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Key Credit Factors For The Containers And Packaging Industry

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*(**Editor's Note:** This article is no longer current.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

1. This article presents S&P Global Ratings' methodology and assumptions for the containers and packaging industry.

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SCOPE OF THE CRITERIA

3. These criteria cover the containers and packaging (or "packaging") industry. In the context of these criteria, we define packaging companies as those that get most of their revenue from plastic, paper, metal, and glass packaging products, from rigid containers to flexible films, used for packaging food, beverages, and other consumer products (such as cosmetic and personal care products); health care and medical products; and, to a lesser extent, industrial products. These criteria do not apply to companies with extensive (with more than 50% of sales) integrated paper manufacturing operations. For such companies, we follow the key credit factors for forest products. The criteria also do not apply to companies that are exclusively or primarily packaging distributors. Packaging distributors are categorized as companies with more than 50% of sales coming from distributing packaging products. For such companies, we follow the key credit factors for business and consumer services.

SUMMARY OF THE CRITERIA

4. These criteria describe S&P Global Ratings' methodology for analyzing packaging companies, after applying our corporate criteria.

5. We view packaging as an "intermediate risk" industry under our criteria, given its "intermediate" cyclicality risk and "intermediate" degree of competitive risk and growth. In assessing the competitive position of a packaging issuer, we particularly emphasize market position and growth prospects of its market segments, stability of end markets, product differentiation, capital intensity, cyclicality of end markets, diversity of operations, operating efficiency, including the ability to pass through volatile raw material costs effectively. When we assess the financial risk profile, we consider industry- or company-specific working capital characteristics (including seasonality, cash outflows, and cash inflows over the course of the business cycle) and their effect

on cash flow coverage ratios.

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METHODOLOGY

Part I--Business Risk Analysis

Industry risk

8. Within the framework of S&P Global Ratings' corporate criteria for assessing industry risk, we view packaging as an "intermediate risk" industry (category 3). Our industry risk assessment for packaging stems from our view of the segment's intermediate ('3') cyclicality, and our assessment that the industry warrants an intermediate risk ('3') competitive risk and growth assessment.

9. Key drivers of cyclicality in the packaging industry include GDP growth, consumer spending levels, and unemployment rates. Demand in the packaging industry is generally fairly stable across economic cycles, as a result of high exposure (more than 60%) to stable consumer-oriented end-markets, such as food and beverages and healthcare. In contrast, there are some end-markets that are more volatile, such as industrial products. Cyclicality also varies by substrate material type: metal and glass packaging markets are mature and industry players are highly concentrated, which supports lower cyclicality. In contrast, plastic packaging has a fragmented and highly competitive industry structure, where end products are generally more commoditized in nature, but the industry enjoys higher growth prospects.

10. Pricing competition is overall moderate. Key factors that drive pricing cyclicality in the packaging industry include the level of consolidation and pricing discipline among industry players, and customer buyer power, which can be strong given the large size of many fast moving consumer goods customers. As the metal can and glass container packaging segments are concentrated industries with a few key players, and generally higher added value products, pricing power is superior to that of the plastic packaging industry, which is highly fragmented with many industry players. As such certain plastic product segments--such as the oriented polypropylene film and the stretch film segments--have been challenged with overcapacity, which has further intensified competition. Considerable consolidation opportunities remain in the rigid and flexible plastic packaging segments in the medium to longer term, and companies that can play a consolidator role, acquire complementary products or technologies, and expand their geographic and customer base, could benefit on pricing flexibility. Still, packaging companies tend to focus on niche segments in which they can lead, and companies with a No. 1 or No. 2 market position in their particular segments usually have stronger customer relationships and can be price leaders in passing on raw material cost increases to its customers.

Cyclicality assessment

11. We assess cyclicality for the packaging industry as "intermediate risk" ('3'). The industry has demonstrated moderate cyclicality relative to other industries in revenue and profitability, which are two key measures used to assess an industry's cyclicality (see "Methodology: Industry Risk," published Nov. 19, 2013). Based on our analysis of global Compustat data, packaging companies had an average peak-to-trough decline in revenues of about 3.5% during recessionary periods

since 1950, with a decline of about 5% in the most recent 2007-2009 recession. Over the same period, packaging companies had an average peak-to-trough decline in EBITDA margin of about 8.8% during recessions, with a decline of about 6.5% in the 2007-2009 recession.

12. With an average drop in revenues of 3.5% and an average profitability decline of 8.8%, the packaging industry cyclicality assessment calibrates to "intermediate risk" ('3'). We generally consider that the higher the level of profitability cyclicality in an industry, the higher the credit risk of entities operating in that industry. However, the overall effect of cyclicality on an industry's risk profile may be mitigated or exacerbated by an industry's competitive and growth environment. Packaging companies' revenue patterns generally follow GDP growth trends in the countries in which it operates, with profitability volatility driven largely by the issuer's ability to timely pass on movements in raw material and energy costs.

Competitive risk and growth assessment

13. We view packaging as warranting an "intermediate" ('3') competitive risk and growth assessment. To assess competitive risk and growth, we assess four sub-factors as low, medium, or high risk. These sub-factors are:

- 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.

Effectiveness of the packaging industry's barriers to entry--medium risk

14. Barriers to entry in the packaging industry are medium risk overall. Barriers to entry are limited, but are partially effective in excluding competitive entrants due to industry consolidation in the more mature metal and glass packaging industries. In contrast, the plastic packaging industry remains highly fragmented, and therefore under higher competitive pressure from potential new market entrants. Metal and glass manufacturers' moderate capital spending needs also provide barriers to entry for new entrants relative to much lower requirements for plastic manufacturers. Innovative and differentiated products, such as cosmetics packaging, provide further barriers compared with packaging companies producing commoditized products such as plastic films.

15. The proximity of packaging facilities to its customers (co-located or on-site facilities) also supports a moderate level of barriers to entry, in terms of stronger customer relationships and lower shipping costs. Although it is uneconomical to ship heavier or fragile (such as glass) containers across long distances, imports pose a growing threat for certain commodity-type films that are easier to transport. Barriers to entry for healthcare or medical products is typically significantly increased by lengthy (18 months to two years) regulatory approval processes coupled with stringent quality requirements that limit switching between packaging suppliers.

Level and trend of packaging industry profit margins--medium risk

16. Industry profit margins get support from stable end markets and through continuous cost-reduction and operating efficiency efforts, which help to offset cost inflation. However, profit levels vary depending on the issuer's ability to manage the volatility in the cost of the substrate material used and local demand conditions in different geographies. For example, certain can

manufacturers manage to offset some weakness in mature domestic markets through growth investments in emerging markets. Plastic producers of more commoditized products where competitive pressures are higher may struggle to pass through raw material costs and protect margins.

17. Exposure to changes in raw material costs materially affects industry profit margins. Packaging companies' ability to offset the effect of volatile raw material costs through timely changes to selling prices varies depending on factors such as contractual provisions in contracts, market structure, how much value is added to products, and the intensity of competition.

Risk of secular change and substitution by products, services and technologies--low risk

18. Overall, substitution risk arises from modest gains and losses from one substrate material to another (among industry players) with limited secular change, which poses low risk to overall packaging demand. This is because demand is closely tied to consumption and population, which necessitates the various packaging needs of customers for its largely nondiscretionary and highly perishable products. Although there are some customers who have in-house capabilities for commoditized products, a large and growing portion of packaging materials reflects some level of value-added benefits that require the expertise, innovation and superior operating efficiencies of packaging companies, which makes it generally uneconomical for customers to manufacture themselves. There are also technologies that aim to improve certain product categories or use different substrates. However, these conversions or technological changes positively or negatively affect companies in the industry, but rarely affect overall packaging demand.

19. The low risk of secular change also gets support from increasing packaging demand in developing regions where penetration rates and per capita consumption is significantly lower than in mature markets. As countries develop, food safety, increased barrier protection, physical protection, marketing, and convenience features become increasingly important as standards of living go up. Although in mature markets where per capita consumption growth is somewhat limited, changing consumer preference patterns continue to drive the need for innovative products that require the expertise of packaging companies. For example, in the U.S., aging populations prefer easier-to-open formats and the highly mobile younger generations continue to prefer prepared foods that can be heat-and-eat or grab-and-go. These trends, coupled with limited or lack of substitutes or technological threats from outside the industry, largely limit secular change for mature markets.

Risk in packaging industry growth trends--medium risk

20. A factor that generally supports long-term demand for packaging industry growth is the prospect of superior growth in emerging regions, which offsets more mature demand in developed countries. Growth trends in the packaging industry generally tie into economic condition in mature, low-growth markets and in newer, faster-growing ones. Demand for packaging tends to grow slightly better than GDP during periods of economic expansion, at a rate similar to GDP when growth is subdued, and to contract slightly more than GDP during recessions.

21. Packaging companies in developed countries with lower operating risk often face more stable demand but higher operating costs, and limited demand growth potential. Companies with substantial revenue and earnings from diversified international operations can benefit from growing demand in emerging markets. Furthermore, increased geographic diversity of operations helps to keep demand more stable--when weak demand in one region may be offset by increased

demand in another. Several packaging companies have made strategic investments and planned capacity expansions in higher-growth markets such as Eastern Europe, Latin America, and China, to support growth not present in more mature glass and metal packaging markets in the U.S. and Europe. Also, plastic packaging companies typically benefit from superior growth prospects versus glass and metal packaging companies, fueled by ongoing conversion to cheaper plastic packaging.

22. Increasing environmental consciousness among consumers and emphasis on sustainable packaging by retailers (in terms of waste reduction, reusability, recyclability) is also shaping growth trends for certain products. For example, producers of plastic shopping bags in certain markets have been challenged by regulatory or customer-driven initiatives toward reusable bags. In other cases, increasing dietary and health concerns have also affected industry growth trends such as carbonated soda drinks in which volumes have been soft in mature markets.

Country risk

23. Country risk plays a critical role in determining all ratings on companies in a given country. Country-related risk factors can substantially affect company creditworthiness, both directly and indirectly. Although our sovereign credit ratings suggest the general risk local entities face, the sovereign ratings may not fully capture the risk applicable to the private industry. 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 country risk for a packaging company, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

24. We generally determine exposure to country risk using revenues because 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 a company's production footprint is in countries with a higher risk profile than where its revenue comes from, and if those assets are not easily movable.

Competitive position (including profitability)

25. Under our corporate criteria, a company's competitive position is assessed as excellent ('1'), strong ('2'), satisfactory ('3'), fair ('4'), weak ('5'), or vulnerable ('6'). In assessing the competitive position for packaging issuers we review an individual company's:

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

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

27. After evaluating separately 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. The profile assigned to packaging issuers is "Capital or Asset Focus,"

whereby we weight the first three components of competitive position as follows: competitive advantage (30%); scale, scope, and diversity (30%); and operating efficiency (40%). Many packaging companies manufacture products that exhibit at least some product differentiation and require moderate capital investments to sustain their market position, but factors related to operating efficiency (such as the effective pass-through of raw material costs, focus on lean manufacturing practices, proximity to customers, or favorable operating rates) often is the most relevant determinant of competitiveness.

Competitive advantage

28. In assessing the competitive advantage of a packaging company, we consider its:

- Market position and market attractiveness;
- Substrate of packaging material;
- Product differentiation;
- Stability of product demand;
- Substitution risk from alternative materials and;
- Track record of executing strategies to support long-term profitability.

29. The packaging industry is typically segmented by the materials it uses, e.g., metal, glass, plastic (rigid and flexible), and paper. In assessing the market attractiveness of packaging segments, we evaluate the extent of industry consolidation, and demand/supply balance. The level of consolidation among packaging companies and customers and pricing discipline among industry players affect competitive dynamics in various packaging segments. The metal can and glass container segments are concentrated, and rationalized operations have led to a tighter supply/demand balance, allowing companies to raise prices. Certain product segments--such as the oriented polypropylene film and the stretch film segments--are challenged with overcapacity, intensified competition, and commodity-type products that make it difficult to fully pass through higher raw-material costs. We view participation in these segments as a negative ratings factor. Although plastics remains highly fragmented, companies playing a consolidator role to acquire complementary products and technologies and expand its geographic and customer base tend to have a stronger competitive advantage. For some plastic companies, competitive advantage comes in the form of focusing on leading positions in niche markets. Typically, these niche markets have shorter production runs (for low volume and customized products) and the overall size of the business is generally not attractive to larger players.

30. In reviewing a packaging company's product differentiation, we evaluate a company's product mix by type of packaging materials and companies with more value-added products typically enjoy higher and more stable operating profitability. We assess the degree to which a packaging company differentiates itself from its competitors through value-added products, unique product designs or innovations, or proprietary technology-based product development. This is particularly important in more value-added segments because packaging products are used as advertising at the point of sale, and consumer product companies often re-launch products through improved or distinctive packaging. Convenience features, unique product designs, functionality, and graphics are key product differentiators, and strong product innovation and technology attributes serve as entry barriers and enable packaging companies to build stronger relationships with customers. Typically, packaging products are sold directly to end customers, namely consumer product companies, whereas commodity-oriented films or flexible packaging are usually sold through distributors. Packaging for medical and certain food products needs to meet stringent

requirements, and the strict regulatory approvals required for pharmaceutical packaging typically limit switching between packaging suppliers.

31. In reviewing the stability of product demand, we consider the portion of sales coming from nondiscretionary stable end markets. We consider most packaging demand to be recession resistant, as it comes primarily from relatively stable end markets such as beverages, food, household cleaning products, personal care products, medical products, and other consumer products. Plastic packaging companies typically benefit from decent growth prospects, fueled by ongoing conversion from other materials, and some applications such as water and noncarbonated beverages and food realizing higher growth. Although most packaging companies cater to these segments, participation in less stable markets, such as industrial and protective packaging applications, is viewed less favorably when we assess competitive position.

32. Demand for beverage containers is seasonal, and depends on favorable weather conditions in the peak spring and summer months. If a company significantly relies on sales of beverage packaging, we assess its effect on operating performance, which could be hurt by unseasonably cool weather during the summer months that could result in lower beverage consumption. Metal food can sales are subject to seasonal variations in food production and consumer buying habits, and volumes could be hurt if vegetables or fruit are hit by disease, drought, or excessive rain.

33. In reviewing a packaging company's substitution risk from alternative materials, we consider competition arising not only from direct competitors, but also from substitution by alternative product materials; some customers also have in-house capabilities that pose a potential threat for suppliers, particularly for companies that make products with commodity-like characteristics. Demand for metal and glass packaging is relatively flat and somewhat vulnerable to substitution trends (particularly in certain food products). Still, glass has been the package of choice for beers, wines, popular upscale iced teas, and other beverages and foods that rely on its superior marketing image and better barrier qualities, such as protection from outside elements.

34. A packaging company's demonstrated strong track record in executing capacity expansions, product launches coupled with proven innovative products supports securing and maintaining new and existing contracts, long-standing customer relationships and will ultimately translate into pricing power. Conversely, a subpar track record of these attributes will hurt profitability, face challenges maintaining existing customers or securing new contracts and ultimately result in limited pricing power. As such, a proven track record of predictable results provides some competitive advantage.

35. A packaging company with a "strong" or "strong/adequate" competitive advantage assessment typically is characterized by a combination of:

- Strong market position and market attractiveness demonstrated by an ability to profitably protect or grow leading market shares in the key industry segments in which it competes;
- Participation in industry segment(s) with favorable medium- and long-term growth prospects and/or supply/demand balance characteristics;
- High degree of product differentiation and innovation that leads to pricing power/leadership;
- High percentage of product to stable end markets and little substitution risk from alternative materials;
- Strong degree of leverage with customers and evidence of customer stickiness, achieved for instance through long-term supply contracts, long-standing relationships, or product specification into customers' end-products;
- Strong degree of leverage with raw material suppliers; or

- Strong track record of executing capacity expansions, developing proven innovative products, maintaining new and existing customers supporting overall pricing power and profitability.

36. A packaging company with a "weak" or "adequate/weak" assessment of its competitive advantage typically is characterized by a combination of:

- Low market position and market attractiveness reflected by an inability to protect or grow market shares in the key industry segments in which it competes;
- Participation in industry segment(s) with unfavorable medium- and long-term growth prospects and/or supply/demand balance characteristics;
- Lack of differentiated products with limited command on pricing power/leadership;
- Low percentage of products to stable end-markets and high exposure to substitution from alternative materials;
- Limited degree of leverage with customers and lack of customer stickiness (high switching rates, ease of switching, commoditized products, minimal innovation) compared with industry peers.
- Limited or lack of leverage with raw material suppliers; or
- Limited or lack of a track record of executing capacity expansions, developing proven innovative products, maintaining new and existing customers supporting overall pricing power and profitability.

Scale, scope, and diversity

37. In assessing the scale, scope, and diversity of a packaging company, we consider the:

- Depth and breadth of its product offering;
- Relative size of its revenue base and that of its target markets;
- Customer and supplier concentration;
- Diversity of types of packaging material;
- Diversity of its end markets; and
- Geographic balance of its sales, profits, and manufacturing footprint.

38. Packaging companies with significant market share and scale can spread overhead costs, better serve customers globally, and more efficiently leverage their research and development spending over a wider range of products. There may also be marketing, distribution, purchasing, and economy-of-scale advantages. Smaller suppliers are more vulnerable, given their weaker negotiating leverage with customers and their lack of scale, undermining their ability to manufacture at a lower cost. Increasingly, size and scale are becoming key competitive differentiators, as many customers are choosing to work with fewer suppliers.

39. Product diversity is essential, because a narrow product mix makes a company vulnerable to competitive pressures, substitution from alternative materials, and changes in customer demand preferences. As such, a broad product mix can result in more stable earnings and cash flows, providing better credit protection. Most packaging companies we rate focus on a specific material (glass, plastic, paper, or metal) and sell across different end-markets.

40. Size and scale of operations often afford better diversity. Many of the speculative-grade issuers

are relatively small, niche players with limited product and geographic diversity, and high dependence on relatively few customers or end markets, and therefore have a high sensitivity to relatively small changes in demand, market share loss, or other adverse market conditions.

41. Significant customer concentration (i.e., sales to a single customer that exceeds 10% of total sales) often limits pricing flexibility, and can hurt operating performance if that customer faces its own business or financial challenges. Still, levels of interdependence between packaging suppliers and customers vary, which could somewhat offset risks associated with a dependence on a few customers. Sole-supplier arrangements with customers are favorable, and product development and proprietary technologies often result in longstanding relationships with customers.

42. Diversity of types of packaging materials (i.e., metal, glass, paper, and plastic packaging) often mitigates substitution risk to some extent, if conversion trends accelerate in specific end markets, or higher input costs make one material less favorable versus another. End-market diversity limits the impact of seasonal- and weather-related factors for beverage and food packaging.

43. Geographic diversity is also reviewed in the context of a company's ability to benefit from growth in emerging regions, which offsets mature demand in developed countries. Although a significant portion of the packaging companies we rate have a national (in the U.S.) or European (in Europe) presence, a number of players benefit from globally diversified operations. Successful companies with global leadership positions in their respective products also can better serve the growing needs of their multinational food and beverage product customers. Companies have successfully expanded into developing economies, benefiting from low levels of product penetration and per capital consumption. However, in certain situations, these benefits have been offset by increased country risks, including political issues, foreign-exchange losses, and more competition, which have temporarily affected such markets that have higher growth potential in the long term.

44. A packaging company that warrants a "strong" or "strong/adequate" assessment of scale, scope, and diversity typically is characterized by a combination of:

- Revenue base and/or target markets of large size relative to that of other participants in the industry, typically supported by significant product breadth, and diversity of business segments, substrates, revenue mix, and profit sources;
- Participation in a variety of end markets that have generally favorable long-term growth prospects and are not closely correlated;
- Good balance of revenues and profits generated from different substrates;
- Geographically diversified revenue base and production footprint; or
- No significant unmitigated customer or supplier concentration;

45. A packaging company warranting a "weak" or "adequate/weak" assessment of scale, scope, and diversity typically is characterized by a combination of:

- Revenue base and/or target markets of limited size relative to other participants in the packaging industry, or a lack or limited diversity in product breadth, diversity of business segments, substrates, and revenue and profit sources;
- Participation in only a few end markets and/or markets that have limited growth prospects, or markets that closely correlate to one another;
- Concentration in one substrate or a subsegment of one substrate;
- Limited or lack of geographic diversification or concentrated production footprint;
- A higher degree of customer or supplier concentration (e.g., the largest customer accounts for

10% or more of sales or operating profit) that is not mitigated by the characteristics of the customer or supplier base.

Operating efficiency

46. In assessing operating efficiency for a packaging company, we consider its:

- Relative cost position versus that of industry peers;
- Ability to pass through raw material costs;
- Operating rates;
- Proximity of manufacturing facilities to customer locations;
- Focus on lean manufacturing practices; and
- To the extent a packaging company has a high degree of operating efficiency, it should be able to generate better profit margins than peers that compete in the same markets, despite prevailing market conditions.

47. In reviewing the relative cost position of a packaging company compared with that of peers, we primarily consider its EBITDA margin profile, supplemented by various indicators of cost efficiency and capital intensity such as time lag in passing through raw material costs, percentage of contracts with raw material pass through provisions, raw material mix, and capital expenditure to sales. The overall cost and margin profile of a packaging company and that of its various reporting segments are important in our analysis.

48. A company's focus on operating efficiency enhancements and cost reductions is critical to preserving its profitability over time, in light of intensified competition, and pricing concessions sometimes granted to renew multiyear contracts with customers. In addition, maximizing operating rates is a key factor for glass and metal container production, and some capacity enhancement is typically achieved through ongoing operating efficiency improvements. In contrast, optimal operating rates vary in the plastic packaging industry, given a much broader range of product shapes and sizes, and sometimes, shorter runs for lower-volume, customized product requirements.

49. We view the proximity of manufacturing facilities to customer locations as a factor in operating efficiency for packaging producers, in terms of lower shipping costs, improved logistics and generally foster stronger customer relationships. Although it is uneconomical to ship heavier containers across long distances, imports pose a growing threat for certain commodity-type films that are easier to transport.

50. The ability to pass through raw material costs is a critical factor in operating efficiency for packaging companies. Raw materials (plastic resins, steel, and aluminum) account for about 50% to 60% of the cost of goods sold for plastic and metal packaging, so it is essential that a company can pass on volatile raw material prices to customers to preserve operating margins. Packaging companies that are well positioned from a raw material cost pass-through standpoint will typically enjoy a more favorable business risk assessment. For example, metal, glass, and rigid plastic packaging producers (except disposable foodservice packaging, and film and flexible plastic packaging producers) benefit from contractual arrangements with its customers for most of their sales, which include clauses to pass through raw material or energy cost fluctuations to customers, although with some time lag.

51. Glass is significantly more capital and energy intensive, and susceptible to raw material (soda ash) cost swings. Accordingly, we evaluate the company's ability to hedge energy costs and pass

through higher energy and raw material costs, which is crucial for preserving operating profitability.

52. In the plastic packaging segment, we generally view film and flexible packaging producers less favorably than rigid plastic packaging producers. The former have to temporarily absorb resin cost increases, and often have limited success in passing through the higher cost to their own customers, eroding operating results and internally generated cash flow. In contrast, producers of more value-added rigid plastic packaging usually benefit from contractual arrangements that pass through raw material price fluctuations to their customers.

53. A packaging company with a "strong" or "strong/adequate" operating efficiency assessment typically is characterized by a combination of:

- Profitability, as measured primarily by EBITDA margins, that is consistently higher than peers (after taking into account differences in sales mix that also affect profit margins);
- Evidence of a sustainable cost advantage, possibly achieved from: economies of scale, production efficiencies through higher operating rates, low-cost footprint or sourcing arrangements, customer proximity, effective quality controls, overhead costs at competitive levels--or a combination thereof;
- Strong ability to pass through raw material costs and a high percentage of contracts with raw material pass through provisions;
- A track record of ongoing cost structure improvements, such as labor cost reductions, low-cost sourcing, capacity rationalization, and ongoing measurable lean manufacturing practices; or
- Favorable cost-management measures compared with peers over the business cycle, including in areas of working capital management, systems integration, and acquisition integration.

54. A packaging company with a "weak" or "adequate/weak" assessment of its operating efficiency typically is characterized by a combination of:

- Profitability, as measured primarily by EBITDA margins, that is below that of its peer group (after taking into account differences in sales mix that also affect profit margins);
- Evidence of cost disadvantage, possibly from: structural overcapacity; suboptimal operating rates; lack of customer proximity; limited quality controls; or higher-than-average input costs for labor, raw materials, or selling, general, and administrative costs;
- Inability to pass through raw material costs effectively and/or limited protections or a lack of protections from contracts;
- Limited track record of cost-reduction initiatives, reflected by higher-than-industry peers' labor costs, sourcing costs, excess capacity, or lack of measurable lean manufacturing practices; or
- Unfavorable cost-management measures compared with those of its peers, including in areas of working capital management, systems integration, or acquisition integration.

Profitability

55. The profitability assessment can confirm or modify the preliminary Competitive Position assessment. The profitability assessment consists of the level of profitability and the volatility of profitability. The two components are combined into the final Profitability assessment using a matrix (see Corporate Methodology).

Level of profitability

56. The level of profitability is assessed on a three-point scale: "above average," "average," and "below average."

57. We use EBITDA margin as the primary indicator of a packaging company's level of profitability, based on certain thresholds (see table 1). We use return on capital (ROC) as a supplementary indicator to refine our assessment when 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 would assess its level of profitability "above average." In accordance with the corporate criteria, for this assessment we typically determine the five-year average EBITDA margin (and ROC where we require further guidance) using the last two years of historical and three years of forecast data; we may put more emphasis on forecast years if historical data is not deemed representative, or to take into account deteriorating or improving profiles where prospective ratios meaningfully differ from average ratios. In some cases, the application of local accounting rules (for non–U.S. GAAP or non-International Financial Reporting Standards reporting companies) may warrant using different thresholds to account for financial reporting differences.

Table 1

EBITDA Margin: Primary Measure

(%)

	Below average	Average	Above average
EBITDA margin	< 13	13-17	> 17

Table 2

Return On Capital: Secondary Measure

(%)

	Below average	Average	Above average
Return on capital	< 9	9-13	> 13

58. We use EBITDA margin and ROC thresholds to differentiate all packaging companies.

Volatility of profitability

59. The volatility of profitability is assessed on a six-point scale, from '1' (lowest volatility) to '6' (highest volatility).

60. 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 measure to determine the SER for packaging 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

Accounting and analytical adjustments

61. In assessing the accounting characteristics of packaging companies, the 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 the accounting to determine whether the statements accurately measure a company's performance and position relative to 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."

Cash flow/leverage analysis

62. In assessing the cash flow adequacy of a packaging issuer, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology"). Cash flow/leverage is assessed on a six-point scale--ranging from minimal ('1') to highly leveraged ('6')--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 waterfall in relation to its obligations.

Core ratios

63. For each company, we determine in accordance with S&P Global Ratings' Ratios and Adjustment criteria, two core debt payback ratios: funds from operations (FFO)/debt and debt/EBITDA.

Supplemental ratios

64. In addition to our analysis of a company's core ratios, we also consider supplemental ratios to more fully understand a company's credit risk profile and refine our cash flow analysis in accordance with the corporate criteria. We generally use for packaging companies:

- Free operating cash flow (FOCF)/debt as the preferred supplemental ratio. Working capital and capital spending cycles can significantly shape packaging companies' cash flow generation patterns. In the early stages of a downturn, capital released from working capital has historically helped companies in the packaging industry achieve an FOCF/debt ratio that are stronger than FFO/debt, and we may adjust the cash flow and leverage assessment accordingly. Asymmetrically, during a business upturn, funding needs for working capital can often depress the FOCF/debt ratio, pointing to a lower cash flow and leverage assessment than the core ratios, but we may choose not to use the supplementary ratio adjustment (negative) if the core ratios are on an improving trend.
- We may alternatively use debt service coverage ratios (FFO plus interest/cash interest, or EBITDA/interest), when the cash flow and leverage assessment indicated by the core ratios is "significant" or weaker.

- For companies that return more than one-half of their FOCF to shareholders through dividends, we may consider discretionary cash flow as the most relevant supplemental ratio.

Part III--Rating Modifiers

Diversification/portfolio effect

65. In assessing the diversification/portfolio effect on a packaging company, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

Capital structure

66. In assessing a packaging company's capital structure, our analysis uses the same general methodology as with other corporate issuers (see "Corporate Methodology").

Liquidity

67. In assessing the liquidity of a packaging company, our analysis uses the same general methodology as with other corporate issuers (see "Corporate Methodology").

Financial policy

68. In assessing financial policy on a packaging company, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

Management and governance

69. In assessing management and governance on a packing company, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

Comparable ratings analysis

70. In assessing the comparable ratings analysis on a packaging company, 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 the date of publication.

Changes introduced after original publication:

- Following our periodic review completed on April 7, 2016, we updated the contact information and criteria references. We also deleted paragraphs 2, 6, and 7, which were related to the initial publication of our criteria and no longer relevant.
- Following our periodic review completed on March 28, 2017, we updated the contact information.

- Following our periodic review completed on March 23, 2018, we updated the contact information and criteria references and renamed the "Revision History" section to "Revisions And Updates."
- On May 17, 2019, we republished this criteria article to make nonmaterial changes to update the contact information and criteria references.

RELATED CRITERIA AND RESEARCH

Superseded Criteria

- Key Credit Factors: Methodology And Assumptions On Risks In The Packaging Industry, Dec. 4, 2008

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. 21, 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
- Methodology: Industry Risk, Nov. 19, 2013
- Methodology And Governance Credit Factors For Corporate Entities And Insurers, Nov. 13, 2012
- Principles Of Credit Ratings, Feb. 16, 2011

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