Expected Loss Ratings for Infrastructure Projects

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Overview

The Infrastructure sector is integral to the development of the country, to support economic progress and industrial growth. The various sub-sectors of the infrastructure segment are roads, railways, ports, airports, power, urban infrastructure, irrigation etc. Infrastructure projects are capital intensive and have a long gestation period. Usually, demand-related risks are minimal because of traditionally high demand-supply gap in infrastructure segments. As a result, supply-related risks assume paramount significance in assessing infrastructure projects. The projects are usually undertaken under distinct entities (Special Purpose Vehicles – SPVs) which have contractual life and revenue model.

Infrastructure projects in India are mainly financed by debt from commercial banks and NBFCs leading to high concentration on these funding channels with limited participation of bond markets in financing infrastructure in India. There is low participation from the bond market primarily on account of higher perceived risk during implementation stage - cost and time overruns, single asset concentration, shorter debt tenure in comparison to project's economic life etc. The high-risk perception stems from the experience of implementation delays, cost overruns and issues faced in stabilisation in case of Infrastructure projects. Further, there are also risks due to unpredictable ramp-up periods, and risks pertaining to counterparties, markets and operations. These risks make infrastructure projects highly vulnerable to volatile cashflows, resulting in lower credit ratings on the conventional rating scale which is based on the Probability of Default (PD).

However, Infrastructure projects have many unique characteristics which enables a regular stream of cashflows post completion and stabilisation phase. In this backdrop, the Expected Loss Ratings (EL Ratings) provide a framework in which the ratings not only factor in the Probability of Default (PD) as in the conventional rating scale but also includes the computation of an additional parameter i.e. LGD estimate, by looking at the recovery prospects post occurrence of default.

The composite rating based on EL is a measure of comprehensive risk and is able to rank various infrastructure project SPVs based on their relative riskiness. Moreover, in its disaggregated form, this scale will be capable of commenting on the probability of default (for

investors seeking timely repayment) and prospects of recovery of their principal and interest, post-default, and thereby provides incremental information to the investors/lenders regarding likely loss.

Unique characteristics of Infrastructure Projects and the EL Rating system

Infrastructure projects have many unique characteristics which differentiates it from a manufacturing or a trading concern. The presence of these features enables a regular stream of cashflows in the projects post completion and stabilisation phase. They often have a nearly monopolistic market position, low pricing risk and low technological obsolescence risk. Further, Public Private Partnership (PPP) infrastructure projects have additional features like availability of termination payments, contractual protection through some form of non-compete clause, strong counterparty, etc. Moreover, structural features such as ring-fencing of cashflows, well-defined cashflow waterfall mechanism, low incremental capex risk, and better governance, also act as risk mitigation tools.

Some of the characteristics of infrastructure projects that assume importance in EL ratings are:

- Presence of a long-term arrangement to assure revenues, more likely from Government or quasi government entities which give an assurance based on the laws of the land. Typically, a Power Purchase Agreement with a state utility which assures offtake at specified tariff levels, pass-through of costs etc.

- Concession agreement with a state owned or Central government owned concessioning authority or similar bodies which bestow the company/SPV with rights to earn revenue like collection of toll, annuity etc.

- Presence of escrow structures where the off-taker deposits money directly to the account and payments to lenders are made from that, without possibility of leakage. In all infrastructure projects, there is invariably an escrow arrangement as stipulated in the loan agreements as also waterfall mechanism which ensure certain priorities of cash flows.

- PPP projects have additional features such as non-compete clauses, presence of termination payments clause which further secure lenders in events that may lead to termination of contracts for any events of default.

- Availability of step-in / substitution rights available with lenders
- Presence of insurance cover

Expected Loss Ratings - Scope

Expected Loss Ratings cover all infrastructure projects - including under-construction and operational projects, and all debt instruments in the infrastructure sector. The following sectors are be included - Roads (Annuity based, Toll based, Hybrid Annuity Model), Power (Thermal, Hydro, Wind, Solar, etc.), Airports, Ports, and any other infrastructure project entities.

Expected Loss (EL) Methodology

The computation of Expected loss (EL) is a combination of Probability of Default (PD) and Loss Given Default (LGD). While the current system of credit ratings is based on the PD methodology (where default is construed whenever there is a missed payment), the EL rating system is an extension of the current methodology and includes the computation of an additional parameter i.e. LGD estimate, by looking at the recovery prospects post occurrence of default. Expected loss, therefore, indicates the expected credit loss that may arise in a project debt over the residual project life.

While the PD aspect of the scale focusses on timeliness of repayment in the conventional manner on the conventional CARE AAA to CARE D scale, the assessment of Recovery prospects takes into account overall project cash flows over its life cycle or over the concession period, the structure of debt, and various other aspects such as strength of the underlying project Agreements. Hence, the framework focuses on additional information regarding the overall project viability and recovery prospects of dues to the investor/lender over the lifecycle of the project.

a. **Determination of Probability of Default (PD) in the EL Rating System**

PD is determined by the credit rating of the debt instrument (CARE AAA to CARE D scale) and the tenor of the project debt. CARE periodically estimates long run and short run default rates for each rating category based on historical data. The rating on the conventional rating scale i.e. AAA to D is arrived at for the infrastructure projects

as per CARE's applicable rating methodologies of various infrastructure segments. The rating so arrived is mapped to the CARE's long run default rates as computed from time to time. This is considered for the determination of PD in the EL rating system.

b. **Determination of LGD and Recovery Prospects in the EL Rating System**

Assessment of Recovery Prospects is an essential input of the EL Rating System and comments on overall recovery of dues by the investor/lender over the life of the loan/instrument. In arriving at recovery prospects, due weightage is given to the unique characteristics and inherent strengths of an infrastructure project. Infrastructure projects have a revenue earning capacity which is not significantly dependent on market conditions or technology obsolescence etc., but present a degree of certainty to cash flows. LGD gives the estimates of actual loss which the lender/investor will incur if the issuer defaults and is often expressed as (1 – Recovery Rate).

The various parameters considered to compute recovery prospects include an understanding of the cash flows of the infrastructure project for its entire lifecycle and the extent of coverage it can provide to the project debt. This involves an assessment of the infrastructure projects that provide visibility of the project's revenue stream over the lifecycle of the project.

To compute recovery prospects, CARE computes the present value (PV) of future free cash flows of the project and the coverage it can provide to the outstanding debt being rated. The free cash flows are computed in various stress case scenarios that may lead to default situations.

Keeping the in-built strengths of infrastructure projects into consideration, CARE carries out a scenario analysis taking into account the various scenarios that can lead to default. Free cash flows are computed in each stress case scenario and the coverage they provide (on PV basis) to underlying debt is assessed over the loan repayment period. Scenario analysis comprising of various default scenarios is done and the likely recovery or coverage to outstanding debt is computed to assess the 'overall recovery prospects' in a project.

Loss Given Default (LGD) = 1 – Recovery Ratio

c. Determination of Expected Loss

CARE computes Expected loss as a composite assessment factoring in the Probability of Default and Recovery Prospects in the rated exposure at the time of default.

Expected Loss is calculated as:

Expected Loss = PD X LGD

where LGD is defined as = (1 - Recovery Ratio) and EAD is Exposure at Default i.e the outstanding project debt at the time default occurs

CARE has mapped various possible EL values into a seven-point rating scale. Each rating on this scale corresponds to a range of EL values, the details of which are summarised below. For example, the highest rating of CARE [INFRA] EL 1 rating (which is considered to have the lowest expected loss in the scale) indicates that EL value for the project is less than or equal to 1.25%.

EL Rating Symbols and Definition

Following is the nomenclature and definition of the EL scale which have been devised in consultation with the Department of Economic Affairs, Ministry of Finance, Govt of India:

EL Rating	EL Range	Definition
CARE [INFRA] EL 1	<1.25%	**Lowest expected loss** – Instruments rated 'EL 1' are considered to have the lowest expected loss
CARE [INFRA] EL 2	1.25<X<3.5%	**Very Low expected loss** – Instruments rated 'EL 2' are considered to have very low expected loss
CARE [INFRA] EL 3	3.5<X<7.5%	**Low expected loss** – Instruments rated 'EL 3' are considered to have low expected loss
CARE [INFRA] EL 4	7.5<X<15%	**Moderate expected loss** – Instruments rated 'EL 4' are considered to have moderate expected loss
CARE [INFRA] EL 5	15<X<25%	**High expected loss** – Instruments rated 'EL 5' are considered to have high expected loss
CARE [INFRA] EL 6	25<X<35%	**Very High expected loss**- Instruments rated 'EL 6' are considered to have very high expected loss
CARE [INFRA] EL 7		**Highest expected loss** - Instruments rated 'EL 7' are considered to have highest expected loss

Note: EL rating will reflect 'expected loss' over a defined period of time (linked to the tenure of the instrument to be rated)

Conclusion

CARE uses the Probability of Default (PD) approach while assigning credit ratings to debt instruments. With the focus being on timely debt servicing, even a single day, single rupee delay in payments of principal/interest results in classifying it as 'default' (and downgrade to 'CARE D' category). Further, once the ratings are downgraded to 'CARE D' category, there is a curing period post which ratings can be upgraded. For infrastructure projects, this approach may have the limitation of not providing enough information to differentiate the fundamentally strong projects from the weaker ones. EL Ratings provide broader information on associated risks to the prospective investors by taking into account the unique characteristics of infrastructure projects.

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