

A structural lift for infra LGD

Time to factor in improvements in the ecosystem



Analytical contacts

Somasekhar Vemuri

Senior Director, Regulatory Affairs and Operations
and Chief Criteria Officer

somasekhar.vemuri@crsil.com

Ramesh Karunakaran

Director - Rating Criteria and Product Development

ramesh.karunakaran@crsil.com

Chaitali Nehulkar

Director - Rating Criteria and Product Development

chaitali.nehulkar@crsil.com

Vishal Raj

Rating Analyst – Rating Criteria and Product Development

vishal.raj@crsil.com

Executive summary

The infrastructure sector in India has witnessed a slew of measures which have addressed legacy issues of the past. This is reflected in the raft of policy facilitations that have helped shore up the attractiveness of Indian infrastructure as an investment destination by several notches.

With these measures, a gradual perceptible shift has been witnessed in the infrastructure sector credit risk profile. Rightfully, this improvement in risk profile should be reflected in both Probability of Default (PD) and Loss Given Default (LGD) – the twin pillars of credit risk assessment.

While improvement in PD is readily visible and is also factored into the pricing, thanks to the preponderance of PD ratings available in the public domain, improvement in LGD is something less talked about or visible.

Data on loss (and recovery) rates are scarce and difficult to find. Defaults do not occur on a regular basis and when they do, information around the event and the resulting loss and recovery is rarely available in the public domain. Needless to say, the resolution process typically takes years to complete. It is for this reason that LGD tends to remain relatively static (compared to PD) or is strongly anchored around the historical data.

To understand the LGD in the infrastructure sector, CRISIL Ratings conducted a study on 80 stressed infrastructure assets for which data was available courtesy its involvement as a rating agency in providing recovery risk ratings/independent credit evaluations in the stressed assets space. For other assets, data was collected from publicly available sources.

The LGD for infrastructure assets was found to be in the 20-60% range, well below the typical LGD (60-80%) factored in by lenders.

As the study is based on a sample of assets where CRISIL Ratings could find data that it considered reliable, the findings may not be representative of the overall population of stressed infrastructure assets. It is crucial to understand the study's results within the context of these limitations and avoid generalizing the LGD data to the broader infrastructure sector.

Investor sentiment and median PD ratings in the CRISIL Ratings portfolio of infra-assets witnessed a gradual improvement driven by four key measures. These include: 1) better risk sharing between public and private counterparts; 2) increase in central counterparty presence; 3) IBC and pre-IBC platforms 4) benefits offered by newer platforms such as infrastructure investment trusts (InvITs).

Structural reforms in the infrastructure space not only influence the PD but also the LGD. Although shifts in sectoral fundamentals tend to impact both, PD and LGD, these are distinct concepts in credit risk analysis, representing different aspects of credit risk.

The LGD in infrastructure is expected to improve with better risk sharing in concession agreements, reduced bottlenecks during the construction stage, improvement in sponsor credit profile, strong investor demand for infra projects and healthy recovery prospects driven by IBC and pre-IBC resolution platforms.

This article aims to capture the shift in credit ratings in the infrastructure space and analyse the key changes in the sector that could drive the LGD from hereon. It also indicates that Expected Loss (EL) ratings — capturing PD and LGD — can provide additional insights and help in risk-based pricing.

Limitations of the CRISIL Ratings study

The study is based on a sample of stressed infrastructure assets where data was readily available and considered reliable by CRISIL Ratings. The data in this study includes only stressed infrastructure assets, for which LGD estimates were credible and readily available.

Further, there are some sub-segments where the sample size is very low. It may be difficult to arrive at definitive conclusions on LGD for such sub-segments which have extremely low sample size in this study.

There could be many other stressed assets in the infrastructure space where data is not available and hence do not form part of this study. If this data is made available, the findings could be different from what has been presented in this study. In general, LGD estimates would have been far more representative if there is an increase in the sample size across subsegments and where actual figures are available after successful resolution.

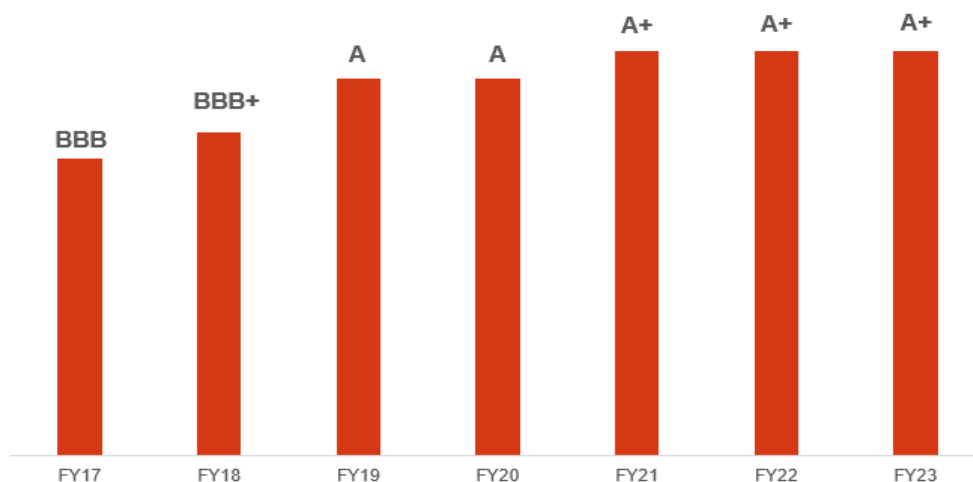
The historical distribution of actual recoveries has also varied widely both across subsegments and within a subsegment. The variability could have been due to general macroeconomic and credit market conditions. Other reasons causing the variability include the relative seniority of claims, and the differences in negotiating strength among a company's creditors who may own debt at different group entities.

So, users of this report need to note that the findings of this study suffer from the limitations discussed above and that it is better to avoid generalizing the LGD estimates from this study to the broader infrastructure sector without conducting further analysis or supplementing it with additional data.

Infrastructure is an evolved space today

The infrastructure sector has undergone significant improvements to address the concerns of the developers and the investors. This is reflected in the median ratings in CRISIL Ratings portfolio of infrastructure assets as shown below in the chart 1. Please refer CRISIL Ratings article 'Building Bonds' for details.¹

Chart 1: Median credit rating of CRISIL Rated infrastructure entities



Source: CRISIL Ratings

¹ [Building bonds - its time bond investors embraced the infrastructure sector](#)

Empirical data indicates healthy trend in LGD for infra

To understand the historical LGD in the infrastructure sector, CRISIL Ratings conducted a study on 80 infrastructure assets for which data was available. In many of these assets, CRISIL Ratings was directly involved as a rating agency executing a mandate. These include credit ratings of companies which acquired stressed assets, Independent Credit Evaluation (ICE) of resolution plans required by banks as part of RBI regulations and the recovery risk ratings of security receipts issued by ARCs which are also required as per RBI regulations.

The data was supplemented with publicly available sources, including from Insolvency and Bankruptcy Board of India (IBBI) and other recognized portals.

LGD of infrastructure assets

The table 2 below highlights the estimated LGD range of the 80 infrastructure assets that witnessed default in the past decade.

Table 2: Study on LGD of stressed infrastructure assets

Sector	No. of assets studied	Estimated LGD range (%)
Renewables	12	20-30%
Transmission	4	20-30%
Roads	33	30-50%
Power plants (thermal, gas)	31	60-70%

The estimated LGD range in the table is backed by experience-based intuitive judgement. The LGD estimates are based on stressed infrastructure assets for which data was available, and the data does suffer from sampling bias. For sectors such as renewables and transmission, the case history of defaults is limited, leading to a low number of data points.

The study spans the past decade, it comprises a diverse range of projects, which underscores transitional LGDs. It includes projects that defaulted a long time back and those that defaulted recently.

Legacy defaults involve assets burdened by substantial debt due to cost overruns and unresolved issues. These may have seen a decline in value leading to elevated LGDs for lenders, and despite the emergence of resolution through the IBC in the latter half of last decade.

In contrast, the recent defaults that were studied have benefited from timely identification and resolution, yielding lower LGD. It is important to note that the study's conclusions are based on available data from a sample of reliable cases. Therefore, the findings must be interpreted in the context of these limitations.

Rationale for the sectoral LGD range for infrastructure assets:

Renewables (Solar / Wind): Renewables as a sector has limited case history of defaults. These projects face limited risk during construction because they are modular in nature and have low complexity. The operational assets also have shown a fairly stable operating performance track record. However, the relatively older assets have higher equipment cost and tariff structure. Over the past few years, the equipment cost, and tariff rates have come down, more so in the case of solar power projects. Hence, LGD for renewables asset could be in the range of 20%-30%.

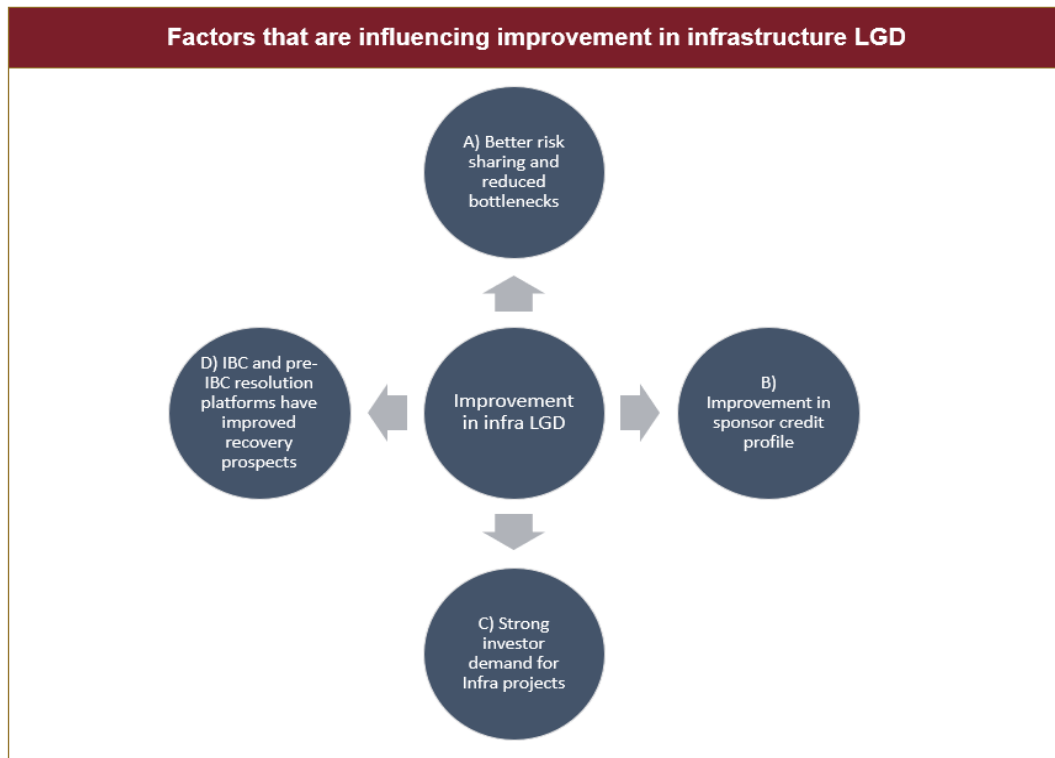
Transmission: Transmission assets, similar to renewables, have limited case history of defaults. Transmission projects face challenges mainly during the construction stage. Delays in getting RoW approvals and forest clearances have impacted project execution in the past, resulting in cost overruns. However, once operationalized, transmission projects have minimal complexity as there are no moving parts, revenues are based on line availability (which has not witnessed any major disruption) and low counterparty credit risk (due to point of connection mechanism for interstate transmission assets). LGD for transmission assets, which may default mainly due to construction complexity, could be in the range of 20-30%.

Roads: Road projects in the past faced challenges such as significant cost overruns, delays in land acquisition, protracted project execution, and poor sponsor health leading to unviable levels of debt. In addition, the bidding price was overly optimistic and not commensurate with actual traffic volume and toll revenues. It needs to be noted that vast majority of roads that defaulted in the past were toll roads. LGD for stressed road assets could be in the range of 30-50%.

Power plants (thermal / gas): Power plants, especially those dependent on coal, faced challenges related to fuel supply. Delays or disruptions in coal supply, inadequate quantity of coal, changes in coal pricing policies or cancellation of coal mines impacted the operational efficiency and financial viability of power plants. Construction delays, land acquisition issues, regulatory clearances, and other execution challenges increased project costs and debt burden, making it difficult for power plants to generate sufficient revenues. Lack of PPA also affected the cash flows of power plants. Consequently, power plants faced financial stress due to high debt levels, inadequate capital structure, and mismatched cash flows. Hence, default of the thermal power assets resulted in an LGD in the range of 60-70%.

Improvements in infra sector that can result in lower LGD

Infrastructure has been one of the key pillars of the ‘India’ story over the past years and is expected to remain so in the decade to come. The infra theme has been supplemented by a slew of policy measures over the past decade that have helped shore up its attractiveness as an investment destination by several notches. These structural reforms in the infrastructure space have had a positive impact on both PD as well as LGD.



A) Better risk sharing and reduced bottlenecks

Today, we see better risk sharing between the authorities and private entities, with modification of the concession agreements. In the past, many infrastructure projects went into default due to severe bottlenecks during the construction or stabilisation stage. This was due to lack of fuel supplies, cancellation of coal blocks, or lack of PPA for thermal or gas plants, or delay in awarding land for road projects. Consequently, many projects significantly overshoot the time and cost estimates leading to significantly high debt levels. The debt in these stressed infrastructure projects had to undergo a high haircut to make them viable.

Better risk sharing and reduced bottlenecks has resulted in improvement in PD and is expected to result in an improvement of LGD.

B) Improvement in sponsor credit profile

Better risk sharing and reduced bottlenecks have reduced the strain on sponsor health. For instance, for HAM road projects, the sponsor is required to invest only 15% of the project cost — almost half the investment required in annuity or toll road projects. In terms of capital commitment, the under-construction HAM road projects now closely resemble EPC construction projects for the sponsor.

In the past, lopsided risk sharing and bottlenecks, leading to cost and time overruns, resulted in leveraged balance sheet of the sponsor. Lack of a ready market for infra assets limited the ability of sponsors to monetise the long-term, chunky assets, when in distress.

Today, investor demand exists for operational infra assets. InvITs have also helped infrastructure sponsors to recycle the capital locked in long term infrastructure projects. Recycling of the equity capital ensures that sponsors are able to maintain their leverage at optimum levels, thereby enabling them to continue to participate in infrastructure buildout.

C) Strong investor demand for Infra projects from foreign investors and INVIT

The introduction of platforms, such as InvITs, and increased participation of global investors has improved the demand for infrastructure assets. Many stressed assets have found their way into InvITs, or platforms promoted by marquee global investors.

Reforms in the infrastructure space have led to large global investor funds vying for equity and debt investment opportunities in the segment. Domestic infrastructure segments² were able to attract over USD 67.5 billion³ FDI in the past five years, from marquee global investors such as Blackstone, Brookfield, KKR, Macquarie, CDPQ and Canadian Pension Plan Investment Board.

The presence of central counterparties such as the National Highways Authority of India, Solar Energy Corporation of India Ltd and NTPC Vidyut Vyapar Nigam Ltd, and Power Grid Corporation of India Ltd in the roads, renewables, and transmission sectors, respectively, and activation of termination payment in the case of force majeure events have also helped improve investor confidence.

Given the long-term potential of the Indian infrastructure space, investor interest is expected to improve. Stressed assets, therefore, may see quick turnaround through sponsor replacement.

D) IBC and push for pre-IBC resolution have improved recovery prospects

The introduction of IBC and the RBI's push towards pre-IBC resolution 30 days from the date of default have resulted in early detection and fast tracking of the resolution process for assets in default.

While multiple resolution platforms did exist before IBC, effective and timely resolution remained elusive. Consequently, assets in default continued to remain stressed without any viable resolution in sight. Many assets are still undergoing the resolution process.

Timely identification will help in preservation of economic value, leading to higher recovery for lenders.

² Communication services, transport, construction, and energy

³ RBI annual report 2023

LGD should be futuristic and fundamental in nature

To reiterate, it is critical for investors to factor the developments in the infrastructure sector that can potentially impact the LGD. A re-evaluation of perceived risk in the infrastructure hence becomes imperative.

While the re-evaluation in credit ratings for infrastructure assets based on PD has already taken place, the same needs to be factored in equal measures in the case of LGD as well. Currently majority of the market participants use an LGD which is constant or anchored to the past – which does not factor the recent developments around the infrastructure sector and insolvency regime.

However, LGD, similar to PD, is not static and varies across time. For instance, LGD during the construction stage of an infrastructure asset will be high. But once the project is operationalized, it will come down significantly. LGD keeps evolving depending on factors such as industry dynamics, regulatory changes, competitive environment, and management decisions that can potentially impact the asset's cash flows.

LGD can also vary at an instrument level for the same issuer. Two different instruments of the same issuer can have different LGD because of multiple layers of debt with distinct priority of claims. In such cases the issuer level LGD will not translate into an instrument level LGD.

Hence, an LGD which is constant and anchored to the past may not reflect the positive developments in the infrastructure sector and depict its dynamic nature.

Also, with further developments in the sector and the government thrust on enhancing and streamlining recovery processes, LGD trends are expected to improve compared to what the study suggests.

LGD, therefore, should be a forward-looking, point-in-time estimate of loss specific to the instrument incorporating all the quantitative and qualitative factors including sector specific nuances.

The EL Rating scale

To incorporate the improvements in PD and LGD for credit risk assessment of infrastructure sector, lenders and investors may consider using EL Rating – a rating scale conceptualized and crafted for infrastructure sector, at the behest of Ministry of Finance in 2016. The EL Rating scale is recognized by the regulators such as SEBI, IRDAI and PFRDA.

EL Rating is an expected loss based ordinal rating scale which combines the two pillars of credit risk – PD and LGD – providing a holistic risk representation.

By incorporating LGD, it emphasizes the presence of structural safeguards for infrastructure assets and can help accurately reflect the underlying risk. CRISIL EL rating complements the conventional PD rating scale and can act as an additional input to the lenders and investors to price the risk for infra assets more efficiently. It can also help issuers to raise capital at competitive cost.

Efficient risk-based pricing for infrastructure assets is the need of the hour. It will go a long way to mobilise the required funds for the huge, planned infrastructure build-out.

About CRISIL Ratings Limited (A subsidiary of CRISIL Limited, an S&P Global Company)

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 35,000 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). CRISIL Ratings Limited ("CRISIL Ratings") is a wholly owned subsidiary of CRISIL Limited ("CRISIL"). CRISIL

Ratings Limited is registered in India as a credit rating agency with the Securities and Exchange Board of India ("SEBI").

For more information, visit www.crisilratings.com.

About CRISIL Limited

CRISIL is a leading, agile, and innovative global analytics company driven by its mission of making markets function better.

It is India's foremost provider of ratings, data, research, analytics, and solutions with a strong track record of growth, culture of innovation, and global footprint.

It has delivered independent opinions, actionable insights, and efficient solutions to over 100,000 customers through businesses that operate from India, the US, the UK, Argentina, Poland, China, Hong Kong, and Singapore.

It is majority owned by S&P Global Inc, a leading provider of transparent and independent ratings, benchmarks, analytics and data to the capital and commodity markets worldwide.

CRISIL Privacy

CRISIL respects your privacy. We may use your personal information, such as your name, location, contact number and email id to fulfil your request, service your account and to provide you with additional information from CRISIL. For further information on CRISIL's privacy policy please visit www.crisil.com/privacy.