



This methodology note stands superseded. Refer to ICRA's website [www.icra.in](http://www.icra.in) to view the updated methodology note on the sector.

## ICRA Rating Methodology: Construction Companies

The Indian construction industry has evolved significantly over the past decade, with the evolution being facilitated by factors such as growing focus on investments in the infrastructure sector<sup>1</sup>, increase in private sector participation in the industry, and greater availability of institutional funds for construction projects. The industry nevertheless, remains highly dependent on government spending in infrastructure projects.

This rating methodology explains ICRA's approach in analyzing business and financial risk for construction companies. The objective of the rating methodology is to provide a reference tool that can be used to evaluate the credit profiles of companies engaged in construction businesses. It aims to help issuers, investors and other interested market participants understand ICRA's approach in analyzing the quantitative and qualitative risk characteristics that are likely to affect rating outcomes. This methodology does not include an exhaustive treatment of all factors that are reflected in ratings but would enable the reader to understand the rating considerations that are most important.

### ICRA's Risk Analysis Framework for Construction Companies

For analytical convenience, these factors may be grouped under the following heads:

- Business Background and Competitive Position
  - Market Position
  - Track Record
  - Diversity of Order Book
  - Order Book Analysis—Risk Profile and Nature of Contracts
  - Adequacy of Resources
  - Operating Efficiency and Risk Management Policies
  - Exposure to Build-Operate-Transfer (BOT) Projects
- Management Quality and Corporate Governance
- Financial Position
  - Profitability and Returns
  - Capital Structure and Debt Coverage
  - Working Capital Intensity
  - Cash Flow Analysis
  - Tenure Mismatches, and Risks Relating to Interest Rates and Refinancing
  - Debt Servicing Track Record

<sup>1</sup> The sub-sectors comprising the infrastructure sector include roads, water supply and sanitation, irrigation, power, airports and ports.

- Contingent Liabilities and Off-balance Sheet Liabilities
- Liquidity and Financial Flexibility
- Linkage with group companies, funding commitments for BOT projects & Consolidated Financials
- Adequacy of Future Cash Flow
- Accounting Quality

## Business Background and Competitive Position

### Market Position

Companies with a long-established market presence and reputation are better placed to bid for and execute projects as opposed to new entrants. A strong market position also serves as a barrier to entry in the incumbent's market and segment, and gives it higher bargaining power with subcontractors and suppliers. Following key determinants of the market position of a contractor are assessed by ICRA:

- **Scale of operations:** The scale of a construction company's operations indicates its relative market strength, operating flexibility, and its ability to undertake large/complex projects. Moreover, the size of the company becomes an important qualification criterion while bidding.
- **Client profile and diversity:** The composition of clients in the contractor's order book is one of the indicators of its market position. The presence of large corporate entities, central/state government funded projects, and experience of working with overseas clients are reflective of a strong and diversified client profile and viewed favourably by ICRA. The contractor's ability to maintain strong working relationships with large clients can also be gauged from the extent of repeat orders, lack of disputes and analysts' interaction with contractor's major clients.
- **Growth in revenue and order book:** The contractor's execution capability and its ability to scale up is reflected in the growth in order book and turnover relative to its peers and the construction industry. Therefore ICRA, in its analysis, compares the growth in the revenue and order book of the company with that of the other players operating in the same sector. While ICRA believes that a construction company's order book is a good indicator of its market position, a large increase in the order book could be the result of aggressive pricing and can have adverse impact on future profitability and enhanced execution risks because of challenges associated with rapid scaling-up. On the other hand, lower accretion of fresh orders and weak order book could be a result of company's inability to perform well in execution of its prior contracts and/or its unfavourable cost structure, or lack of bidding capacity arising from technical/financial shortcomings.

### Track Record

The track record of a construction company is an important input in the assessment of its ability to efficiently execute its current order backlog. Moreover, the contractor's track record becomes an important bidding criterion and hence its ability to procure fresh projects. While assessing the track record, ICRA's critical focus is on size & complexity of

projects executed, timeliness & quality of construction, cost effectiveness and levy of liquidated damages or penalties by the client, if any.

- **Sectors of operation and complexity of work done:** Areas of operation of the contractor, the relative complexity and size of projects handled, and the demonstrated capability of the contractor in each of the sectors are assessed. A company with a successful track record of executing large and complex projects such as hydropower and tunnelling projects is viewed positively as such a track record lowers competitive pressures and also increases the pricing power of the contractor. While the contractors involved in jobs such as small irrigation projects, road and building construction, are prone to high competitive intensity due to presence of large number of players in these segments.
- **Adherence to quality, cost and time parameters in completed projects:** The performance of the contractor in its completed projects in terms of adherence to quality parameters, cost estimates, and time schedule is assessed. If there are any delays or cost overruns in the completed projects, the reasons for the same are studied to ascertain whether those are attributable to the contractor. During the rating exercise, ICRA also selectively visits some of the completed and on-going projects and collects feedback from the contractor's major clients and the end-users of the projects.
- **Liquidated damages/penalties:** Instances of liquidated damages or penalties being levied by clients because of shortfalls in quality, or delay in projects, or breach of any other condition by the contractor reduces the comfort level with respect to the contractor's execution capability. Feedback from the bankers regarding invocation of the performance guarantees, which the contractor furnishes in favour of its client, serves as an important input in this context.

### **Diversity of Order Book**

Order book diversification provides stability to the contractor's revenues because of the lower reliance on a particular geographic region, client, segment, or project. This factor is assessed in conjunction with the company's capability to manage the diversified projects and deliver them in accordance with the agreed cost, time, and quality parameters.

- **Geographical Diversification:** Construction companies have to comply with several regulatory, environmental, and safety restrictions. Many of these restrictions vary from State to State, and hence companies that have geographical diversity in their operations are looked at positively. Geographical diversification also reduces the impact of economic cycles in individual regions on the company or reduced budgetary allocations for infrastructure development and allows it to cope better with delays in projects (and therefore cash flows) caused by natural events like floods, droughts, and earthquakes in the affected areas.
- **Sectoral Diversification:** Companies operating in diverse construction segments such as roads, bridges, power plants, oil & gas, railways, and irrigation have a lower susceptibility to regulatory risks. Further, sectoral diversification also reduces the contractor's exposure to demand volatility and competition in any particular segment.

However, such diversification also needs to be viewed in conjunction with the company's ability to execute diverse projects and its track record of project execution.

- **Client Diversification:** In the construction sector, there are a large number of players inviting tenders for projects, including Central and State Government entities, projects funded by multilateral agencies as well as projects undertaken by entities in the private sector. The profitability, payment cycle, and relative credit risk across these entities could vary significantly. Private sector orders usually have a shorter and less cumbersome bidding process, and the easier availability of project site and other requisite approvals also provides for a shorter execution period. Public sector orders, on the other hand, provide more stability to revenues as they are relatively less prone to economic cycles. Overall, a healthy mix of public and private sector projects enables a contractor to have a more stable revenue stream, manage working capital better, and also lower its counter party credit risk. While reviewing a construction company's client mix, ICRA also analyses the ratio of contracts obtained from external parties to those obtained from the contractor's own group companies; in general, higher the proportion of the latter, lower the pricing flexibility but more relaxed the contract terms.
- **Project Diversification:** Large scale projects generally offer better margins, but excessive exposure to large projects also leads to high concentration risk for a construction company. At the same time, a large number of smaller contracts can increase execution risks significantly as simultaneous execution makes greater demands on management bandwidth and project management systems. ICRA, in its analysis, calculates the contribution of the top five projects to the contractor's order book; higher values (of more than 65-70%) indicate high concentration risk for the company concerned.

#### **Order Book Analysis—Risk Profile and Nature of Contracts**

Besides diversity, ICRA also analyses the contractor's current order book, examining the risk profile, complexity, and the nature of the contracts to assess the various factors that can delay project execution and/or impact its future profitability.

- **Risk Profile of Projects:** An analysis of the major projects in the company's order book is carried out to assess the likelihood of delays in their execution. Some of the factors that can lead to delays in project execution and which are beyond the control of the contractor are unavailability of the site, lack of environmental clearance, absence of other requisite approvals, change in government policies/regulations, and delay in achieving financial closure. Difficult terrain and unpredictable climate also increase the risk of delays if the scheduled construction time does not have room for contingencies. Project complexity is another important factor that can lead to project delays. In case the contract does not adequately cover the construction company for cost overruns and idling charges, its profitability can be severely impacted by project delays. Moreover, these delays lead to deferment of cash flows for the contractor and also curtail its bid capacity by the extent of the value of the delayed projects.
- **Nature of Contracts:** Construction contracts are often priced assuming a certain level of input (raw material) prices. Thus, any steep increase in raw material prices during project execution can push up the project cost significantly beyond the initial estimates.

Moreover, delays in land acquisition or regulatory approvals may extend the construction period, thereby exposing the company concerned to possible escalations in commodity prices. A company that has entered into a fixed-price contract has to absorb this increase in prices, which in turn would drive down its profit margins. In the case of contracts having a cost escalation clause, ICRA also reviews the exact terms so as to assess the adequacy of the escalations allowed under the contract to cover for the actual increase in cost for the contractor. For instance, some contracts allow escalations in input prices in line with the inflation rate (Wholesale Price Index, or WPI) whereas the actual increase tends to be much higher than this rate, thus exposing the contractor to input price risk in spite there being an cost escalation clause in the contract. The other important contractual terms examined include penalty clauses, obligations and responsibilities of the client and the contractor, terms of payment, force majeure conditions and flexibility in the extension of the project's time schedule if the delay is not attributable to the contractor.

### **Adequacy of Resources**

While the order books of construction companies have reported robust growth in the recent past on the strength of the significant investments being made in the infrastructure sector, not all sector participants have been able to scale up their resources to the extent required. This could also result in considerable delays in project completion. Hence ICRA, in its analysis, takes into account the adequacy of the various resources of the company concerned, viz. manpower (both skilled and unskilled), management bandwidth, project management systems, machinery and equipment, and financial tie-ups, to assess its ability to successfully execute the order book. Assessment of the contractor's execution capability is important as any delays in project execution can significantly impact its profitability and cash flows. Moreover, delays can affect the company's market position, thereby impacting its ability to obtain orders, both fresh and repeat.

Attracting and retaining skilled manpower is also one of the key challenges for contractors, as is training of human resources, given the increasing complexity of projects. Apart from possessing skilled manpower, having good working relationship with labour contractors and being in compliance with the local labour laws are necessary for uninterrupted operations. These factors apart, ICRA also looks at the experience profile of the executives of the company concerned and the attrition rates at various levels.

In addition to adequate manpower, appropriate mechanisation of operations is required to optimise construction time and achieve the desired quality levels. ICRA assesses the equipment base that the construction company maintains and its appropriateness for the type of projects in its order book. Flexibility to hire equipment to meet specific project needs is also looked at. Since a contractor may be executing several projects in different geographies at any point in time, implementation of effective project monitoring systems is necessary to enable the top management continuously monitor the progress of the projects and also make the right intervention as and when required. In addition, the ability of the company to raise funds via either equity or debt is critical for it to be able to meet its working capital and capital expenditure requirements.

**Operating Efficiency and Risk Management Policies**

Construction companies are prone to cost-overflow risks and hence special emphasis is laid on their operating efficiency and risk management policies. The operating efficiency of a construction company depends on a variety of factors like its operating capabilities, its bidding policy, and the extent of subcontracting done. The contractor's operating capabilities, as reflected by the extent of control it exercises over its cost structure and by its ability to deliver projects in accordance with the contracted terms, are crucial for reducing instances of time and cost overruns. Other factors such as subcontracting also increase a company's operating flexibility, but at the same time reduce its operating profitability as well. While subcontracting is becoming inevitable, given the increasing order book size of contractors, selecting reliable partners and maintaining tight control on delivery schedules and service quality are critical to the success of a project. As for a company's bidding policy, ICRA also looks at the same to assess the trade-off between volume growth and margins.

The risk management policies adopted by a company are an important input for rating. Companies with formalised policies and procedures—mandatory bid evaluation by a bid assessment committee, third-party project appraisal, and consistent bidding policies, among others—are viewed favourably by ICRA. The project-monitoring systems implemented by a company, the policies put in place to mitigate credit risk, and other control mechanisms instituted for functions like management of supplier and/or subcontractor relationships and review of their execution strength, are also assessed.

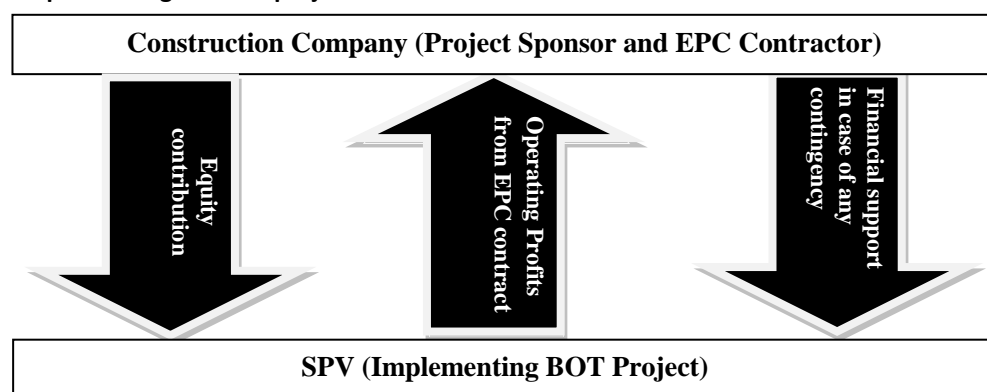
**Exposure to BOT Projects**

With Public-Private partnership (PPP) projects gaining momentum, many contractors are increasingly turning into project developers by investing in infrastructure projects in the road, power, port, and airport sectors. Unlike in the case of an engineering, procurement and construction (EPC) contract in which the contractor receives compensation from the client for project execution, for a BOT project a developer has to recover its costs and profits within a specified period from the cash flows generated by the asset that is created. Thus, in addition to project execution risk, BOT projects are also exposed to various other risks that are typical of projects, including time and cost overrun risks, market risks and regulatory risks.

BOT projects are implemented by project-specific special purpose vehicles (SPVs) and generally the developer (who is also a contractor) also enters into a fixed-price EPC contract with the SPV. On the one hand, the operating profits earned from the EPC contract partly fund the equity contribution made by the contractor in the SPV, while on the other, the fixed nature of the contract limits the contractor's ability to recover costs in case there are overruns because of price escalation.

In most cases, the debt component in BOT projects is without any recourse or with limited recourse to the parent (contractor). However, ICRA believes that in case a project faces any shortfall in meeting its debt or other obligations, it is likely that the contractor would provide the necessary financial support out of moral obligation and also to protect its interest in the project. Hence, while assessing the credit profile of a contractor, all the BOT projects in its portfolio are also analysed to ascertain the extent of risk in each project and the financial support the parent may have to extend to these projects in case of need.

Figure depicting operational and financial linkages between the Construction Company and its SPV implementing the BOT project



Further, given the large funding requirements for implementing these BOT projects, the biggest challenge faced by private infrastructure developers today is that of raising funds to meet equity commitments towards their infrastructure assets. Many of the developers are raising funds at the HoldCo level, which are then routed in the form of equity to the SPVs implementing various infrastructure assets. The funds in HoldCos are raised by several means including direct equity infusion by the promoters, private equity funds (which sometimes are in the form of structured debt with buyback clauses and guaranteed returns) and increasingly also through debt. In case of debt fund raising by HoldCos to fund equity investments in the SPVs, the concept of double leveraging gains importance which results in reduction of the developer's effective financial commitment in the projects and consequent increase in the lender's exposure to project risks.

## Management Quality and Corporate Governance

While evaluating the management quality of a construction company, ICRA considers the experience of the company's key management personnel in the construction industry and the level of delegation at various levels in the organisation. ICRA also assesses the strengths/weaknesses arising from the issuer being a part of a "group". Usually, a detailed discussion is held with the company's management to understand its business objectives, plans and strategies, their risk appetite, dependence on debt funds, and its views on past performance, besides the industry outlook.

Further, ICRA analyses the organisation structure of the company, focusing especially on management depth, delegation of responsibility, and accountability. The domestic construction industry is currently facing a shortage of skilled manpower, especially of civil engineers. Paucity of skilled manpower lowers efficiency and increases the likelihood of project-completion getting delayed. The ability of the rated company's management to employ and retain employees with technical expertise is looked upon favourably by ICRA.

ICRA also takes into account the ownership pattern of the company being rated. Wide dispersal of non-promoter holding and presence of Independent Directors on the Board of the candidate company are viewed positively by ICRA as these factors are often a proxy for management quality and corporate governance. Among the other corporate-governance related areas focused on are related party transactions, and interactions with external auditors.

## Financial Position

### Profitability and Returns

A company with higher profitability margins and returns on capital has a greater ability to generate internal accruals, attract external capital, and withstand business adversity. The trends in operating margin<sup>2</sup> and return on capital employed<sup>3</sup> relative to the company's cost of capital are also analysed to establish the stability of cash flow generation and the sufficiency of the same vis-à-vis the company's future debt service obligations. Complexity of jobs done, presence of escalation clauses, and extent of sub-contracting are some of the main factors that determine the profitability of construction companies.

### Capital Structure and Debt Coverage

With their scale of operations increasing, the working capital and capital expenditure requirements of construction companies have also increased significantly, thereby raising their funding needs, which are being met both through equity and debt. ICRA, in its analysis of a construction company's financial position, compares its debt-equity ratio with that of its peers to determine its relative leverage position. Further, to meet their equity commitments in BOT projects, construction companies are increasingly resorting to raising debt at HoldCo level, which results in double leveraging and significantly increasing overall leverage of the group. Generally, conservative leverage ratios are viewed favourably as the same reduce the committed outflows via interest and principal repayment. The other debt coverage indicators that are also examined include Interest Coverage Ratio, ratio of Net Cash Accruals to Total Debt, and Debt Service Coverage Ratio (DSCR). Further, the profile of debt in terms of maturity and average cost is also analysed.

### Working Capital Intensity

The construction business is characterised by high working capital intensity. Hence, ICRA's evaluation of the financial position of a construction company involves a detailed assessment of its working capital management practices, with the emphasis being more on its cash flow generation ability. Some of the factors that impact the contractor's working capital requirements include its inventory and receivables management policies, project monitoring systems, payment terms (with clients), and bargaining power (with suppliers and sub-contractors). Other than these, adherence to quality and time stipulations, which is linked to the contractor's execution capability, also facilitates faster release of payments from clients. Some contracts have the provision of mobilisation advances (generally 10% of the total project value) by the clients concerned, which reduces the contractor's working capital requirements. ICRA also compares the various working capital ratios of the contractor with those of its peers in similar businesses. Any significant deviation in the ratios like debtor days and inventory days gives an indication of a possible dispute with a client with regard to certification of work executed, recognition of revenue, and/or release of payments.

### Cash flow analysis

Cash is required to service obligations. Cash flows reflect the sources from which cash is generated and its deployment. Analysed here are the trends in the contractor's Funds Flow from Operations (FFO) after adjusting for working capital changes, the Retained Cash Flows,

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<sup>2</sup> Operating Profit before Depreciation, Interest and Tax/Operating Income

<sup>3</sup> Profit before Interest & Tax/(Total Debt + Tangible Net Worth)

and the Free Cash Flows after meeting debt repayment obligations and capital expenditure needs. The cash flow analysis also helps in understanding the external funding requirement that a construction company has in order to meet its maturing obligations.

### **Tenure mismatches, and risks relating to interest rates and refinancing**

Large dependence on short-term borrowings to fund-long term investments can expose a construction company to significant refinancing risks, especially during periods of tight liquidity. The existence of adequate buffers of liquid assets/bank lines to meet short-term obligations is viewed positively. Similarly, the extent to which an issuer would be impacted by movements in interest rates is also evaluated.

### **Debt servicing track record**

The debt servicing track record of a construction company is an important input for a credit rating exercise. Any delays or defaults in the past in the repayment of principal and/or interest payments reduce the comfort level with respect to the contractor's future debt servicing capability and willingness.

### **Contingent Liabilities/Off-balance sheet exposures**

Typically, a contractor has to provide a performance guarantee for the project it is executing. This is usually a bank guarantee, which forms a part of the contractor's contingent liabilities. ICRA, in its analysis, determines the possibility of such guarantees being invoked and the pressure that the event would exert on the company's cash flows. In case there are any other contingent liabilities like corporate guarantees and cases in disputes, the impact of the same on the contractor's credit profile is also assessed.

### **Liquidity and Financial Flexibility**

Liquidity in the form of free cash, liquid investments, and unutilised credit limits along with adequate drawing power is viewed favourably. ICRA also considers the candidate company's fund raising capability by assessing its access to the capital markets and its tie-ups with the banks/financial institutions to get working capital finance and term borrowings at competitive rates.

### **Consolidated Financial Analysis**

In the case of groups consisting of companies with strong financial and operational linkages, various parameters such as capital structure, debt coverage indicators, and future funding requirements are assessed at the consolidated/group level.

### **Adequacy of Future Cash Flows**

Since the prime objective of a rating exercise is to assess the adequacy of the issuer's debt servicing capability, ICRA draws up projections on the likely financial position of the issuer under various scenarios. In rating a construction company, ICRA assesses its growth plans, its capital expenditure plans, and the methods proposed to be used to fund these plans. Besides, ICRA takes into account the commitments of the company towards other group companies and new ventures, and its investments in subsidiaries/SPVs. Subsequently, future cash flows are projected after taking into account the company's current order book position and the likely conversion of the same into earnings; the growth it envisages for itself; the debt repayment schedule; its funding requirements; and the funding options available to it. These cash flows are then used to determine the company's future debt

servicing capability under various scenarios. Apart from cash flow projections, the other ratios used to assess cash flows are Fund Flow from Operations (FFO) interest coverage, FFO debt coverage, and FFO capital expenditure coverage.

### **Accounting Quality**

The financial analysis begins with a review of the contractor's accounting quality. Accounting practices such as income recognition method (percentage of completion versus completed), depreciation methods and asset lives, and treatment of contingent liabilities, are reviewed and compared with the industry practices. The company's policies on recognition of disputed revenues and disclosure of contingent liabilities are also examined while assessing its accounting quality. When projects get delayed, claims for idling of resources and cost overruns are submitted by the contractor and in some cases counter-claims are lodged by clients. In the absence of an efficient arbitration mechanism such disputes usually take long to get resolved. A company that recognises such claims as revenues only after they have been settled in its favour by the relevant authority is viewed favourably by ICRA. Also, if there are counter-claims, adequate provisioning and inclusion in contingent liabilities are considered more prudent.

### **Summing up**

ICRA's credit ratings are a symbolic representation of its opinion on the relative credit risk associated with the instrument being rated. This opinion is arrived at following a detailed evaluation of the issuer's business and financial risks, its competitive strengths, its likely cash flows over the life of the instrument being rated, and the adequacy of such cash flows vis-à-vis its debt servicing obligations. As this note highlights, for construction companies, the analytical emphasis is extended to include factors like the company's ability to execute projects, its cash flows after adjusting for working capital, its exposure to BOT projects, and the likelihood of its contingent liabilities devolving.

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