

ARCHIVE | Criteria | Corporates | Industrials:

# Key Credit Factors For The Auto And Commercial Vehicle Manufacturing 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*(Editor's Note: This article is no longer current.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. These criteria present S&P Global Ratings' methodology and assumptions for the auto and commercial vehicle manufacturing industry (which we also refer to as the auto original equipment manufacturer [OEM] industry).
2. The information in this paragraph has been moved to the "Revisions And Updates" section.

## SCOPE OF THE CRITERIA

3. S&P Global Ratings is refining its criteria for the global auto and commercial vehicle manufacturing industry. By auto and commercial vehicle manufacturing companies, we mean issuers that derive a majority of their revenues from manufacturing and selling motor vehicles, primarily passenger cars and trucks and, to a lesser extent, vans and buses. These companies are also frequently designated as OEMs. For auto and commercial vehicle manufacturers that have captive finance operations, we apply our captive finance criteria (see "Methodology: The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers").
4. This article is intended to help market participants better understand the factors that we see as most relevant for the industry from a credit quality standpoint and to describe the methodology we use to determine ratings for global manufacturers. This article is related to our corporate criteria (see "Corporate Methodology") and to our criteria article "Principles Of Credit Ratings."
5. These criteria also cover pure commercial vehicle manufacturing groups. Automakers and commercial vehicle manufacturers face similar challenges when confronting demand cyclicalities and sustaining operating efficiency; they also share similar industrial constraints in terms of capacity and research and development (R&D). In addition, several commercial vehicle manufacturers belong to broader automotive groups and light commercial vehicles (pickup trucks in the U.S. or minivans in Europe) contribute significantly to earnings for many companies.
6. This article does not cover auto suppliers--manufacturers of parts or components used in vehicle production--or providers of business services related to the auto industry (e.g., rental, repair, retail, or distribution businesses). These are covered in separate KCF criteria articles.

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## SUMMARY OF THE CRITERIA

7. These criteria describe S&P Global Ratings' methodology for analyzing auto and commercial vehicle manufacturing companies by applying S&P Global Ratings' global corporate criteria.
8. We view auto and commercial vehicle manufacturing as a "moderately high risk" industry under our criteria, given its "high" cyclical risk and "intermediate" degree of competitive risk/growth. In assessing a global automaker's or commercial vehicle manufacturer's competitive position, we particularly emphasize the company's market position and product differentiation; ability to charge a price higher than that of peers in the same market segment; market share in the premium segment or in a specific submarket that increases earnings potential; R&D capabilities and product renewal plans; participation in a variety of geographic end-markets, including those with generally favorable long-term growth prospects; and operating efficiency, including the geographic diversity of a company's production capacities, commonality of platforms, indirect benefits from strategic alliances, cost base flexibility, and sensitivity to labor costs.
9. In our assessment of the financial risk profile, we rely on adjusted key credit ratios. Our assessment considers the industry's working capital characteristics (including seasonality, outflows/inflows over the course of the business cycle, and particularly movements in payables and inventories that can be material during downturns) and their effect on cash flow coverage ratios.
10. This paragraph has been deleted.
11. The information in this paragraph has been moved to the "Revisions And Updates" section.

## METHODOLOGY

### Part I: Business Risk Analysis

#### A. Industry Risk

12. Within the framework of S&P Global Ratings' corporate criteria for assessing industry risk, we view auto and commercial vehicle manufacturing as a moderately high risk industry (category 4). We derive this assessment from our view of the sector's high (5) cyclical risk and our assessment that the industry warrants an intermediate risk (3) competitive risk and growth assessment.
13. Key drivers of cyclical risk for auto and commercial vehicle manufacturing include economic growth and consumer confidence. Cars represent big-ticket items for most households and, therefore, consumer confidence is key when considering a purchase. Employment growth, household formation, interest rates, availability of credit and consumer-driven demands (e.g., greater use of infotainment, better fuel efficiency) also play a part in shaping demand for passenger cars. For commercial vehicles, cyclical risk is more closely correlated to economic growth and business confidence. Buyers are freight companies and, to an even greater extent, smaller trucking companies or one-man owner-operators.
14. Some markets observed a high peak-to-trough (PTT) decline in car sales of more than 30% in recent downturns (led by U.S. OEMs in 2009). Commercial vehicles showed even greater cyclical risk, with volume declines of more than 50% in both Europe and the North American Free Trade Agreement (NAFTA) area in 2008 and 2009. On a quarterly basis, order intake for trucks can vary by as much as 20%-30% depending on economic factors, as well as regulatory requirements

or government incentive schemes.

15. Defaults in the industry include the well-publicized chapter 11 filing of two large U.S. auto manufacturers in 2009: Chrysler LLC and General Motors Corp. In 2011, Saab Automobile AB, a Sweden-incorporated premium manufacturer, also filed for bankruptcy after a three-year fight for survival. Despite inherent volatility in demand for commercial vehicles, few bankruptcies have occurred in the subsector, primarily due to stronger balance sheets--at least so far--and relatively robust liquidity among most truckmakers.
16. The industry is characterized by high operating leverage and significant fixed cost bases. As a result, when facing revenue declines, auto and commercial vehicle manufacturers' profits typically decline at even faster rates than sales.
17. Volume cyclicality and price competition for motor vehicles are generally high, but vary across segments. In markets where products are highly engineered and customized for specific applications (e.g., in the premium segment), competition rests primarily on product quality and brand image, resulting in lower price cyclicality. In the globally competitive mass market, supply and demand imbalances result in greater pricing competition. Price competition may manifest itself in substantial discounts or sales incentives (selling an upgraded vehicle for the same price as a lesser-equipped one), causing fluctuations in revenue and an exaggerated effect on earnings.

## 1. Cyclical assessment

18. We assess cyclicality for the auto and commercial vehicle manufacturing industry as high (5) risk. Relative to other industries, auto and commercial vehicle manufacturing is highly cyclical in both revenues 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, the industry experienced an average PTT decline in revenues of about 17% during recessions since 1952. In addition, in two of the recessions, the revenue declines were greater than the average 17%. The steepest decline (a 31% drop in revenues) occurred during the most recent downturn (2007-2009), with the U.S. market contributing significantly to the overall decline. The 2007-2009 recession was one of the most severe experienced by mature economies since the Great Depression of the 1930s. In developed economies, the level of car ownership is such that the car market for any given year can easily overshoot the annual change in GDP, especially on the downside. Over the same period, auto and commercial vehicle manufacturing companies experienced an average PTT decline in EBITDA margin of about 38% during recessions. PTT declines materially exceeded the 38% average in four of the recessions identified since 1952. The largest PTT drop (79%) occurred during the early 1980s and another steep fall (65%) was recorded during the recent 2007-2009 economic downturn. In 2009, this resulted in the well-publicized chapter 11 filing of two large U.S. auto manufacturers: Chrysler LLC and General Motors Corp.

## 2. Competitive risk and growth assessment

19. We view auto and commercial vehicle manufacturing as warranting an intermediate (3) 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 auto and commercial vehicle manufacturing industry's barriers to entry – low risk**

20. Barriers to entry in the auto and commercial vehicle manufacturing sector are high overall. Globally, the industry is dominated by a limited number of companies that need sizable production capacity and significant R&D and marketing capabilities to maintain global appeal of their brands. Brand recognition and perception of quality and safety are also key barriers to entry, as are manufacturing know-how and capital intensity, the requirement to have relatively large assembly sites to produce efficiently, and the constant need to invest substantial amounts to upgrade product lines. Critical size matters in this global industry. Product technology, protection through patents, access to distribution networks, and the ability to service a large installed global base also act as barriers to entry. Access to capital can also be a differentiator during difficult market conditions, favoring either larger players or those with better credit quality and a technological edge that can stimulate open collaboration with technology companies.

### **b) Level and trend of profit margins in the auto and commercial vehicle manufacturing industry – high risk**

21. Compared with other industries and even with most other manufacturing sectors, profitability in the overall auto and commercial vehicle industry is low, primarily due to significant competition, high fixed costs, and a relatively high number of industry players. Demand for new car sales is highly cyclical; aftermarket and service revenues typically provide some stability but the OEMs receive only a fraction of these revenues (the bulk is retained by the related retail and repair network).
22. For commercial vehicles, customers usually base their purchase decisions on rational economic parameters, such as how much a truck will cost over a lifetime, including fuel efficiency, durability, maintenance costs, and availability of service points. Commercial vehicle manufacturers also face fewer competitors than auto manufacturers, which generally means that commercial vehicle manufacturers are able to generate slightly higher operating margins than mass-market carmakers. Demand for commercial vehicles is also heavily influenced by emission regulations. Tighter requirements are usually accompanied by significant price increases, resulting in so-called "pre-buy effects" where the truck buyers purchase the old models ahead of regulation changes, creating some volatility between quarters.
23. In the auto and commercial vehicle manufacturing industry in general, increases in labor, component, and raw material costs may pressure margins. In addition, because the industry is characterized by a global supply chain and just-in-time manufacturing has become the norm worldwide, disruptions in supplies may also affect profitability for a few quarters. The ability to pass on cost increases may vary between companies, but is generally limited because of competitive pressure and long lead-times. However, automakers' and truckmakers' purchasing power is strong and, therefore, the industry has not seen any marked cost spikes other than general cost increases on components.
24. In high-growth markets, competition from local players could pressure margins. In more mature markets, imports of vehicles or new production capacity in neighboring countries (e.g., in Eastern Europe or in Mediterranean Rim countries, or in Latin America) can also significantly affect operating margins and competition. Tariffs and trade barriers have been uncommon in the industry over the past few decades. Nevertheless, local content requirements or the need to operate with local partners through joint ventures in some countries can complicate manufacturers' footprint and operational strategies.

25. Capital expenditure (capex) requirements are typically high; manufacturers can differentiate by the level of integration for component manufacturing. Manufacturers with extensive vertical integration typically exhibit a higher fixed capital spending profile than those focused mainly on product design and assembly. Significant vertical integration may, however, be part of a manufacturer's strategy to command and maintain a price premium because perceptions about quality, reliability--in particular for powertrain--and design are essential in this consumer-driven industry. (Note: In a motor vehicle, the term "powertrain" refers to the group of components that generate power and deliver it to the road surface. Powertrain commonly includes the engine, transmission, drive shaft differentials, and the final steering equipment.)
26. Working capital requirements are also typically high and somewhat seasonal, and are exacerbated during economic downturns. In case of a sudden decline in demand (such as after the global recession in late-2008), inventory build-up at the manufacturer's level, as well as for its dependent retail network, and a drop in payables' balance can result in significant swings in working capital.

### **c) Risk of secular change and substitution by products, services, and technologies – low risk**

27. Product substitution risk is generally limited across the auto and commercial vehicle manufacturing industry. Mobility is a key requirement supporting much of the economic and recreational activity. The flexibility cars provide in terms of final destination, immediate availability, and the ability to cope with short- or long-distance journeys remains unmatched. Demand for commercial vehicles is supported by the high costs of air freight and building railroads. Trucks are commonly the only alternative when transporting goods on numerous short- or long-haul routes.
28. We expect total sales volumes and the proportion of hybrid cars and electric vehicles to increase over time. (Notes: A hybrid vehicle uses two or more distinct power sources to move. Most commonly, this refers to hybrid electric vehicles, which combine an internal combustion engine and one or more electric motors. An electric vehicle uses one or more electric motors for propulsion.) However, given R&D requirements, the capital intensity of the engine manufacturing process, the gradual technological improvements that can be incorporated in the manufacturing process, and the high safety standards imposed on the sector, we expect these changes in powertrain will likely come from existing players, although we note the emergence of new entrants, including from the technology sector. Technological displacement is typically not a major risk factor, although some segments, such as premium vehicles or sports cars, could be prone to higher-than-average technological risk. We also note the emergence over the medium term of potentially disruptive trends of autonomous driving, electrification, and digitalization.
29. Government mandates and subsidies (such as scrappage schemes, cash-for-clunkers, and fuel-saving or green vehicle policies) can bolster demand for vehicles, but changes to or the expiration of these programs can also disrupt certain market segments at specific points in time.

### **d) Risk in growth trends for the auto and commercial vehicle manufacturing industry – medium risk**

30. Demand for autos and commercial vehicles tends to grow faster than GDP during economic expansion, slower than GDP when growth is subdued, and contract more severely than GDP during recessions. In this context, a key success factor in the industry is having an overall capacity that is appropriately sized, rather than unduly excessive, to meet fluctuations in demand. Demand for

certain types of cars (e.g., luxury and sports cars) can be partially insulated from the overall economic environment, but competition is intense on quality, design, and brand perception. Globally, S&P Global Ratings expects the demand for autos and trucks will grow; hence a geographically diversified manufacturer can generally offset weak markets by taking advantage of the growing markets in which it operates.

31. Because the age of an existing fleet ranges from 8-11 years in mature markets, a portion of demand for passenger cars is tied to scrappage and replacement and is partly hedged against swings in demand. In emerging markets, factors such as rising available income, the low ratio of car per inhabitant, road network buildup, and some demographic trends (e.g., urbanization, car as a status symbol, family ownership) support long-term demand for autos. In mature markets, a change in social habits and the availability of alternative mobility options may slowly but steadily erode car usage. In this context, active brand management, a focus on final price or on indicators of quality and reliability, and a strategy for trying to anticipate consumer-driven trends (e.g., greater use of infotainment, better fuel efficiency, innovative powertrain or design, safety track record) are all valid bases for differentiation.

## B. Country Risk

32. Country risk plays a critical role in determining all ratings on companies in a given country. Country-related risk factors can have a substantial effect on a company's creditworthiness, both directly and indirectly. While our sovereign credit ratings suggest the general risk local entities face, they may not fully capture the risk applicable to the private sector. We look beyond the sovereign rating to evaluate the specific economic, demographic, and other country risks that may affect an entity's creditworthiness.
33. With respect to auto and commercial vehicle manufacturers, the aspects of country risk that are most directly relevant include:
- The extent to which different regions are subject to varying levels of volatility that can affect revenues and capital spending;
  - The relative maturity of a country's industrial and infrastructure base, as well as differences in manufacturing and production costs between countries;
  - The state of the local lending markets, the availability of financing, and the level of interest rates to fund motor vehicle purchases;
  - The extent to which the government seeks to stimulate domestic manufacturing or motor vehicle sales, or facilitates or hinders capacity adjustment; and
  - The extent to which government actions have either stabilized or destabilized the market, for instance, through regulatory actions or by enforcing import tariffs.
34. To assess country risk for global automakers and truckmakers, the corporate criteria apply. In the absence of a proper breakdown of earnings by country, we assess country risk using a breakdown of revenues or unit sales (which are commonly available for automotive companies). The industry is dominated by a limited number of truly international global manufacturers and their parent companies are usually incorporated in countries that belong to the Organization for Economic Cooperation and Development. As a result, we do not see transfer and convertibility risk as a major rating constraint for the sector. In addition, we consider that global auto and commercial vehicle manufacturers benefit from a diversified industrial footprint (a global automaker or truckmaker typically owns several plants operating in different jurisdictions). They can also shift export and import flows both for finished products and supplies between regions. As a result, we consider

that country risk is likely to be less of a rating driver for the automotive industry than for other sectors. We consider that measures protecting domestic car industries, such as import duties, local content requirements, or trade agreements, have had a limited impact in the sector. The auto and truck manufacturing sector is generally a competitive global industry. While China is the world's largest market for cars, the three main markets for commercial vehicles, both in terms of volumes and profits, remain Europe, NAFTA, and Latin America. The Chinese market for heavy trucks is almost as big as the other three main markets combined, but it is still dominated by local producers with much lower truck specifications and, thus, lower profit potential.

35. We foresee that the corporate industry and country risk assessment for most global auto and commercial vehicle manufacturers will likely be "moderately high risk" (category 4). Per our matrix, there is no upside from low country risk for a "moderately high risk" industry (category 4) assessment.

### C. Competitive Position (Including Profitability)

36. 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 auto and commercial vehicle manufacturers, we review an individual company's:
- Competitive advantage;
  - Scale, scope, and diversity;
  - Operating efficiency; and
  - Profitability.
37. The first three subfactors are independently assessed as (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.
38. 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 depend on the company's competitive position group profile (CPGP). The CPGP generally assigned to global auto and commercial vehicle manufacturers is "capital or asset focus," whereby we weight the first three subfactors of competitive position as follows: competitive advantage (30%); scale, scope, and diversity (30%); and operating efficiency (40%).
39. We consider that premium vehicle manufacturers and especially luxury or sports car makers have established strong identifiable brands and are competing on quality and innovation rather than prices. Their relative capital intensity, however, is no less than that of mass-market manufacturers (if anything, it's higher because of R&D requirements and substantial vertical integration). We also consider that operating efficiency is a key factor for their long-term success. For automakers and truckmakers, below we discuss their brands as a differentiator as part of our competitive advantage assessment.

#### 1. Competitive advantage

40. In assessing an auto or commercial vehicle manufacturer's competitive advantage, we consider its business strategy and market position. In reviewing strategic positioning, we consider a company's ability, or lack thereof, to extend or protect retail market share in key markets by offering products that customers desire and that are affordable by their living standards. This is

commonly measured through market share evolution. Our assessment of competitive advantage for global automakers and truckmakers includes:

- A review of market share relative to industry peers and for main product segments (e.g., by vehicle size, final price, or purpose). We measure market shares globally and, more importantly, by region and country. This is essential in our analysis because of the regional markets' cyclicity and differing growth prospects, even though downturns can be correlated globally.
- Market share in the premium segment, where pricing competition is less than the industry average.
- Market share in specific submarkets that improve a company's earnings profile (e.g., pickup trucks in the U.S.).

41. In reviewing an auto or commercial vehicle manufacturer's product profile and differentiation strategy, we consider:

- Its brands and degree of differentiation, the noncannibalization among the various brands for the same group, and the overall breadth of its product line;
- The degree of product uniqueness/customization and its technology/engineering expertise (including its innovation capabilities or manufacturing know-how);
- Reliability and quality measures (reviews of residual values for second-hand vehicles and automotive sector quality surveys like those of J.D. Power And Associates);
- Its R&D capabilities, product renewal and rollout plans, and the average age of its models; and
- Compliance with environmental regulation (e.g., its track record in terms of CO2 emissions) and safety standards.

42. A reliable and efficient funding capability to support its motor vehicle distribution and sales process can be a significant differentiating competitive advantage for an automaker or truckmaker. We measure this through the final cost of funding for the end-buyer and the diversity of the financing alternatives that the company can offer to its customers. Companies can achieve efficient funding either through their ownership of a captive unit or solid partnerships with other financing partners. Competitive funding is essential to support the commercial performance of an automaker's distribution network. For commercial vehicles, there is an even stronger need for a captive finance business because truck buyers commonly expect to finance their vehicles over their entire economic lives.

43. In reviewing an auto or commercial vehicle manufacturer's distribution strategy, we consider the effectiveness of its distribution and marketing strategy, including its distributor/dealership network, the characteristics of its sales force, and, where applicable, the financing capabilities that support its network.

44. A global auto or commercial vehicle manufacturer with a "strong" or "strong/adequate" competitive advantage assessment typically has a combination of the following characteristics:

- Leading--typically in excess of 10%--and stable or growing market shares in key markets.
- The ability to extend or protect retail market share in key markets by consistently offering products that customers desire.
- For a premium automaker, key differentiators should be quality, reliability parameters, and brand perception. At the lower end of the market, differentiation should rest on affordability and value-for-money characteristics (i.e., the vehicle still needs to meet minimum requirements in terms of safety and reliability standards; in this respect, customers'

expectations globally have increased significantly over the past decade).

- An extensive lineup of different types of product technology that commands name/brand recognition, and pricing power if not leadership, as well as the ability to charge a price higher than that of peers in the same market segment.
- Some degree of leverage with component suppliers, providing control over prices and R&D content.
- Some degree of customer stickiness (as measured, for instance, through levels of repeat sales), achieved, for example, through long-term financing contracts, customer satisfaction surveys and actions, resilient residual values, an extensive and exclusive distribution and repair network, servicing contracts, or a combination thereof.

45. A global auto or commercial vehicle manufacturing company with a "weak" or "adequate/weak" assessment of its competitive advantage typically has a combination of the following characteristics:

- Low or declining market shares in key markets;
- A lack of differentiated brands or products;
- No pricing power and a limited ability to prevent sales incentives or prices discounts (these companies are typically a price follower, if not a discounter);
- A lack of customer stickiness compared to the industry and peers (e.g., low customer retention); and
- A lack of leverage with key suppliers.

## 2. Scale, scope, and diversity

46. In assessing an auto or commercial vehicle manufacturer's scale, scope, and diversity, we consider:

- Its revenues and profits across regions and the degree of end-market diversity and relative de-correlation. We commonly measure scale through overall unit sales and diversity through breakdown by region. However, a breakdown of earnings per region is more relevant for assessing diversity. We also use the number of brands (several or just one), sales by brands, and the number of vehicles on catalog (especially if companies can achieve this using a limited number of platforms) to gauge scope and diversity.
- Its production footprint and degree of geographic concentration.
- The size of any captive finance subsidiary, its penetration rate in terms of unit sales financed, and its contribution to earnings.
- Its supplier concentration.

47. In terms of scale, scope, and diversity, we see diversity coming from commercial vehicles as a positive for a passenger car mass-market manufacturer. We see strong positioning into the premium segment even more positively due to its typically superior contribution to earnings. For commercial vehicle manufacturers, scale is important due to increasing R&D costs in the industry, even though we see flexibility in production, a premium offering, and a well-developed service network as more important to sustaining profit margins. We also commonly assess a strong market presence in China, the largest car market in the world since 2009, as a positive from a

credit perspective. Because of domestic regulation, however, we note that all global automakers operating in China do so through joint ventures that are typically 50/50 owned. From a credit perspective, we view this less favorably than operations through fully owned subsidiaries because joint ventures, by nature, imply less control over strategic decisions and cash flows.

48. Strategic alliances have been common in the industry, although their track record has been mixed. If sustained over the long term (typically more than five years) and successful in terms of revenue synergies or mutual cost savings, we see strategic partnerships as positive for our assessment of an automaker's scale, scope, and diversity. A primary benefit is that the partners share the significant costs for developing new products and technologies. Operational integration may also cover the development of certain models, the use of common platforms and components, the manufacturing of products in shared facilities, and the pooling of spare-parts procurement. Alliances also may help to target increasingly differentiated customer demands and, thereby, potentially increase sales volumes by tapping new market segments.
49. For commercial vehicle manufacturers, scale is important due to high R&D costs and a high fixed cost base, even though we also see flexibility in production, a premium offering, and a well-developed service network as important for sustaining profit margins.
50. An auto or commercial vehicle manufacturer that warrants a "strong" or "strong/adequate" assessment of scale, scope, and diversity typically has a combination of the following characteristics:
  - Participation in a variety of geographic end-markets, including those with generally favorable long-term growth prospects (Asia-Pacific at the moment and emerging countries in general);
  - Diversification between mass-market, commercial vehicles, premium, and possibly other niche segments (entry, pickups);
  - Geographically diversified production capacities; and
  - No significant unmitigated supplier concentration.
51. An auto or commercial vehicle manufacturer that warrants a "weak" or "adequate/weak" assessment of scale, scope, and diversity typically has a combination of the following characteristics:
  - Participation in only a few geographic or end-markets;
  - Limited size compared to the industry or with limited growth prospects;
  - A lack of diversified revenue and profit sources; and
  - No meaningful strategic partnership to mitigate its small size.

### 3. Operating efficiency

52. In assessing operating efficiency for an auto or commercial vehicle manufacturer, we consider:
  - Its relative cost position vs. industry peers, including gross margin, R&D/selling, general, and administrative (SG&A) expenses/overhead profile, and EBITDA/operating margin metrics over the cycle.
  - The location of its industrial footprint, capacity utilization levels, and level of commonality across products.
  - Its cost structure flexibility, including fixed/variable cost percentages, ability to reduce costs and manage inventories in a downcycle, and ability to pass on increases in input costs.

- Its track record of cost reductions, capacity adjustment, and solid management of labor relations through the cycle. In this respect, following two major bankruptcies, U.S.-domiciled manufacturers significantly reduced capacity. We see the ability to cut costs quickly and to effectively reduce capacity as important yardsticks for our operating efficiency assessment.
- Its working capital management and trend line in working capital metrics.
- Its track record of integrating any acquired businesses.

53. An auto or commercial vehicles manufacturer warranting a "strong" or "strong/adequate" operating efficiency assessment typically has a combination of the following characteristics:

- Profitability, as measured primarily by EBITDA and EBIT margins, that is consistently higher than peers;
- A cost position that is better-than-average due to economies of scale and/or production efficiencies (possibly achieved from a low-cost footprint, high volume automation, commonality of production platforms, use of preassembled modules and specialized assembly lines for certain key car components like chassis or powertrain, and indirect benefits from long-standing strategic alliances or technology-focused agreements);
- A track record of ongoing cost structure improvements (such as structural labor cost reductions, low-cost sourcing, and ability to adjust the industrial footprint) achieved through the cycle;
- A relatively flexible cost structure (including the ability to adjust labor costs in a downcycle and significantly outsource its manufacturing activities);
- Overhead costs at competitive levels (measured via SG&A as a percentage of revenues);
- Limited or effectively mitigated profit/margin sensitivity to fluctuations in raw material costs; and
- A good track record of supply chain management and limited impact on car production from disruptions in auto parts supply.

54. An auto or commercial vehicle manufacturer warranting a "weak" or "adequate/weak" assessment of its operating efficiency typically has a combination of the following characteristics:

- Profitability metrics, such as EBITDA and EBIT margins or return on capital (ROC), consistently below peers due to cost disadvantage (possibly from structural overcapacity, higher-than-average input costs for labor, noncompetitive levels of SG&A, or inability to command a price premium vs. cheaper-producing competitors);
- A less-flexible-than-average cost structure (for instance, due to labor inflexibilities, outdated asset base/production technology, small size, and insufficient volumes to spread overhead costs more efficiently);
- A concentrated production footprint;
- Excessive inventory levels or unfavorable working capital metrics;
- Higher-than-average profit/margin sensitivity to fluctuations in raw material costs or high impact from supply chain disruptions; and
- A history of restructuring actions without tangible saving benefits and operational missteps (low quality or long lead-time, frequent recalls).

## 4. Profitability

55. The profitability assessment can confirm or modify the preliminary competitive position assessment. The profitability assessment consists of two components: (1) the level of profitability and (2) the volatility of profitability. We combine these two components into the final profitability assessment using a matrix (see the corporate criteria).

### a) Level of profitability

56. We assess the level of profitability on a three-point scale: "above average," "average," and "below average."
57. As with other manufacturing activities, we use EBITDA margin as the primary indicator of an automaker's or truckmaker's level of profitability based on the thresholds identified in table 1 below. We adjust the profitability measures by stripping out the impact of captive finance from consolidated earnings. We use 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 the ROC thresholds in table 1). For instance, if a company's EBITDA margin is at the high end of the defined range for "average" but its ROC 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. We may particularly emphasize the forecasted years if historical data are not deemed representative or to account for deteriorating or improving profiles where prospective ratios meaningfully differ from average ratios.

Table 1

### EBITDA Margins And Return On Capital

	Below average	Average	Above average
EBITDA margin	<6%	6%-10%	>10%
Return on capital	<10%	10%-18%	>18%

### b) Volatility of profitability

58. We assess the volatility of profitability on a six-point scale from "1" (very low) to "6" (very high).
59. In accordance with our corporate criteria, we generally determine the volatility of profitability assessment using the standard error of regression (SER), provided we have at least seven years of historical annual data. We generally use nominal EBITDA as the metric to determine the SER for auto and truck manufacturers, but we may also use the EBITDA margin or ROC. In accordance with the corporate criteria, we may--provided certain conditions are met--adjust the SER assessment by up to two categories better (less volatile) or worse (more volatile). This may happen, for instance, if we believe that recurring acquisitions or divestitures or significant currency fluctuations mask the business' underlying volatility. 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

#### 1. Accounting characteristics

60. In assessing auto and commercial vehicle manufacturers' accounting characteristics, we use 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 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 better align 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 sectors, including this sector, are discussed in "Corporate Methodology: Ratios And Adjustments."

### E. Cash Flow/Leverage Analysis

61. In assessing an auto or commercial vehicle manufacturer's cash flow/leverage, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology") and, where applicable, takes into account captive finance operations (see "Methodology: The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers," Dec. 14, 2015). 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 predominantly cash flow-based credit ratios, which complement each other by focusing attention on the different levels of a company's cash flow waterfall in relation to its obligations.
62. Our forecasts typically consider third-party industry estimates for volume and market share, as well as information from automakers and truckmakers, but ultimately reflect our analytical assessment. We typically do not expect pricing adjustments to be more than the low-single-digits annually, but higher levels could result from inflation expectations and product rollouts. We consider management's guidance as a significant data source for capex, dividend policy, and new product rollouts, as well as geographical expansion.

#### 1. Core ratios

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

#### 2. Supplemental ratios

64. 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 typically use the following supplemental ratios for auto and commercial vehicle manufacturers:

- Debt service coverage ratios (FFO plus interest/cash interest or EBITDA/interest), particularly for those companies whose core ratios indicate an initial financial risk profile of "significant" or worse;
  - Free operating cash flow (FOCF)/debt as the preferred supplemental ratio when the core ratios indicate an initial financial risk profile of "intermediate" or better in the absence of one-off movements in the working capital or capex profile; and
  - For companies that return a large part of FOCF to shareholders through dividends, we may consider discretionary cash flow as the most relevant supplemental ratio.
65. Working capital cycles can significantly shape automakers' and truckmakers' cash flow-generation patterns. Unlike some other manufacturing businesses, automakers and truckmakers typically have negative working capital in the sense that payables exceed inventories and trade receivables. As a result, working capital is commonly a source of liquidity when volumes are growing, thus supporting cash flow generation and deleveraging potential in an upcycle. In a downcycle, on the other hand, declines in payables and excess inventories can bear very negatively on working capital needs. We determine working capital for automotive operations, excluding current liabilities and current assets held by any captive finance subsidiary.

## Part III: Rating Modifiers

### F. Diversification/Portfolio Effect

66. In assessing the diversification/portfolio effect on an auto or truck manufacturer, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology") in that we reserve the potential diversification benefit for companies whose portfolio spans different industries as defined by our industry classifications. We see limited diversification benefit from owning an auto parts or components subsidiary.

### G. Capital Structure

67. In assessing an auto or commercial vehicle manufacturer's capital structure, our analysis uses the same general methodology as with other corporate issuers (see "Corporate Methodology").

### H. Liquidity

68. In assessing an auto or commercial vehicle manufacturer's liquidity, our analysis uses the same general methodology as with other corporate issuers (see "Corporate Methodology") and, where applicable, takes into account captive finance operations (see "Methodology: The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers," Dec. 14, 2015).

### I. Financial Policy

69. In assessing an auto or commercial vehicle manufacturer's financial policy, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

## J. Management And Governance

70. In assessing an auto or commercial vehicle manufacturer's management and governance, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

## K. Comparable Ratings Analysis

71. In assessing the comparable ratings analysis for an auto or commercial vehicle manufacturer, our analysis uses the same methodology as with other corporate issuers (see "Corporate Methodology").

## L. Captive Finance

72. Where applicable, we take into account captive finance operations (see "Methodology: The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers," Dec. 14, 2015).

## 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 June 13, 2017, we added "a technological edge that can stimulate open collaboration with technology companies" in the last sentence of paragraph 20. In paragraph 28, we clarified that "we expect the total sales volumes and the proportion of hybrid cars and electric vehicles to increase over time" (the original language stated that "the proportion of hybrid cars and electric vehicles vs. gasoline-fueled engines may increase over time and the total sales for hybrid cars, if not electric vehicles, will likely rise over time"). We also added that "we note the emergence of new entrants, including from the technology sector" and that "we also note the emergence over the medium term of potentially disruptive trends of autonomous driving, electrification, and digitalization." In paragraphs 61 and 68, we added references to "Methodology: The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers," and we added Section L, "Captive Finance," and paragraph 72.
- Following our periodic review completed on June 13, 2018, we updated the contact information.
- On July 15, 2019, we republished this criteria article to make nonmaterial changes to criteria article references.
- On July 14, 2020, we republished this criteria article to make nonmaterial changes to criteria article references.

## RELATED CRITERIA AND RESEARCH

### Superseded Criteria

- Key Credit Factors: Criteria For Rating The Global Automaker Industry, Oct. 1, 2010

## Related Criteria

- Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Methodology: The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers, Dec. 14, 2015
- 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: Management And Governance Credit Factors For Corporate Entities, Nov. 13, 2012
- Principles Of Credit Ratings, Feb. 16, 2011

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.

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