ARCHIVE | Criteria | Corporates | Industrials:

Key Credit Factors For The Engineering And Construction Industry

November 19, 2013

(***Editor's Note:*** *This article is no longer current. We have included relevant content in "Guidance: Corporate Methodology," published on July 1, 2019.)*

1. These criteria present Standard & Poor's Ratings methodology and assumptions for its key credit factors for the engineering and construction (E&C) industry.

SCOPE OF THE CRITERIA

2. These criteria apply to all E&C companies globally. We define E&C companies as issuers that derive a majority of their revenues from engineering and design, construction, and maintenance work. (Companies that derive most of their revenues from concessions are covered under "Key Credit Factors For The Transportation Infrastructure Industry".)

SUMMARY OF THE CRITERIA

3. These criteria describe Standard & Poor's methodology for analyzing E&C companies by applying its corporate criteria. We view the E&C industry as a "moderately high" risk industry under our criteria, given its "intermediate" cyclicality risk and "moderately high" degree of competitive risk and growth. In assessing an E&C issuer's competitive position, we put particular emphasis on its market position and reputation; perceived financial stability; technology and engineering offering; scale, scope, and diversity of revenues by end-market, location, and range of services; project execution track record; and cost base flexibility. In our assessment of the financial risk profile, we consider industry or company-specific working capital characteristics (including seasonality, outflows or inflows over the course of the business cycle, contract completion related assets and liabilities, and advance payment patterns).
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METHODOLOGY

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Part I: Business Risk Analysis

A. Industry Risk

6. Within the framework of Standard & Poor's corporate criteria for assessing industry risk, we view E&C as a "moderately high" risk industry (category 4). We derive this industry risk assessment from our view of the segment's "intermediate" (3) cyclicality and our assessment that the industry warrants a "moderately high" (4) competitive risk and growth assessment.

7. We believe that E&C companies are often subject to derived demand from the industries and clients they serve. E&C new project demand often varies, depending on the demand driving these other industries, such as raw material prices (crude oil, thermal coal, metallurgical coal, and metals and minerals industries) and power demand (utilities), the outlook for these end-markets, and the clients' capital budgets. For E&C companies with public sector clients, federal, state, and local budgets and spending drive overall government project demand.

8. Among rated entities in this industry, there were 12 defaults from 2002 to 2013. This equates to about 18% of rated E&C companies over the 11-year period--a relatively high percentage that supports our "moderately high" industry risk assessment.

1. Cyclicality assessment

9. We assess cyclicality for E&C companies as an "intermediate" (3) risk. Given the variability in sales and pricing, the E&C industry has demonstrated moderate cyclicality relative to other industries in both revenue and profitability--two key measures we use to derive an industry's cyclicality assessment (see "Methodology: Industry Risk"). Based on our analysis of global Compustat data, E&C companies have experienced an average peak-to-trough (PTT) decline in revenues of about 5% during the recessions since 1952. In addition, in two of the last three recessions, revenue declines exceeded 5%, with one of the steepest declines (a 12% drop in revenues) occurring during the most recent downturn (2007-2009). Since E&C companies are subject to derived demand from other industries, such as oil and gas and metals and mining, we believe that the above-average decline in revenues E&C companies experienced during 2007-2009 could have been related to the above-average declines in their clients' industries.

10. Since 1952, E&C companies experienced an average PTT decline in EBITDA margin of 11% during recessions. However, despite the above-average revenue decline during 2007-2009 downturn, E&C companies experienced below-average decline in profitability during this period. We attribute this to the industry's backlog-driven nature and the prevalence of multiyear projects. In periods of declining revenues, many E&C companies work on projects booked during previously healthier industry conditions when contract margins were stronger. As demand declines, it takes companies some time to work through their backlog of profitable projects booked and begin work on less profitable contracts, which will only negatively impact future profitability.

11. With an average drop in revenues of 5% and an average profitability decline of 11%, E&C companies' cyclicality assessment calibrates to an "intermediate" (3) risk. We generally believe that the more an industry's profitability is cyclical, the higher the credit risk of the entities operating in that industry.

2. Competitive risk and growth assessment

12. We view the E&C industry as warranting a "moderately high" (4) competitive risk and growth assessment. To determine competitive risk and growth, we assess the following four subfactors as low, medium, or high risk:

- Effectiveness of industry barriers to entry;
- Level and trend of industry profit margins;
- Risk of secular change and substitution by products, services, and technologies; and
- Risk in growth trends.

a) Effectiveness of the E&C industry's barriers to entry--high risk

13. Barriers to entry are relatively low in the E&C industry, evidenced by its fragmented nature due to the persistently large number of small, local operators. A small E&C company typically faces low startup costs to enter a local market, and we view the industry's capital requirements as low relative to other industries'. However, access to capital and surety bonding, which is often required for larger projects and is typically more available for larger companies, can be an important differentiator during difficult market conditions. This can be even more pronounced during a recovery if third-party capital is not available or if it is too costly for smaller private E&C companies to obtain.

14. Furthermore, contractors often lack true proprietary technologies or designs that create barriers to entry in certain end-markets. And while good customer relationships can also be a differentiator for a contractor, it doesn't guarantee future work. Clients frequently replace incumbent contractors for new bids due to differences in price or technical know-how.

15. With companies continuing to establish international operations, national boundaries often do not present a barrier to entry for E&C companies. During weaker economic conditions, we note that larger jobs generally receive an increasing number of bids from outside the domestic markets. We also have observed that in some local markets (such as developing markets) foreign contractors that have formed partnerships with domestic contractors can facilitate local contract awards due to the importance of client relationships and navigating administration processes with local authorities.

b) Level and trend of E&C industry profit margins--high risk

16. We view the E&C industry's profit margins as relatively low. In certain regions, demand is subject to a high degree of seasonality, since weather conditions (such as snow or rain) can temporarily depress sales levels for outdoor-based projects. During periods of low industry demand, lack of pricing discipline among industry players have hurt profit margins as some contractors bid and take on lower margin work in order to keep their workforce employed and avoid revenue declines.

17. E&C companies may be subject to raw materials and labor cost increases at times. This may pressure margins if contractors are unable to pass these costs to customers, which likely depends on project contract terms. Furthermore, the prevalent use of subcontractors in the industry can also erode profit margins.

18. Project, pricing, and execution risks, such as cancellations and delays, change orders, litigation, labor availability and productivity, weather events, and subcontractor risks, can dramatically and

unexpectedly erode margins further. In general, we have seen project risk shifts from customers to contractors during periods of low demand. Contracts that successfully shift these risks away from the contractor to the customer (such as cost-plus contracts) tend to be less profitable on average.

c) Risk of secular change and substitution of E&C by products, services, and technologies--low risk

19. We see limited likelihood of prospective substitution. E&C services are used in specific job applications, with limited alternatives for the customer to achieve the same desired output. Nonetheless, customers often have a variety of contractors to choose from, based on price range, quality, safety, service, and available technology. The pace of technological change in the E&C industry is generally slow, and technological displacement is typically not a major risk factor.

20. Insourcing, the practice of customers bringing E&C work in-house instead of outsourcing, is a potentially relevant threat for E&C companies. However, over the last several years, we have seen a trend of increasing customer outsourcing, since customers don't often view E&C work as a core component of their businesses.

d) Risk in E&C industry growth trend--medium risk

21. Growth trends in the E&C industry are generally tied to economic conditions prevalent both in mature low-growth markets and newer faster-growing markets. As such, ongoing economic contraction or subdued growth in mature markets and slowing growth in emerging markets represent significant near-term risk to the E&C industry's growth. In addition, demand for certain type of contract work is somewhat tied to commodity prices (such as oil, natural gas, and metals) or power demand, resulting in inherently volatile demand patterns.

22. Although the E&C industry exhibits intermediate cyclicality, long-range demographic trends support ongoing demand for industrial and government construction projects over the long term, especially in emerging markets where infrastructure needs are significant. As a result, we would expect the E&C industry revenue growth to generally exceed global GDP--albeit with some time lag--due to the industry's backlog-driven nature and the prevalence of multiyear projects.

23. The E&C industry is global in nature, but business conditions may vary significantly between regions and countries, reflecting differences in economic, industrial, infrastructure, and construction conditions. The indicators that we consider most relevant in assessing market conditions for E&C companies include the following:

- Economic growth as measured by GDP;
- Private and public nonresidential and residential construction spending;
- Government spending on infrastructure;
- Commodity prices, where influenced by specific government price support programs; and
- Country-specific regulatory conditions and the extent to which the government seeks to stimulate or protect domestic construction or capital spending, such as through accelerated depreciation tax benefits and energy efficiency tax credits and rebates. We view, for example, commodity-like residential and office or commercial real estate new construction as the most sensitive to economic trends, and recurring renovation and maintenance work as the least sensitive. We also believe that the demand for infrastructure assets is influenced by public spending decisions, which can be linked to election cycles and public budgets.

B. Country Risk

24. Country risk plays a critical role in determining the ratings on the companies in a given country. Country-related risk factors can have a substantial effect on a company's creditworthiness, both directly and indirectly. Although our sovereign credit ratings suggest the general risk local entities face, they may not fully capture the risk applicable to the private sector. As a result, we look beyond the sovereign rating to evaluate the specific economic, demographic, and other country risks that may affect the entity's creditworthiness. In assessing the country risk for an E&C company, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

25. With respect to E&C companies, the aspects of country risk that are most directly relevant include the following:

- The state of the country's commercial banking system and the availability of project financing;
- The ease of the permit, license, or entitlement processes related to new construction; and
- The extent to which the government seeks to stimulate construction through means such as government infrastructure spending, tax credits and rebates, and programs that indirectly benefit the contractor by supporting liquidity in the project finance market. As part of our assessment of the government's role in a construction market, we consider the government's track record and the extent to which its actions have either stabilized or destabilized the market.

26. We generally determine exposure to country risk using revenues, since this information is consistently available. However, this may not capture country risks beyond those affecting demand potential. Therefore, if country exposure by EBITDA or assets is available and indicative of a materially different country exposure profile, we may use EBITDA or assets to capture weak-link risk. This could be the case, for instance, if an E&C company's asset base is in countries that have higher risk profiles than where it derives its revenues and if those assets are not easily movable.

C. Competitive Position (Including Profitability)

27. Under our corporate criteria, we assess a company's competitive position as (1) excellent, (2) strong, (3) satisfactory, (4) fair, (5) weak, or (6) vulnerable. For E&C companies, we review the following components:

- Competitive advantage;
- Scale, scope, and diversity;
- Operating efficiency; and
- Profitability.

28. The first three components are independently assessed as either (1) strong, (2) strong/adequate, (3) adequate, (4) adequate/weak, or (5) weak. Profitability is assessed by combining two components: the level of profitability and the volatility of profitability.

29. After separately evaluating competitive advantage; scale, scope, and diversity; and operating efficiency, we determine the preliminary competitive position assessment by ascribing a specific weight to each component. The applicable weightings will depend on the company's competitive position group profile (CPGP). We assign the "services and product focus" CPGP to most E&C

companies because service reputation (for project execution) is a key differentiating factor in the industry and capital intensity is typically low. The subfactor weighting for companies assigned the "services and product focus" CPGP is as follows: competitive advantage (45%); scale, scope, and diversity (30%); and operating efficiency (25%). Alternatively, for an E&C company that requires elevated capital investments, we may assign the "capital or asset focus" CPGP, whereby we weight the first three subfactors of competitive position as follows: competitive advantage (30%); scale, scope, and diversity (30%); and operating efficiency (40%). Our criteria generally consider a capital-intensive company as one that has ongoing capital spending to sales greater than 10% or depreciation to sales greater than 8%.

30. Some diversified E&C companies have business lines that fall outside the E&C industry. Therefore, where applicable, we assess those businesses' competitive position independently by following the key credit factors relevant for those industries.

1. Competitive advantage

31. Market position can be a significant aspect of competitive advantage. Companies with sizable market shares and better sales effectiveness may garner some pricing advantage and maintain better sales performance amid adverse market conditions. In assessing an E&C company, we consider:

- Its market share in its key markets or regions as an indicator of brand effectiveness or ability to execute,
- Its reputation and brand recognition,
- Its perceived financial stability, and
- Its technology offering.

32. A strong reputation is beneficial for an E&C company to secure contracts, particularly larger contracts, and it could enhance customer loyalty and pricing power. Companies that have a strong reputation are industry leaders, in our view. These companies are known to have the capacity to operate in various regions and are recognized for successfully executing projects around the world for their global clients on time and on budget, while complying with local and regional laws and regulations. These companies also have good safety records, with a lower-than-average safety incident rate. Conversely, clients are reluctant to award contracts to lesser known companies that may not have the experience to successfully execute a contract. We view an E&C company as having a weak reputation if the company has little or no track record of successfully executing contracts, if it has a track record of frequent project execution challenges or numerous regulatory issues, or if it has a poor safety record.

33. An E&C company's perceived financial stability is an important factor in its ability to continue securing work. With large projects, which can sometimes extend for years, clients seek assurance that they will not have to change contractor mid-project due to a contractor's financial distress. A strong balance sheet, with low leverage, for example, and at least "strong" liquidity (according to our criteria) to withstand unexpected occurrences, such as large cost overruns, often provide the necessary assurance.

34. Furthermore, bank letters of credit (LOCs) and surety bonding lines may be necessary for companies to bid and secure work. LOC and surety bond providers are also more inclined to work with E&C companies that demonstrate financial stability (see the "Liquidity" section below). We view a company as having strong perceived financial stability if it has the ability to win projects based on its perceived financial stability, and if it has ample surety bonding and LOC capacity for

bidding purposes. Conversely, we believe that companies that exhibit a willingness to take on more leverage exhibit a lack of perceived financial stability. Companies that have little or no surety bonding and LOC capacity also fall into this category.

35. In reviewing an E&C company's competitive advantage, we consider its technology and engineering offerings. E&C companies that are able to offer differentiated services will generally benefit from greater pricing power and, often, greater customer loyalty and stickiness than those offering more commoditized services. A company has a more specialized technology offering if it has proprietary technologies or designs that are in demand by customers, in our view. Conversely, we believe that companies that provide commoditized E&C services without any proprietary technologies or designs exhibit less specialized technology offerings. These companies are vulnerable to new competitors entering their markets and increased pricing pressure from customers.

36. An E&C company with a "strong" or "strong/adequate" competitive advantage assessment typically has a combination of the following characteristics:

- A strong reputation;
- An ability to win projects based on perceived financial stability, including surety bonding or LOC capacity for bidding purposes; and
- A more specialized technology offering.

37. An E&C company with a "weak" or "adequate/weak" assessment of its competitive advantage typically has a combination of the following characteristics:

- A weak reputation;
- Lack of perceived financial stability, including little surety bonding or LOC capacity for bidding purposes; and
- Less specialized technology offering.

2. Scale, scope, and diversity

38. In assessing an E&C company's scale, scope, and diversity, we consider:

- The size of its revenue base or sales volume;
- Its geographic footprint--end-markets location, diversity, and characteristics;
- Its participation in a variety of attractive end-markets;
- The diversity of its customers and contracts; and
- The range of services it provides.

39. A larger revenue base relative to its target market indicates an E&C company's strong market position, in our view. In our assessment, we may exclude any flow-through-type revenues that an E&C company derives from purchasing for clients material or equipment that have no associated profit. We also take into account revenues that some E&C companies may have attributed to joint ventures that are excluded from total sales. In general, a larger revenue base can be beneficial for securing contracts, particularly larger ones, since clients are reluctant to award contracts to smaller companies that may not have the scale or resource infrastructure to successfully execute a contract. This is particularly true for global contracts that may include work in more than one region. E&C companies with larger revenue bases typically have the market share, reach, scale,

and capacity to operate in various regions and can execute projects around the world for their global clients. Conversely, having a smaller revenue base may be a disadvantage for E&C companies bidding for some larger contract work.

40. We generally assume that participation in a variety of attractive markets will make for greater stability of financial performance during market downturns, though some downturns are so extreme that all markets are severely affected. We measure a company's diversity by the number of contracts and the size of contracts by revenue and backlog across end-markets, geographies, and clients. Diversification helps E&C companies limit inherit risks related to any single project, geography, end-market, or client. A company with diversification appropriate for a "strong" or "strong/adequate" assessment would not be significantly affected by difficulties with a single project or customer. In addition, an E&C company's ability to win contracts in diverse, noncorrelated markets should provide more stable revenue, especially if the various end-markets operate on different cycles.

41. We typically view a broader range of service offerings as favorable to a company's business risk profile. Due to increasing project complexity, we view favorably companies that are able to provide services that span the lifespan of a project. E&C companies that offer a wide range of services tend to be more successful in securing repeat contracts, capitalizing on long-term relationships with customers. In some cases, the contracts involve cooperation between the client and the constructor throughout the entire construction process in order to minimize client construction costs. In the E&C industry, engineering and design, construction, and maintenance work are the most typical types of services offered. Along this spectrum of work, we view construction as the riskiest. We consider large, complex, first-of-a-kind, and fixed-price construction projects as the riskiest offerings due to the increased potential for cost overruns.

42. An E&C company that warrants a "strong" or "strong/adequate" assessment of scale, scope, and diversity typically has a combination of the following characteristics:

- A large revenue base and target market relative to those of other participants in the industry;
- Contracts and backlogs that are well diversified by geography, end-market, client, and contract size; and
- A wide range of services provided, including engineering and design, procurement, construction, and maintenance work.

43. An E&C company that warrants a "weak" or "adequate/weak" assessment of scale, scope, and diversity typically has combination of the following characteristics:

- A revenue base and target market of limited size relative those of other participants in the industry;
- Limited diversity of contracts and contract backlogs, dominated by one or a few geographic region(s), end-market(s), client(s), and or contract(s); and
- A limited range of services or a niche service provided.

3. Operating efficiency

44. To assess operating efficiency, we analyze the following:

- The company's rate of contract wins, changes in contract backlog value, and order cancellation rates by market and versus its peers;
- The size and frequency of its contract losses; and

- Its cost structure flexibility.

45. Project execution risk inherent in the E&C industry can cause high variability in reported results. E&C companies face a number of challenges to execute a project profitably and on time. These challenges include client cancellations and delays, change orders, client litigation, labor or raw material availability and productivity, weather events, and subcontractor risk, to name a few. Effective internal risk management policies and procedures related to project selection, management of subcontractors, and pricing can significantly improve an E&C company's operational performance by steering it away from projects that are exposed to more risks.

46. Our ratings assume that even some of the companies we assess as "strong" will experience occasional cost overruns, since it is impossible to avoid all project risks all the time. However, we view companies that have experienced infrequent, smaller cost overruns as better operators than their peers that have more frequently incurred charges against projects or very large cost overruns.

47. Most companies in the E&C industry have a relatively low proportion of fixed costs. However, cost structure differences arise among companies based on varying levels of vertical integration. We view a low fixed-cost base favorably, since this allows companies to quickly scale back fixed overhead during a cyclical downturn. Companies that are deeply vertically integrated, with in-house building material sites and machinery fleets that perform a bulk of the service in-house, generally have a lower degree of cost flexibility in a cyclical downturn. Vertical integration can provide direct access to strategic raw materials at a low cost in some instances, creating an advantage in times of high capacity utilization or when raw materials are in short supply. However, it can be a burden when industry capacity utilization is low due to relatively high capital intensity.

48. An E&C company with a "strong" or "strong/adequate" operating efficiency assessment typically has a combination of the following characteristics:

- A track record of several years of successful project execution, with most projects delivered on time and on budget and are profitable for the contractor; and
- A relatively flexible cost structure, often evidenced by lower operating leverage compared to its peers and limited profit sensitivity to labor cost inflation and raw material price fluctuations.

49. An E&C company with a "weak" or "adequate/weak" assessment of its operating efficiency typically is characterized by a combination of:

- A track record of several years of poor project execution, with a number of project delays and cost overruns, resulting in losses for the contractor; and
- A less-flexible-than-average cost structure due to, for instance, factors such as a high fixed- or semi-fixed cost structure or a high profit and margin sensitivity to labor cost inflation or raw material cost fluctuations.

4. Profitability

50. The profitability assessment can confirm or modify the preliminary competitive position assessment. The profitability assessment consists of two components: the level of profitability and the volatility of profitability. We combine these two components into the final profitability assessment using a matrix (see "Corporate Methodology").

a) Level of profitability

51. We determine the level of profitability using a three-point scale: "above average," "average," and "below average."

52. We use EBITDA margin as the primary indicator of an E&C company's level of profitability (see the thresholds in table 1). We use return on capital (ROC) as a supplementary indicator to refine our assessment when the EBITDA margin is close to the thresholds for "below average" or "above average" (see table 2). For instance, if a company's EBITDA margin is at the high end of the defined range for "average" but its return on capital is comfortably in the "above average" range, we may assess its level of profitability as "above average." In accordance with the corporate criteria, for this assessment we typically determine the five-year average EBITDA margin and ROC using the last two years of historical data and our forecasts for the current year and for the following two years.

Table 1

EBITDA Margins

	below average	Average	above average
All companies	<6%	6%-11%	>11%

Table 2

Return On Capital

	below average	Average	above average
All companies	<9%	9%-18%	>18%

53. We may put more emphasis on the forecast years if the historical data are not deemed representative or to take into account deteriorating or improving profiles where the prospective ratios meaningfully differ from the average ratios. In some cases, the application of local accounting rules (for non-U.S. generally accepted accounting principles or non-International Financial Reporting Standards reporting companies) may warrant using different thresholds to account for financial reporting differences.

b) Volatility of profitability

54. The volatility of profitability is determined on a six-point scale from "1" (very low) to "6" (very high).

55. In accordance with our corporate criteria, we generally determine the volatility of profitability assessment using the standard error of regression (SER), subject to having at least seven years of historical annual data. We generally use nominal EBITDA as the metric to determine the SER for E&C companies, although we may also use EBITDA margin or ROC. In accordance with the corporate criteria, we may--subject to certain conditions being met--adjust the SER assessment by up to two categories better (less volatile) or worse (more volatile). If we do not have sufficient historical information to determine the SER, we follow the corporate criteria guidelines to determine the volatility of profitability assessment.

Part II: Financial Risk Analysis

D. Accounting And Analytical Adjustments

56. In assessing E&C companies' accounting characteristics, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology"). Our analysis of a company's financial statements begins with a review of its accounting to determine whether the statements accurately measure the company's performance and position relative to those of its peers and the larger universe of corporate entities. To allow for globally consistent and comparable financial analyses, our rating analysis may include quantitative adjustments to a company's reported results. These adjustments also enable better alignment of a company's reported figures with our view of underlying economic conditions. Moreover, they allow a more accurate portrayal of a company's ongoing business. Adjustments that pertain broadly to all corporate industries, including this industry, are discussed in "Corporate Methodology: Ratios And Adjustments."

57. The scope of consolidation we use in our analysis follows the provisions established in our "Ratios And Adjustments" criteria and the related guidance document.

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E. Cash Flow/Leverage Analysis

59. In assessing the cash flow adequacy of an E&C issuer, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology"). We assess cash flow/leverage on a six-point scale--ranging from "1" (minimal) to "6" (highly leveraged)--by aggregating the assessments of a range of credit ratios, predominantly cash-flow based, which complement each other by focusing attention on the different levels of a company's cash flow in relation to its obligations.

1. Core ratios

60. For each company, we determine two core debt payback ratios--funds from operations (FFO) to debt and debt to EBITDA--in accordance with Standard & Poor's ratios and adjustment criteria.

2. Supplemental ratios

61. In addition to our analysis of a company's core ratios, we also consider supplemental ratios in order to develop a fuller understanding of a company's credit risk profile and refine our cash flow analysis in accordance with the corporate criteria. We generally use the following supplemental ratios for E&C companies:

- Free operating cash flow (FOCF) to debt as the preferred supplemental ratio. Given that many E&C companies can face high working capital swings (frequently due to advanced payments on projects, delays in collecting accounts receivable in a downturn, or fast growth), EBITDA and FFO may overstate financial strength. FOCF, which is determined after changes in working capital and capital expenditures, may be a more accurate measure of a company's cash flow in relation to its financial risk profile. E&C companies tend to have fairly low maintenance capital expenditures as a percentage of sales, which benefits free operating cash flow generation.

- Alternatively, for companies that temporarily exhibit atypically high capital expenditures as a percentage of sales relative to those of its peers, we may consider cash flow from operations to debt as the most relevant supplemental ratio. Our criteria generally consider a capital-intensive company as one that has ongoing capital spending to sales greater than 10% or depreciation to sales greater than 8%.
- For companies that return more than half of their FOCF to shareholders through dividends, we may consider discretionary cash flow to debt as the most relevant supplemental ratio.

62. Many E&C companies demonstrate volatile discretionary cash flow. This is often due to large working capital swings as well as unexpected and often large cost overruns. Therefore, we make a volatility adjustment for some E&C companies to determine the final cash flow leverage assessment. We classify companies as volatile for these cash flow criteria if we expect their cash flow to leverage ratios to deteriorate by one or two categories during periods of stress, based on the companies' business risk profile. Typically, this is equivalent to EBITDA declining by about 30% from its current level. We would modify these companies' final cash flow leverage assessment to one category below the adjusted cash flow leverage assessment, and we would eliminate the adjustment if the cash flow to leverage ratios, as evaluated, already include a moderate to high level of stress.

Part III: Rating Modifiers

F. Diversification/Portfolio Effect

63. In assessing the diversification/portfolio effect of an E&C company, our analysis uses the same general methodology as with other corporate issuers (see "Corporate Methodology").

G. Capital Structure

64. In assessing the quality of an E&C company's capital structure, our analysis uses the same general methodology as with other corporate issuers (see "Corporate Methodology").

H. Liquidity

65. In assessing the liquidity or short-term factors of an E&C company, our analysis uses the same general methodology as with other corporate issuers (see "Corporate Methodology").
66. We note that E&C companies, especially general contractors with large fixed-price contracts, often have sizable advanced payments that will be worked off over a relatively short period of time as the project moves from the engineering phase to the procurement and construction stages. Thus, simply focusing on total cash balance does not present the full liquidity picture. We consider the potential for the working capital swings associated with advanced payments or contract-related liabilities in our liquidity assessment.
67. We also consider the importance of having LOC or surety bonding capacity. This is often required for E&C companies to bid on and execute contracts. For example, surety bonding has been a key mechanism used in the E&C industry to guarantee the viability of construction projects--particularly government-supported jobs and large infrastructure and power plant projects--and construction firms tend to use LOCs under their bank agreements. Because LOCs

generally reduce the amount available to borrow under revolving credit agreements on a dollar-for-dollar basis, the shift towards using this financing arrangement negatively affects the construction firm's overall liquidity.

I. Financial Policy

68. In assessing an E&C company's financial policy, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

J. Management And Governance

69. In assessing an E&C company's management and governance, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

70. Because of the industry's project-intensive nature, we focus on management's comprehensiveness of bidding and project risk management standards and tolerances. We view favorably management that has successfully instituted comprehensive policies that effectively identify, monitor, select, and mitigate project risks. We view unfavorably management that has no or few defined standards and tolerances and little project risk management capability. We determine these factors by assessing a company's track record of project losses by size and frequency over time (see paragraphs 45 and 46).

K. Comparable Ratings Analysis

71. In assessing an E&C company's comparable ratings analysis, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

REVISIONS AND UPDATES

This article was originally published on Nov. 19, 2013. These criteria became effective on Nov. 19, 2013.

Changes introduced after original publication:

- Following our periodic review completed on June 24, 2016, we updated criteria references and the contact list and deleted paragraphs 4 and 5, which were related to the initial publication of our criteria and no longer relevant.
- Following our periodic review completed on June 21, 2017, we made no changes.
- Following our periodic review completed on June 18, 2018, we updated the contact information and criteria references and renamed the "Revision History" section to "Revisions And Updates."
- On April 1, 2019, we republished this criteria article to make nonmaterial changes. We deleted paragraphs 57 and 58 because they were superseded by "Corporate Methodology: Ratios And Adjustments," published on April 1, 2019 (Ratios and Adjustments). The sector-specific accounting and analytical adjustments previously included in those paragraphs are now covered by the Scope of Consolidation section in the Ratios and Adjustments criteria and related guidance document. In addition, we updated criteria references.

RELATED CRITERIA AND RESEARCH

Related Criteria

- Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018
- Recovery Rating Criteria For Speculative-Grade Corporate Issuers, Dec. 7, 2016
- Methodology: Jurisdiction Ranking Assessments, Jan. 20, 2016
- Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Corporate Methodology, Nov. 19, 2013
- Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- Key Credit Factors For The Transportation Infrastructure Industry, Nov. 19, 2013
- Methodology: Industry Risk, Nov. 19, 2013
- Methodology: Management And Governance Credit Factors For Corporate Entities And Insurers, Nov. 13, 2012
- Principles Of Credit Ratings, Feb. 16, 2011

Related Research

- Guidance: Corporate Methodology: Ratios And Adjustments, April 1, 2019

These criteria represent the specific application of fundamental principles that define credit risk and ratings opinions. Their use is determined by issuer- or issue-specific attributes as well as Standard & Poor's Ratings Services' assessment of the credit and, if applicable, structural risks for a given issuer or issue rating. Methodology and assumptions may change from time to time as a result of market and economic conditions, issuer- or issue-specific factors, or new empirical evidence that would affect our credit judgment.