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Grading of Construction Agencies

P. R. SWAROOP*

Exponential growth in the volume of construction has outpaced the growth of reliable, efficient construction agencies by such a huge margin that it often becomes impossible to weed out unsuitable players from the field with the crude, antiquated instruments currently available with the client organisation and bankers and financing institutions who have to support construction activities. The industry is, therefore, plagued by a lack of a regulatory framework and effective entry barriers.

PREAMBLE :

The construction sector is one of the major engines of economic growth. The second biggest employer with a total annual turnover of Rs. 2 Trillion. It supports several core sector industries and provides sustenance to a large number of manufacturing units. With the increased thrust on the infrastructure sector, construction has become a central node in the network of activities that make up the living economy of a nation.

Exponential growth in the volume of construction has outpaced the growth of reliable, efficient construction agencies by such a huge margin that it often becomes impossible to weed out unsuitable players from the field, with the crude, antiquated instruments currently available with the client organisation and bankers and financing institutions who have to support construction activities. The industry is, therefore, plagued by a lack of a regulatory framework and effective entry barriers.

Considering the responsibility, post-facto scrutiny and accountability faced by senior executives in government and public institutions, the absence of an objective and comprehensive system

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encourages them to be conservative on one hand, while on the other hand, they find it difficult to justify on record any weeding out that they would have otherwise resorted to. With the objective of rectifying this situation, ICRA and CIDC have now got together to develop a system of grading different agencies involved in a construction project.

THE AGENCIES TO BE GRADED

Different agencies involved in a project are :

- The Project Owner/Client, his project construction organisation
- The Contractor or the Construction company
- The Consultant
- The Project entity

Success of a project would depend largely on the performance of these agencies.

BENEFICIARIES OF A COMPREHENSIVE GRADING SYSTEM :

1. THE PROJECT OWNER

He will use the grading of the contractor/ consultant as an input in the project tendering process. He gets a more detailed picture on the likelihood of project completion on schedule and without cost overruns and with minimum disputes. He can also draw comfort from the fact that his investments would yield returns as planned.

2. THE CONTRACTOR

The system will facilitate his ready acceptance based on his grading. He need not resort to undercutting or unrealistic bidding to meet competition from unqualified and fly- by- night operators. The proposed system being more objective and transparent, a contractor is also aware of the ground realities through the grading of other players and can use this as an input while making the decision to bid for a particular job. This will later help in unimpeded work, and exercising better control over eventual losses or disputes with the project owner.

3. THE CONSULTANT

With the rating of the project owner, the contractor and the project having been rated on this system, the consultant can have a higher degree of confidence in timely progress and completion of work, and adherence to quality and safety standards.

4. THE PROJECT

As an entity it is the biggest beneficiary. Work spots and shortcomings can be anticipated and, wherever possible, corrective measures adopted. The Project also benefits from lower costs of indemnities and an easier access to sources of funds.

5. OTHER BENEFICIARIES

Financial Institutions & Bankers : A scientifically graded project would lend itself to a more accurate and reliable estimation of risks involved in the lending. It would enable the lenders to properly map the project on their risk return spectrum. The proposed grading system would enable them to decide the extent and depth of support they can offer to the project owner, consultant, contractor and the project

The Society at large : Construction is highly capital intensive. Flawed decision or a single faulty decision may result in substantially increased costs of infrastructure and much larger indirect costs which a fund-scarce economy can hardly afford to bear. The nation will benefit vastly from a more regulated and ethical construction industry.

Today, some kind of grading, screening, pre-qualification or registration and enlistment system does exist and is a necessary and integral part of the decision making process of almost every project authority such as HLTDCO, NHB, commercial banks, development financial institutions and project owner (client) organisations or their professional departments like MES, PWDs and specially created project organisations. Yet, there is absence of a comprehensive, objective, independent grading system. Consequently, while the owner rates the consultant or the contractor, the lender rates the borrower (owner or contractor) and the project. An all encompassing perspective of the entire project involving all players in the field is not available. The proposed grading procedure intends to fill this gap.

INDICATIVE INPUTS FOR THE GRADING

The Contractor

The rating of a contractor involves estimating his cash generation capacity through operations (primary cash flows) vis-a-vis his liabilities. We also need to assess the business risk, financial risk and group risk of the contractor.

Business risk

- **Construction industry specific risk**

  A complete overview of the state of the economy and its short and medium term prospects. Order booking and revenue generation capability. Order book as a percentage of turnover in recent past must be analyzed.

- **Market position**

  A well-established market presence and solid reputation are necessary to secure larger contracts. The market position of the contractor gives an indication of the contractor's ability to bag orders in the near future.

- **Sector of operation**

  Some EPC companies operate in niche areas such as hydrocarbon processing etc. These companies are exposed to higher risk. Demand for additional production facilities in a

particular industry sector could drop in the face of over capacity, regardless of the underlying health of the economy. Companies operating in the commodity-like privately financed residential and commercial buildings, which make up the bulk of construction activity, are vulnerable to the significant cyclicality of boom/bust in real estate development markets. Publicly funded work, such as schools, prisons, hospitals, water and sewage projects etc. demonstrate less variability over business cycles

- **Ability to be an integrator**

  Big EPC contractors have to be world class integrators. They have to integrate the equipment supplied by various manufacturers and come up with a fully operational plant. So a track record of integrating the supplies of various equipment manufacturers into an operational plant within a set time frame is essential for large contractors.

- **Project quality track record**

  The quality of the completed projects have a vital bearing on the contractor's business risk. A company which has a lackluster project quality record (as indicated by the track record of paying liquidated damages for completed plant not being upto specifications) could see its order book position dwindling. Demonstrated technical expertise is a positive factor as it enables a firm to compete for complex projects.

- **Client category and diversity**

  Competitively bid projects usually have lower profit margins than those for private customers. However, in stable political environments, government sponsored public sector work generally provides a more reliable revenue stream, offsetting lower profitability. Successful construction firms have sufficient client diversity so that difficulties with one or more customers will not have a material impact on the operations. Geographic diversity of clients also helps, so that local slowdowns, law and order problems etc. do not have material impact on the company's performance.

- **Human resources and management quality**

  Project managers play a more important role in project completion than production managers play in manufacturing companies. Project managers have to co-ordinate with various project entities. The presence of good project managers with track record of timely project completion are a definite asset. Companies not having experienced project managers are at a disadvantage.

- **Design systems**

  Project execution times are on their way down due to intense competition from multinational firms. This implies that not only the big construction firms but also the small sub-contractors must reduce their project execution time.

- **Contract evaluation**

  A thorough appraisal of all the contracts entered into by the contractor must be made for judging the credit quality of the contractor. This would give the grading analyst an overview of the terms and conditions of the contracts entered in by the contractor.

- **Ability to provide project financing**

  For big contractors, ability to arrange cheap debt and equity financing is increasingly important. Project finance institutions might require it. Municipalities and government entities are looking for it. So, the ability to participate in project finance gives those contractors an edge.

- **Project composition**

  Average project size has an impact on credit quality if projects are few and too large, the company could face excessive risk concentration, but if small and too many, management resources could be diluted, thus reducing control. So a balance has to be drawn between the two.

- **Labor relation track record**

  The construction industry abounds in labor disputes. These disputes can have a serious impact on project implementation. It is necessary to assess the labor relations track record of the contractor

- **Dispute with client track record**

  A company involved frequently in disputes and lawsuits with its clients might see it's order book position dry up. It could cause resources to be tied up and severely impact contractor credit standing.

Financial risk

- Leverage

  Construction companies which are highly leveraged inevitably face bigger problems during economic downturns than their manufacturing counterparts.

- Financial flexibility

  Depending on the liquidity situation in the economy, payments to the contractors can be erratic. Though contracts provide for legal remedy in case of delay in payments, pursuing the legal route is usually not a viable option. Access to funds to tide over short term liquidity problems is essential.

- Accounting Quality

  The quality of the accounting of the contractor is important for assessing credit quality. Construction firms follow accounting standard AS 7 for recognizing revenue and expenses.

- Creditworthness of clients

  A grading analyst must appraise the contractor's systems for evaluating the credit strength of his clients and their ability to pay for the services rendered in the contracts.

- **Customer advances for working capital financing**

  The ratio of customer advances to the total value of projects being executed should be calculated. The higher this ratio, the better it is. It indicates two things-1) The contractor commands a premium in the market in that he can ask for high advances and still book orders 2) It improves the cash flow of the contractor and he requires less working capital support from external sources which require interest payments.

- **Receivables Management**

  An analysis of the days receivables by age profile and client needs to be done to assess the contractor's credit quality.

- **Liquidated Damage exposure:**

  Analysis of scenarios if the projects being executed by the contractor are delayed by one month/ three month needs to be studied. If liquidated damage exposure is significant, it can have a debilitating effect on the contractor's credit standing. The extent to which the contractor's has offloaded some of the exposure by sub-contracting, also has to be analyzed.

- **Tax dispute contingent liabilities**

  Construction firms usually have Works Contract tax and Sales tax disputes with government bodies. The extent of these liabilities and their impact on the credit quality of the contractor must be assessed.

- **Bank guarantee rates**

  Financial strength is necessary for posting bid and performance bank guarantees. Bid guarantee is essential for bidding for new projects. Performance guarantees can help reduce the receivable level. Strong companies need to pay only 1% of the guaranteed amount as guarantee fees. Weak companies might have to pay almost 3%

- **Cost structure**

  Successful EPC companies have flexible cost structures that support abilities to weather softer market conditions. Most big construction companies do a lot of subcontracting. This reduces fixed costs and keeps costs under control when there is a business slowdown. The ratio of fixed costs to total costs gives an indication of the contractor's credit standing during adverse conditions.

- **Contract composition**

  Most large projects are competitively bid, either on a "cost plus" basis or on a "fixed price/lump sum" basis. While the former method minimizes risk to the contractor, it also limits profit potential. Superior cost-estimating abilities hold the prospect for above average profitability for firms bidding for latter category of contracts.

- **Insurance cover**

  Contractors are exposed to a lot of third party liabilities. The extent to which these risks

are insured has an important bearing on the contractor's ability to tide over construction site accidents and other unexpected occurrences.

- **DSCR (considering and without considering contingent liabilities)**

  Ultimately the Debt Service Coverage Ratios (with and without considering contingent liabilities) of the firm has to be calculated.

GROUP RISK

The financial exposures and linkages with group companies is analyzed under this head.

THE PROJECT

Issues in grading a green field project involve an assessment of the project risks on a stand alone basis and ways of mitigation of these risks.

Project Risks

The risks in a standalone project are big. The risks include:

- **Completion risk** This is the risk that the project may not be completed on time or at all due to various reasons such as cost overruns, technology failure, force majeure etc.
- **Price risk** This is the risk that the price of the project's output might be volatile due to supply-demand factors. If new capacities are coming up or if there is likelihood of fall in demand of the project output, the price risk is high.
- **Resource risk** This risk includes the non-availability of raw materials for the project operation. It also includes the risk that the raw material prices might move adversely
- **Technology risk** This is the risk that the technology used in the project is not sufficiently proven.
- **Operating risk** This is a risk that the project operational and maintenance costs would escalate. It also includes the risk that the project will have operational problems .
- **Political risk** This risk relates to matters such as increased taxes and royalties, revocations or changes to the concession, exchange controls on proceeds, forced government participation in shares and refusal of import licenses for essential equipment.
- **Casualty risk** This is the risk of physical damage to the project equipment. It also includes liabilities to third parties on account of accidents at the project site.
- **Environmental risk** This risk refers to increased project costs for complying with new environmental standards. There could also be environmental protests from the local populace against the project.

- **Permitting risk** This is the risk that official clearances for the project may not be forthcoming or subject to expensive conditions.
- **Exchange rate risk** This is the risk that the currency of sale of the project produce would depreciate with reference to the currency of the project loans. Even though the debt being rated might be Rupee denominated, the presence of foreign currency liabilities can decrease the debt service coverage ratio of the bonds in case there is adverse exchange rate movement.
- **Interest rate risk** This is the risk that the floating interest rate of the project loans would increase beyond the levels assumed for preparing projected cash flows.
- **Insolvency risk** This is the risk of insolvency of contractors, project sponsors, suppliers, purchasers of project output, insurers or a syndicate bank.
- **Project development risk** This is the risk that the project development might not take place in an orderly manner.
- **Site risk** This is the risk that the project site might have legal encumbrances. It also includes the risk that the site has technical problems
- **Financial closure risk** This is the risk that the project might not reach financial closure

Risk Mitigation

How project risks have been mitigated determines the chances of project success and hence the project quality

- **Completion risk** This risk should be borne by a credit worthy engineering, procurement and construction contractor. The extent of liquidated damages payable by the contractor improves the comfort level of the other role players in the project. A contractor with experience in similar projects reduces project completion risk.
- **Price risk** The price risk is determined by supply-demand characteristics of the project output. If there are tariff barriers to import of the good or if new capacities are not being added to keep pace with demand, the price risk of the project is reduced
- **Resource risk** The presence of long term supply contracts with reliable suppliers of project raw materials reduces resource risk. The supply demand characteristics of the raw material also have a bearing on the resource risk.
- **Technology risk** If the technology of the plant is proven, this risk is mitigated. It can also be mitigated if the proj ect contractor agrees to pay big liquidated damages in case the project does not perform to specification.
- **Operational risk** This risk is reduced if it is allocated to the project Operation and Maintenance contractor with considerable experience in operating plants of a similar nature. It can also be mitigated if the project has experienced operational personnel.
- **Political risk** This risk is reduced by concession agreements with the relevant government

- **Casualty risk** Good insurance agreements transfer this risk to project insurers. Any gaps in the insurance pacts will have an adverse impact on the project rating.
- **Environmental risk** If the project site does not have environmental problems or disputes with local residents, this risk is reduced.
- **Permitting risk** A project which has secured all statutory clearances has lower permitting risk.
- **Exchange rate risk** A project whose loans are in domestic currency, or which has hedged its forex risks is likely to secure a higher rating.
- **Interest rate risk** This risk is alleviated by entering into a swap agreement with a bank to swap the floating rate obligations for fixed rate ones.
- **Insolvency risk** If all parties (the project owner, contractor, consultant, lenders to the project are credit worthy enough to meet their contractual obligations, then this risk is reduced.
- **Project development risk** If the project owner has experience in developing similar projects, this risk is mitigated.
- **Site risk** This risk is mitigated if the project site is free from legal problems. If a proper technical appraisal was done, the risk of improper choice of site is mitigated

THE PROJECT OWNER

Rating Framework

The basic objective of rating is to provide an opinion on the relative grading risk associated with the agency being rated. This in a nutshell includes, estimating the cash generation capacity of the issuer through operations (primary cash flows) viz-a-viz. its requirements for servicing obligations over the tenure of the instrument. Additionally, an assessment is also made of the available marketable securities (secondary cash flows) which can be liquidated if required, to supplement the primary cash flows.

All the factors which have a bearing on future cash generation and claims that require servicing are considered to assign ratings. These factors can be conceptually classified into business risk and financial risk drivers.

Business risk drivers

- Industry characteristics
- Market position
- Operational efficiency
- New projects
- Management quality

Financial risk drivers

- Funding policies
- Financial flexibility

Industry characteristics: This is the most important factor in credit risk assessment. It is a key determinant of the level and volatility in earnings of any business. Other factors remaining the same, industry risk determines the cap for ratings. Some of the factors that are analysed include:

Demand factors

- Drivers & potential
- Nature of product
- Nature of demand - seasonal, cyclical
- Bargaining position of customers

State of competition

- Existing & expected capacities
- Intensity of competition
- Entry barriers for new entrants
- Exit barriers
- Threat of substitutes

Environmental factors

- Role of the industry in the economy
- Extent of government regulation
- Government policies - current and future direction

Bargaining position of suppliers

- Availability of raw material
- Dependence on a particular supplier
- Threat of forward integration
- Switching costs

For credit risk evaluation, stable businesses (low industry risk) with lower level of cash generation are viewed more favourably compared to businesses with higher cash generation potential but relatively higher degree of volatility (higher industry risk).

It needs to be mentioned that with the opening up of the Indian economy, it is also critical to establish international competitiveness both at the industry and the unit level

Market position : All the factors influencing the relative competitive position of the issuer

are examined in detail. Some of these factors include positioning of the products, perceived quality of products or brand equity, proximity to the markets, distribution network and relationship with the customers. In markets where competitiveness is largely determined by costs, the market position is determined by the unit's operational efficiency. The result of these factors is reflected in the ability of the issuer to maintain/improve its market share and command differential in pricing. It may be mentioned that the issuers whose market share is declining, generally do not get favourable long term ratings.

Operational efficiency : In a competitive market, it is critical for any business unit to control its costs at all levels. This assumes greater importance in commodity or "me too" businesses, where low cost producers almost always have an edge. Cost of production to a large extent is influenced by :

- Location of the production unit(s)
- Access to raw materials
- Scale of operations
- Quality of technology
- Level of integration
- Experience
- and last but not the least the ability of the unit to efficiently use its resources.

A comparison with the peers is done to determine the relative efficiency of the unit. Some of the indicators for measuring production efficiency are : resource productivity (both assets and manpower), material usage (or input-output ratios) and energy consumption. Collection efficiency and inventory levels are important indicators of both the market position and operational efficiency.

New project risks : The scale and nature of new projects can significantly influence the risk profile of any issuer. Unrelated diversification into new products are invariably assessed in greater detail.

The main risks from new projects are: Time and cost overruns, even non-completion in an extreme case, during construction phase; financing tie-up; operational risks; and market risk.

Besides clearly establishing the rationale of new projects, the protective factors that are assessed include: track record of the management in project implementation, experience and quality of the project implementation team, experience and track record of technology supplier, implementation schedule, status of the project, project cost comparisons, financing arrangements, tie up of raw material sources, composition of operations team and market outlook and plans.

Based on the assessment of various project risks, assumptions about completion and contribution to/from these projects are incorporated in the issuer's overall projections.

It needs to be emphasised that the impact of project risk on the rating depends on the scale of projects in relation to the size of assets and cash flows of the existing operations.

Management quality : The importance of this factor can not be overemphasised. When the business conditions are adverse, it is the strength of management that provides resilience. A detailed discussion is held with the management to understand its objectives, plans & strategies, competitive position and views about the past performance and future outlook of the business.

These discussions provide insights into the quality of the management . It also helps in establishing management's priorities. A review of the organisation structure and information system is done to assess whether it aligns with the management's plans and priorities. The interactions with key operating personnel help in determining the quality of the management. Issues like dependence on a particular individual and succession planning are also addressed.

Other important factors are : labour relations, track record of meeting promises specifically relating to returns and project implementation, performance of "group" companies, transactions with the "group" companies etc.

Funding policies : This determines the level of financial risk. Management's views on its funding policies are discussed in detail. These discussions are generally focussed on the following issues :

- Future funding requirements
- Level of leveraging
- Views on retaining shareholding,control
- Target returns for shareholders
- Views on interest rates
- Currency exposures including policies to control the currency risk
- Asset-liability tenure matching

Financial flexibility : While the primary source for servicing obligations is the cash generated from operations, an assessment is also made of the ability of the issuer to draw on other sources, both internal (secondary cash flows) and external, during periods of stress.

These sources include: availability of liquid investments, unutilized lines of credit, financial strength of group companies, market reputation, relationship with financial institutions and banks, investor's perceptions and experience of tapping funds from different sources.

Generally financial flexibility factor facilities determination of the relative strength within a rating category (i.e., + or - prefix with the rating) and has a greater bearing on the short term ratings.

Past financial performance : The impact of the various risk drivers is reflected in the annual performance of the issuer. Thus, while the focus of rating exercise is to determine the future cash flow adequacy for servicing debt obligations, a detailed review of the past financial statements is critical for better understanding of the influence of all the business and financial risk factors. Evaluation of the existing financial position is also important for determining the sources of secondary cash flows and claims that may have to be serviced in future.

Accounting quality : Consistent and fair accounting policies are a pre-requisite for financial evaluation and peer group comparisons. It may be mentioned that accounting quality is also an important indicator of the management quality. Rating analysts review the accounting policies, notes to the accounts and auditors comments in detail. Where necessary, rating analysts adjust the financial statements to reflect the correct position. Over a period of time the focus of financial analysis at the credit rating agency has shifted towards evaluation of cash flow statements as cash flows to a large extent offset the impact of "financial engineering"

Indicators of financial performance : Financial indicators over the last few years (typically five years) are analysed and performance of the issuer is compared with its peers. Comparison with peers is important for better understanding of the industry trends and determining the relative position of the issuer. Some of the important indicators that are analysed are presented below:

Profitability : A traditional indicator of success or failure of any business endeavour has been its ability to add value to its wealth or generate profits. A few important indicators are, trends in:

- Return on capital employed
- Return on net worth
- Gross operating margins

Higher profitability implies greater cushion to debt holders. Profitability also determines the market perception which has a bearing on the support of share holders and other lenders. This support can be an important factor during stress.

Gearing or level of leveraging : This is an important determinant of the financial risk. Some important indicators are:

- Total debt as a % of net worth
- Long term debt as a % of net worth
- Total outside liabilities as a % of total assets

It needs to be emphasized that business risk is a prime driver, while gearing has a secondary role in determining the overall rating (especially long term). To illustrate, an issuer whose gearing level is favourable but relative business fundamentals are weak is unlikely to get a favourable long term rating. This is so because gearing is considered to be a "controllable" factor while business factors are relatively difficult to alter significantly.

Coverage ratios : Considered to be of primary importance to the debt holders. The important ratios are:

- Interest coverage ratio (OPBDIT/Interest)
- Debt service coverage ratio
- Net cash accruals as a % of total debt

The level of these ratios reflect the result of business risk drivers and the funding policies. Generally speaking, higher the level of coverage, higher is the rating. However, as mentioned

earlier, business with lower level of coverage can get higher ratings if the earnings are steady (i.e., business with low industry risk).

Liquidity position : The indicators of liquidity position are, the levels of :

- Inventory
- Receivables
- Payables

The state of competition, issuer's market position & policies, relationship with customers and suppliers are the important factors that impact the above levels. Comparison with peers on these indicators help to determine the relative position of the issuer in the industry. The funding profile with respect to matching of asset-liability tenures also has an important bearing on the liquidity position.

Cash flow analysis : Cash is required to service obligations. Thus, any financial evaluation would be incomplete if cash flow analysis is not carried out. Cash flows reflect the sources from which cash is generated and its deployment. As has been mentioned earlier, cash flows also to a very large extent offset the impact of diverse accounting policies and hence facilitate peer comparisons.

The coverage ratios enumerated above can be modified to factor the impact of actual cash flows only. Issuers which are not able to generate sufficient cash to service obligations do not normally get favourable ratings.

Future cash flow adequacy : The ultimate objective of the rating is to determine the adequacy of cash generation to service obligations. Number of assumptions based on the future outlook of the business are made to draw projections of financial statements. Invariably, the financial projections are carried out for a number of scenarios incorporating a range of possibilities in the set of assumptions for the key cash flow drivers. A few important drivers are expectations of growth, selling prices, input costs, working capital requirements, value of currencies etc.

RATING OF CONSULTANT

Introduction

Technical consultants play an important role in the construction industry. Very few companies have the ability to quote for a project on a EPC basis and rely on external consultants for detailed plant design and other technical issues. Consultants working with project owners have the responsibility for preparing project feasibility studies, bid documents and selecting the construction consortium.

The methodology of consultant company rating involves assessing the business risk, financial risk and group risk of the consultant.

Business risk

- **Market reputation**

  A well established market presence and solid reputation are necessary to secure

consultancy contracts. The market position of the consultant gives an indication of the contractor's ability to bag orders in the near future. Experience in designing similar projects is necessary for pre-qualifying for new projcts in that area.

- **Sector of operation**

  Usually technical consultants operate in niche areas such as power sector, etc. These companies are exposed to higher risk. Demand for additional production facilities in a particular industry sector could drop in the face of overcapacity, regardless of the underlying health of the economy. Companies operating in the commodity-like privately financed residential and commercial building, which makes up the bulk of construction activity, are vulnerable to the significant cyclicality of boom/bust real estate development markets.

- **Project quality track record**

  The quality of the completed projects have a vital bearing on the consultant's business risk. A company which has a lacklustre project quality record (as indicated by the track record of paying liquidated damages for completed plant not being upto specifications) could see its order book position dwindling. Demonstrated technical expertise is a positive factor as it enables a firm to compete for complex projects.

- **Human resources and management quality**

  Good engineers are the backbone of consultancy firms. The ability to recruit and retain good engineers is vital to a consultancy firms future. Partnership firms have a better ability to retain good engineers. The management and incentive structure of the firm has to be understood.

- **Degree of computerization of design systems**

  Project execution times are on their way down due to intense competition from multinational firms. This implies that consultants are in a position to rapidly make changes in designs due to revision in project scope. Computerized design systems help in this regard as design changes can be quickly incorporated without affecting project execution time.

- **Project composition**

  Average project size has an impact on credit quality if projects are few and too large, the company could face excessive risk concentration, but if small and too many, management resources could be diluted, thus reducing control. So a balance has to be drawn between the two.

inancial risk

- **Leverage**

  As with other players in the construction industry, aggressive leveraging is not a good sign. However, technical consultants tend to be all equity firms and hence this is not usually an issue.

- **Financial flexibility**

  Depending on the liquidity situation in the economy, payments to the consultants can be erratic. Access to funds to tide over short term liquidity problems is essential.

- **Accounting quality**

  Details of the accounting quality of the consultant firm should be analyzed

- **Liquidated Damage exposure**

  Analysis of scenarios if the projects being engineered by the consultant are delayed by one month/ three month needs to be studied. If liquidated damage exposure is significant, it can have a debilitating effect on the consultant's credit standing.

- **Cost structure**

  Successful consultant companies have flexible cost structures that support abilities to weather softer market conditions. The ratio of fixed costs to total costs gives an indication of the consultant's credit standing during adverse conditions.

- **Insurance Cover**

  Contractors are exposed to a lot of third party liabilities. The extent to which these risks are insured has an important bearing on the contractor's ability to tide over construction site accidents and other unexpected occurences.

- **DSCR (considering and without considering contingent liabilities)**

  Ultimately the Debt Service Coverage Ratios (with and without considering contingent liabilities) of the firm has to be calculated. The difference between manufacturing companies and construction companies is that for contractors, the future cash generation ability can vary widely under different economic scenarios

Group risk

As with rating any other company, the financial exposures and linkages with group companies are analyzed under this head.