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Rating Methodology for Engineering and Construction Companies

Summary

This rating methodology adopted by China Chengxin (Asia Pacific) Credit Ratings Company Limited ("CCXAP") applies to engineering and construction ("E&C") companies and other companies with similar business nature of E&C companies.

CCXAP defines E&C companies as ones with their revenues or operating cash flows generated from construction projects. E&C companies include general contractors and sub-contractors The E&C sector covers a wide range of sub-sectors, which have their own characteristics. The construction activities can be broadly divided into three categories, namely buildings (residential, commercial, and industrial/storage/service), civil engineering (highways, railways, bridges, tunnels, ports, and waterways), and industrial facilities (power plants, mines, and smelters).

This rating methodology introduces the key determinants for rating E&C companies. CCXAP assigns credit ratings to them using its rating scale.

Introduction of Rating Methodology

The key rating determinants for the assessment of an E&C company are divided into qualitative determinants and quantitative determinants. The rating methodology provides a summarized guidance for the important factors used in assigning ratings, but it does not include every aspects of rating consideration. As a result, the mapped rating of a company may not exactly the same with its final rating.

In this rating methodology, there are three rating factors comprising 15 sub-factors as follow:

Rating Factors	Sub-factors
Market Position and Competitive Strength	Barriers to entry
	Market Position
	Technical Capabilities and Qualifications
	Segment Diversification
	Geographic Diversification
Scale and Stability	Total Revenue
	Net Assets

	Order Backlog
Capital Structure and Financial Strength	EBITDA/Revenue (%)
	Return on Net Assets (%)
	Total Debt/Total Capital (%)
	Total Debt/EBITDA (%)
	EBITDA/Interest (x)
	Cash Conversion Cycle
	CFO/Short-term Debt (%)

Key Rating Determinants

Rating factors and sub-factors are discussed in details in this section, including their rationale, measurement and how they affect the ratings.

1. Market Position and Competitive Strength

In the evaluation of market position and competitive strength, CCXAP considers the sub-sectors the company is involved in as well as the company's competitive position and qualifications. This factor captures the non-financial aspects of the company.

(1) Barriers to entry

CCXAP starts the analysis from evaluating the barriers to entry. Within the markets with low barriers to entry, new entrants incur lower costs to enter the market, and the competition is relatively fiercer. Within the markets with high barriers to entry, companies have to overcome significant difficulties to secure their competitive position. The barriers to entry of E&C sub-sectors are determined by technological qualification, project complexity, construction equipment, and management experience. The companies protected by higher barriers to entry will sustain better profitability.

(2) Market Position

CCXAP considers market share and relative ranking of the E&C companies. CCXAP believes that companies with a stronger market position will retain a stable customer base. They are more likely to win during the bidding phase and to have stronger negotiating power with smaller sub-contractors during the construction phase.

(3) Technological Capabilities and Qualifications

E&C companies with stronger technological capabilities have a competitive advantage in the industry, which increase customer loyalty. The qualification accreditation from the authorities reveals comprehensive acknowledgement of the technical strength and construction capacity. The company's qualifications reflect its competitiveness in terms of scale, management and technology. CCXAP considers the licenses and awards received by the company to measure the technical qualifications of the company.

(4) Segment Diversification

In assessing segment diversification of the company, CCXAP uses the number of sub-sectors that the company is involved in and the proportion of revenues contributed from each sub-sector to the total revenue. Companies with lower reliance on a single segment will be less vulnerable to economic cycles and demand shock. CCXAP considers a company as business diversified if it provides a wide range of services.

(5) Geographic Diversification

CCXAP measures the geographic diversification of the company using the percentage of revenue across different countries or regions. Geographic diversification provides greater stability of revenue by balancing different regional markets with different economic cycles, growth prospects, and regulatory/environmental/seasonal issues. E&C companies can mitigate the risks associated with any single project, client, or market. CCXAP considers a company to be geographically diversified if it operates its business in multiple regions.

2. Scale and Stability

Large E&C companies show competitive advantage in negotiating with both contractors and customers, and often maintain strong sales performance amid adverse market conditions. In the evaluation of the scale of the company, CCXAP reviews total revenue, net assets as well as order backlog of the company.

(1) Total Revenue

CCXAP considers revenue in measuring the scale of the company. E&C companies that generate larger revenue tend to have stronger track of sales, and typically have the market share and technical capacities to operate in various regions. Sustainable revenue growth also reflects strong market demands for the services provided by the company. Conversely, companies generating smaller revenue exhibit lower market share, smaller scale and weaker capacity.

(2) Net Assets

CCXAP uses the net assets of the company as another indicator to assess the scale of E&C companies, as it directly shows the ranking of the company within the industry. Companies with sizable asset base exhibit stability of operations, while companies with limited asset size could suffer from a single project failure or loss.

(3) Order Backlog

Due to the time lag between the signing of contracts and the completion of projects, CCXAP recognizes that E&C companies often have significant revenue streams after signing new contracts. Order backlog is a good indicator of the company's potential growth, and the amount of order backlog reflects the scale and volatility of a company's expected revenue. In assessing the order backlog of the company, CCXAP considers order amount, order composition, and the credit profile of counterparties in the contract.

3. Capital Structure and Financial Strength

In the evaluation of financial strength, CCXAP reviews the financial indicators of the Company. The profitability indicators capture the company's operating efficiency and cost control. The leverage indicators reflect the company's financial flexibility and long-term viability. The liquidity indicators indicate the company's ability to meet short-term financial needs. The indicators together reveal the financial risk of the company.

(1) EBITDA/Revenue

EBITDA

CCXAP focuses on the EBITDA margin of E&C companies, which is calculated by EBITDA to total revenue. Companies with higher EBITDA margins tend to conduct better cost control and generate stronger operating cash flows. A decline in EBITDA margins indicates competitive bidding or even loss-making projects.

(2) Return on Net Assets

In assessing profitability of an E&C company, CCXAP also uses return on net assets, which is calculated by dividing net income by average net assets. This indicator confirms the company's competitive position, and reflects its future growth capacity from the asset perspective. Given the variety of sub-sectors, the size of fixed assets of companies could differ. Therefore, CCXAP used return on net assets to measure the operating efficiency of E&C companies.

(3) Total Debt/Total Capital

In assessing the financial leverage of E&C companies, CCXAP uses the total capitalization ratio, which is calculated by dividing total debt by total capital. Total debt refers to interest-bearing debt, including bonds, notes, short-term and long-term borrowings. Higher leverage exerts pressure on the company's ability to raise funds and repay debts. Construction projects usually take a long period to be completed, which are affected by external factors such as raw material prices, labor costs and government taxes. Meanwhile, E&C companies operate under the pressure of complicated financing environment. Therefore, it is particularly important for E&C companies to have reasonable capital structure, optimal funding sources, and diversified debt maturities.

(4) Total Debt/EBITDA

CCXAP also focuses on the company's debt level relative to its expected cash flows to measure the company's ability to repay debt from its operating earnings. This indicator is calculated by dividing total debt by EBITDA. Even for companies with the same financial leverage, their profitability and cash-generating capability reveal different levels of financial risk.

(5) EBITDA/Interest

This indicator is used to measure the company's ability to repay the interest of the interest-bearing debt and other fixed charges by its operating earnings. The indicator is calculated by dividing EBITDA by the sum of interest expense and capitalized interest.

(6) Cash Conversion Cycle

This indicator assesses the liquidity and operating efficiency of E&C companies, which is calculated by days of inventory adding days of receivables and subtracting by days of payables. This indicator is affected by the amount of deposits, construction expenses and settlement funds of the company.

Since E&C companies typically have sizable receivables and payables, the cash conversion cycle is crucial for the company's future development. The shorter the cash conversion cycle is, the quicker the company collects money from construction projects.

(7) CFO/Short-term Debt

This is an indicator measuring the company's ability to repay its short-term debt using cash flow from operating activities. This indicator reflects the company's vulnerability to liquidity risk and capability to maintain business operations.

Other Rating Considerations

Other than the factors and sub-factors discussed above, the availability of external support to a company when needed can help strengthen its credit capacity. CCXAP gives consideration to financial policy, corporate governance and support from shareholders when assessing a company's overall credit strength.

Financial Policy

The financial policy of the company reveals management's risk appetite, and it directly affects the capital structure and credit quality of the company. CCXAP focuses on the formulation and execution of financial policy to evaluate whether the board and senior management realize their commitments on the financial targets of the company.

Corporate Governance and Management

Corporate governance and management is an important rating consideration that represents the system of rules, practices and processes by which the company is controlled and directed. The company with strong corporate governance has fair and transparent sets of rules and controls in which all stakeholders have aligned incentives.

External Support

Support from companies' shareholders affects the company's future development and credit profile. CCXAP believes that the extent of support from shareholders is closely related to the subsidiary's importance to the holding company. We measure the willingness of support by development strategy, market position, ownership structure, and the subsidiary's importance within the group. CCXAP also views that a company with strong shareholders may receive parental support of capital injection.

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