000-April 2001; May 2000-May 2001; June 2000-June 2001 and so on. On the other hand, a firm first appearing on April 1, 2002, and having an outstanding rating until May 1, 2003, will appear only in the April 2002-April 2003 and May 2002-May 2003 static pools of one-year lengths. Static pools of two- and three-year lengths are formed in a similar manner.

Weighted average marginal default rate

otations:

For data of CRISIL Ratings,

M: Month of formation of the static pool (1988-2020)

R: A given rating category on the rating scale ('CRISIL AAA' - 'CRISIL C')

t: Length of the static pool in years on a rolling basis (1, 2, 3)

$P_t^M(R)$ = Defaults from rating category 'R' in the t^{th} year of the M-month static pool

$Q_t^M(R)$ = Non-defaulted ratings outstanding at the beginning of the t^{th} year in the rating category R from the M-month static pool

Illustration[12]: Consider a hypothetical static pool formed in April 2000 and with 100 companies outstanding at a rating of 'CRISIL BB' at the beginning of the month. If there is one default in the pool in the first year (2000), three in the second (2001) and none in the third (2002), with no withdrawals in any year, then:

$P_1^{April\text{-}2000}$(CRISIL BB) = 1; $P_2^{April\text{-}2000}$(CRISIL BB) = 3; and $P_3^{April\text{-}2000}$(CRISIL BB) = 0

$Q_1^{April\text{-}2000}$(CRISIL BB) = 100; $Q_2^{April\text{-}2000}$(CRISIL BB) = 99; and $Q_3^{April\text{-}2000}$(CRISIL BB) = 96

[12] This illustration is for explanation only and does not indicate the actual or observed default rates in any rating category.

For rating category R, the t^{th} year marginal default rate for the M-month static pool is the probability of a firm in the static pool formed in the month M, not defaulting until the end of period (t-1) and defaulting only in year t.

Mathematically, the marginal default rate (MDR) for category 'R' in the year t, from the M-month static pool **$MDR_t^M(R)$,** is defined as

$MDR_t^M(R) = P_t^M(R)/Q_t^M(R)$

Therefore, $MDR_1^{\text{April-2000}}(\text{CRISIL BB}) = P_1^{\text{April-2000}}(\text{CRISIL BB})/Q_1^{\text{April-2000}}(\text{CRISIL BB}) = 1/100 = 0.01$

The average MDR is calculated as the weighted average of MDRs of all static pools of similar lengths in the period, with the number of ratings outstanding at the beginning of the period (with appropriate withdrawal adjustments discussed later) as weights.

Cumulative average default rate

Survival analysis is used to compute cumulative default probabilities. Using the average MDR, the cumulative probability of a firm defaulting is calculated as follows:

Cumulative probability of a firm defaulting by the end of (t+1) years	=	[Cumulative probability of the firm defaulting by the end of t years + Probability of the firm defaulting in the $(t+1)^{th}$ year]

Furthermore, for a firm to default in the $(t+1)^{th}$ year, it should survive until the end of t years. So,

Probability of the firm defaulting in the $(t+1)^{th}$ year	=	[Probability of the firm not defaulting until the end of the t^{th} year * Marginal probability of the firm defaulting in the $(t+1)^{th}$ year]

Now,

Probability of the firm not defaulting until the end of the t^{th} year	=	1- Cumulative probability of the firm defaulting by the end of t years

Hence,

Probability of the firm defaulting in $(t+1)^{th}$ year	=	[(1- Cumulative probability of the firm defaulting by the end of t years) * Marginal probability of the firm defaulting in the $(t+1)^{th}$ year]

Therefore, returning to the first expression,

Cumulative probability that a firm defaults by the end of (t+1) year	=	Cumulative probability of the firm defaulting by the end of t years	+	[(1- Cumulative probability of the firm defaulting by the end of t years) * (Marginal probability of the firm defaulting in $(t+1)^{th}$ year)]

Restating the above in notation, if **$CPD_{t+1}(R)$** = cumulative default probability of a firm, rated R defaulting in t+1 years, then,

$CPD_t(R) = MDR_t(R)$; for t = 1

$CPD_{t+1}(R) = CPD_t(R) + (1- CPD_t(R)) * MDR_{t+1}(R)$ for t = 2, 3

Withdrawal adjustment

Within a year of obtaining the rating, a firm may move to one of three states: timely payment (non-default rating outstanding), default on debt repayment, or full debt repayment and withdrawal of the rating. As firms are not monitored post withdrawal, the 'true state' (whether in default or not) of a firm whose rating has been withdrawn, remains unknown in subsequent months. Therefore, a modified $MDR_t^M(R)$ that ignores firms whose rating has been withdrawn, is an appropriate measure of marginal default probability. As mentioned earlier, $Q_t^M(R)$ is also adjusted for firms that belong to the static pool and have defaulted by the beginning of year t. The modified $Q_t^M(R)$ is as follows:

$Q_t^M(R)$ = Number of firms in the static pool formed at the beginning of month M with rating category R

less Number of defaults until the end of period (t-1)

less Number of firms with ratings withdrawn until the end of period t

CRISIL Ratings uses full-year withdrawal adjustments as opposed to no withdrawal adjustment or a mid-year withdrawal adjustment, as issuers whose ratings were withdrawn are not immune to the risk of default. Moreover, there is lack of reliable information that meets stringent requirements of CRISIL Ratings after withdrawal.

Post-default return of a firm

After default, firms sometimes recover and, consequently, receive a non-default rating. As a credit rating by CRISIL Ratings indicates the probability of default, default is considered an 'absorbing state', that is, a firm cannot come back to its original static pool after default. In the static pool methodology, the recovered firm is considered as a new firm which, if it continues to be rated, appears in the static pool of the month in which it recovered.

Methodology for transition rates

The t-year transition rate (from rating R1 to rating R2) for a static pool is the proportion of firms rated R1 at the beginning of the static pool and are found to be at R2 at the end of t years. This proportion is called the t-year transition probability from R1 to R2. The t-year transition matrix is formed by computing transition probabilities from various rating categories (except 'CRISIL D') to other rating categories.

Withdrawal-adjusted transition rates are computed as mentioned above, but excludes the firms whose rating has been withdrawn at the end of t years. Ratings at a point of time and at the end of the t^{th} year are considered for the computation of t-year transition rates.

How CRISIL Ratings treats non-cooperative issuers

The operational circular issued by SEBI on May 16, 2024 (including the erstwhile circular dated November 1, 2016, 'Enhanced Standards for Credit Rating Agencies'), makes it mandatory for CRAs to continue to rate non-cooperative issuers on a best-effort basis. To highlight non-cooperation, SEBI has insisted that all such ratings use the suffix 'issuer not cooperating'[13](INC). CRISIL Ratings uses its criteria to assess information adequacy risk and arrive at credit ratings commensurate with the extent of information received from issuers, categorised as non-cooperative.

In computing default and transition rates in this study, issuers are removed from static pools if, 1) at the beginning of the static pool, the outstanding rating carries an 'INC' suffix (treatment similar to a withdrawn rating), or 2) the issuer is cooperative at the beginning of the static pool, but turns non-cooperative later. However, if the firm in the second case defaults after becoming non-cooperative, it is treated as a defaulter from its cooperative rating and is included in the default computation.

The rationale for the above treatment for non-cooperative issuers is that such ratings lack a forward-looking perspective, as these are arrived at without any interaction with the management and are based on best available, limited, or dated information about the firm.

For instance, a company, ABC, has an outstanding rating of 'CRISIL BB' as on April 1, 2019. It turns non-cooperative during fiscal 2020, following which the rating is migrated to 'CRISIL B; issuer not cooperating'. At the end of fiscal 2020, assume that CRISIL Ratings comes to know — either from the banker or from sources in the public domain — of delays by ABC in debt servicing. The rating is then downgraded to 'CRISIL D; issuer not cooperating'. In computing default statistics, ABC will be considered to have defaulted from 'CRISIL BB' and not 'CRISIL B', as it was cooperative at the beginning of the fiscal.

However, if a company rated 'CRISIL B; issuer not cooperating' as on April 1, 2019, gets downgraded to 'CRISIL D' at the end of fiscal 2020, the default would not have been counted in the annual static pool as it was non-cooperative at the beginning of the fiscal.

Further, if an entity turns cooperative again after it was classified as non-cooperative and subsequently defaults, the withdrawal adjustment is reversed, and the entity is again moved to the static pool, so that the default rate is calculated from its initial cooperative status in the cohort.

CRISIL Ratings has published the default and transition statistics, including ratings on non-cooperative issuers, in *Annexure 6*. It should be noted that for the computation of these default and transition statistics, the static pool for December 2016, does not include non-cooperative issuers, as SEBI had mandated that all CRAs categorise issuers in the 'issuer not cooperating' category from January 2017.

[13] SEBI had, in its original circular, directed CRAs to append 'issuer did not cooperate; based on best available information' with the rating symbol in the same font size for non-cooperative issuers. However, in a joint representation to SEBI, CRAs clarified that for the sake of brevity, they will use the suffix 'issuer not cooperating'. This will be followed by an asterisk mark, which will read as 'issuer did not cooperate; based on best available information'.

Table A20: Various approaches to computing default rates

Withdrawal adjustments	**Approach 1: Full-year withdrawal adjustments** Exclude all ratings withdrawn during a year from the base, for calculating default rates. **Approach 2: Mid-year withdrawal adjustments** Exclude half of the ratings withdrawn during a year from the base for calculating default rates. **Approach 3: No withdrawal adjustments** Take all ratings outstanding at the beginning of a year as the base, even though some ratings are withdrawn during the year.	CRISIL Ratings follows Approach 1, as it believes that issuers whose ratings are withdrawn, are not immune to the risk of default post withdrawal. Reliable information about timeliness of debt repayment, which meets stringent requirements of CRISIL Ratings, is not available once the rating is withdrawn. Approach 1 results in the most conservative estimate of default rates among the three approaches.
Calculating CDR	**Approach 1: Calculate CDR directly, without using the MDR** Calculate CDR over a period as a ratio of the number of firms defaulting, to the number of firms at the beginning of the period, ignoring intra-period withdrawals. **Approach 2: Average MDR methodology** Calculate the MDR, weigh it by sample size and accumulate it over a period to arrive at the average CDR.	CRISIL Ratings follows Approach 2 and considers only the ratings that are not withdrawn at the end of each year as the base. This leads to a more accurate and conservative estimate of the default rates. Approach 1 is not comprehensive as it ignores a large portion of the credit history of firms that may have been rated soon after the static pool was formed.
Post-default return of a firm	**Approach 1: Treat default as an 'absorbing state'** Retain the status of a defaulting firm as default even after recovery. Treat the recovered firm as a new firm from the point of recovery. **Approach 2:** Treat a defaulted and subsequently recovered firm as a non-defaulted firm from the point of recovery. So, if a non-defaulted firm defaults in the second year and recovers in the third year, it will not be treated as a defaulted firm in the third-year MDR calculation.	CRISIL Ratings follows Approach 1. As credit ratings are an opinion on the likelihood of default, the default state is treated as an absorbing state or an end point, and the firm's rating continues to be in 'default'. If a firm emerges from default and has a non-default rating on its debt instruments, it is treated as a new firm and part of a different static pool from the time its rating is revised from 'CRISIL D'.

Data pooling	**Approach 1: Static pool** Charge defaults against all ratings of the issuer during the period. **Approach 2:** Charge defaults against the initial rating of the issuer. **Approach 3:** Charge defaults against the most recent year's rating of the issuer.	CRISIL Ratings follows Approach 1. Debt instruments are tradable and can be held by different investors at different points of time. As credit ratings — which convey an opinion on the likelihood of default — are intended to benefit investors through the life of the instrument, CRISIL Ratings believes charging defaults against all the ratings of the issuer during the period, is the most appropriate approach to compute default rates. Other approaches may have limited utility. For instance, Approach 2 may be relevant only to an investor who invests in the first-rated debt issuance of a firm and holds it to maturity. Approach 3 may be relevant only to an investor who happens to be holding the instrument just a year prior to its default.

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CRISIL Ratings pioneered the concept of credit rating in India in 1987. With a tradition of independence, analytical rigour and innovation, we set the standards in the credit rating business. We rate the entire range of debt instruments, such as, bank loans, certificates of deposit, commercial paper, non-convertible / convertible / partially convertible bonds and debentures, perpetual bonds, bank hybrid capital instruments, asset-backed and mortgage-backed securities, partial guarantees and other structured debt instruments. We have rated over 33,000 large and mid-scale corporates and financial institutions. We have also instituted several innovations in India in the rating business, including rating municipal bonds, partially guaranteed instruments and infrastructure investment trusts (InvITs).

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