Article Title: Guidance | Criteria | Corporates | General: Corporate Methodology Data: (EDITOR'S NOTE: —On Sept. 30, 2022, we republished this guidance document to update tables 4-8. See the "Revisions And Updates" section for details.) OVERVIEW AND SCOPE This document provides additional information and guidance related to our criteria, "Corporate Methodology," published Nov. 19, 2013. It is intended to be read in conjunction with those criteria. For an explanation of guidance documents, please see the description at the end of this article. GUIDANCE Sector-Specific Guidance Here we provide guidance on the factors we consider when applying the corporate methodology for the sectors in table 1. Key Publication Information This article is related to "Corporate Methodology," published Nov. 19, 2013. We may revise this guidance document from time to time. Table 1 Sector Descriptions SECTOR DESCRIPTION Aerospace and Defense Companies that derive a majority of their revenues from the design, manufacture, or repair of civil aircraft (i.e., jetliners, business jets, regional jets, general aviation aircraft, and helicopters) or supply related components or systems (including distributors of aircraft parts); design, manufacture, or service weapons systems or supply-related components; or provide defense-related services to government agencies or the military. Agribusiness and Commodity Foods Companies that derive the majority of their revenues either from the sourcing and distribution of crops and crop inputs, or from the processing, distribution, and marketing of commodity food products. These criteria apply globally to ratings on certain issuers in agricultural commodity merchandising (i.e., commodity trading) and processing (e.g., corn/wheat milling, soybean and sugar cane crushing, sugar refining, sweetener manufacturing, tobacco leaf merchants, etc.), feed and crop input distribution/wholesaling, and the commodity food subsectors of the consumer nondurables industry (including commodity meat production, and produce industries). Agricultural cooperatives Companies that derive a majority of their revenues from the marketing and processing of agricultural commodities on behalf of farmer cooperative owners (agricultural marketing cooperatives), supplying and distributing to customers and farmer member owners "crop inputs"--fertilizer, chemicals, and seeds, for example--and other farming supplies (agricultural supply cooperatives), as well as other marketing entities established solely for the purposes of marketing an agricultural commodity on behalf of farmers. Auto and commercial vehicle manufacturing Companies 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 original equipment manufacturers (OEMs). This sector also covers commercial vehicle manufacturing groups. Auto suppliers Companies that derive a majority of their revenues from the production, assembly, sale, and distribution of parts or services for the automotive or commercial vehicle manufacturing industry and their respective aftermarkets. Asset managers Companies that derive a majority of their revenues from management and performance fees for managing third-party money or assets on behalf of retail or institutional investors. Branded nondurables Entities that derive a majority of their revenues from manufacturing, marketing, and selling branded consumer nondurable products as well as private-label nondurable consumer products manufacturers. This includes apparel, accessory stores, and related products; beverages, including spirits and soft drink bottlers; food and kindred products; personal care and cosmetics; household products; tobacco products (excluding tobacco leaf merchants/suppliers); and miscellaneous and diversified consumer products. Building materials Entities that derive a majority of their revenue from the manufacture, distribution, and sales of building materials and products. We define "building materials" as construction products such as cement, bricks, concrete, and aggregates (i.e., sand, rock, and gravel). We define "building products" as finished or semi-finished goods that require additional labor or installation, such as flat and specialty glass, wallboard, roofing materials, plumbing and lighting fixtures, doors, windows, tools, hardware, HVAC (heating, ventilation, and air conditioning) equipment, and other products used in construction, repair, maintenance, and remodeling of buildings. Business and consumer services Entities that derive a majority of their earnings by offering businesses a more cost effective way to carry out their noncore activities or by providing consumers with a variety of services. These include: consumer services, companies primarily providing services directly to consumers; distribution services, whose primary function is to distribute products; facilities services, whose primary function is to operate and/or maintain the facilities/premises of other businesses and/or provide staff to carry out these functions; general support services and professional services, whose primary function is to provide

complex services for businesses. Capital goods Entities that derive a majority of their revenues from manufacturing and/or servicing industrial equipment. This includes manufacturers of heavy and light industrial equipment, machinery, industrial components, and systems, as well as providers of related services, such as construction equipment rental companies or industrial distributors. Commodity chemicals Entities that derive a majority of their revenue from the production of commodity chemicals, including producers of petrochemicals, inorganic chemicals, fertilizers and other agricultural chemicals, and numerous other commodity chemicals. Consumer durables Entities that derive a majority of their revenue from the manufacture and marketing of diversified and miscellaneous consumer products, including home appliances, furniture, home improvement products and fixtures, small appliances, sporting equipment and other durable goods. Containers and packaging Entities that derive the majority of their revenues 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. Contract drilling Entities that derive the majority of their revenues by leasing drilling rigs to oil and natural gas exploration and production (E&P;) companies. Sector participants provide a variety of onshore and offshore drilling rigs that are vital to finding and extracting crude oil and natural gas resources. Engineering and construction Entities that derive a majority of their revenues from engineering and design, construction, and maintenance work. Environmental services Entities that derive a majority of their revenue from the collection, treatment, transportation, and disposal of various waste streams. Financial Market Infrastructure Companies Principally exchanges, clearinghouses, central security depositories (CSDs), and payment networks that process and clear credit or debit card transactions and cash payments. Financial Services Finance Companies Finance companies where the greatest risks relate more to their ability to generate cash flow than to the amount of capital they may need to withstand credit losses, including consumer finance companies, originators and servicers, auto fleet services companies, real estate services, money transaction processors, and other financial services finance companies. Forest and paper products Entities that derive a majority of their revenues from harvesting timber or converting wood or recycled cellulose fiber into products that are then sold as pulp, paper, paper-based packaging, or converted wood products. Health care equipment Entities that derive a majority of their revenues from their operations in the global health care equipment industry: companies that develop, manufacture, and market medical, surgical and dental devices and instruments, including consumable items, implantable devices, conventional supplies (e.g., gowns, gloves, bandages, syringes) and capital equipment used by health care providers; contract manufacturers of health care equipment; life science companies that develop, manufacture, and market laboratory equipment, instruments, reagents, and diagnostic tests. Health care services Entities that derive a majority of their revenues from for-profit health care services, specifically for-profit companies that provide health care to patients. The industry includes the following subsectors: hospitals; ambulatory surgery centers; skilled nursing facilities; outpatient facilities (physical rehabilitation, etc.); psychiatric hospitals, substance abuse rehab facilities, other behavioral health care services; home health care services; urgent care clinics; hospice services; dialysis services; dental services; laboratory and diagnostic services, including imaging; radiation oncology; ambulance and other medical transport services; other human health care services; and veterinarian services. Media and entertainment Entities that derive a majority of their revenues from operating as ad agencies and marketing services companies, ad-supported online content platforms, broadcast networks, cable TV and over-the-top (OTT) networks, data publishers, e-commerce service providers, educational publishers, film and TV programming production companies, local TV stations, motion picture exhibitors, music publishing and recording companies, newspapers/magazines, outdoor advertising companies, printing companies, and radio stations. Metals production and processing Entities that derive a majority of their revenues from the manufacturing and distribution of metals, notably steel and aluminum. We could also include smelters, refiners, or processors with some mining operations. These companies employ a number of business models and marketing strategies and include integrated producers, mini-mill/scrap conversion, and processors and distributors. This sector was previously named metals and mining downstream. These two names may be used interchangeably. Mining Entities that derive a majority of their revenues from the exploration and production (mined extraction) of metals and minerals, which

could include supporting smelting and refining operations. This sector was previously named metals and mining upstream. These two names may be used interchangeably. Oil and gas exploration and production Entities that derive a majority of their revenues from the development and production associated with oil and natural gas hydrocarbons, including integrated oil and gas companies. These integrated companies have, in addition to E&P; (upstream) operations, other significant operations such as refining and marketing (downstream) businesses, and midstream businesses such as transportation; storage; wholesale marketing; and trading of crude oil, natural gas, and refined products. Oilfield services and equipment Entities that derive a majority of their revenue from the capital spending of the E&P; industry, which, in turn, largely depends on expectations for crude oil and natural gas prices. This includes hydraulic fracturing services and equipment, well maintenance and stimulation, manufacture of well servicing and drilling equipment, seismic services, and compression service and equipment. Railroad and package express Entities that derive a majority of their revenue from freight transportation, package express companies, and logistics companies. In the context of these criteria, we are defining logistics companies as those that provide services that support the movement of goods through the supply chain (e.g. acting as an intermediary in arranging transportation on behalf of customers, or warehousing and inventory management). Retail and restaurants Entities that derive a majority of their revenue from selling goods or services directly to the individual consumer through stores, catalogues, or online operations--or a combination of these channels. We include restaurants, automotive retailers, and grocery wholesalers in this sector given that the fundamentals of operating these businesses are largely the same as general retailing with similar unit economics. Specialty chemicals Entities that derive a majority of their revenue from the production of specialty chemicals, including producers of industrial gases, coatings, advanced materials, and numerous other specialty chemicals. Technology hardware and semiconductors Entities that derive a majority of their revenue from the sale of technology hardware and semiconductors. This includes manufacturers of semiconductors and semiconductor equipment, computer hardware, storage, and peripherals, electronic components and equipment, office electronics, consumer electronics, communications equipment, technology distributors, and electronic manufacturing services, which currently consists of mostly outsourced manufacturing providers. Technology software and services Entities that derive a majority of their revenue from information technology services and software. This includes commercial outsourcing and project services, transaction processing, and enterprise and consumer software providers. Transportation cyclical Entities that derive a majority of their revenue from operating airlines (including heavy air freight), shipping companies, trucking companies, and certain miscellaneous other transportation companies, such as bus companies. Transportation Infrastructure Entities that derive a majority of their earnings from the commercial operation of airports, marine ports, toll road networks, railways (including state owned freight railroads), and other transportation infrastructure assets and services, such as navigable waterways and air and marine traffic controllers. Level of profitability We most commonly measure profitability using return on capital and EBITDA margins, but we may also use sector-specific ratios. For most sectors, we generally use EBITDA margin as the primary indicator of profitability, and return on capital as a supplementary indicator. For sectors where this isn't the case, or where we also consider sector-specific ratios, the analytical approach is listed in the relevant industry section of this guidance document. We assess level of profitability on a three-point scale: above average, average, and below average. We may use a supplemental indicator to refine our assessment when a primary metric is close to the thresholds for below average or above average. For instance, if a company's EBITDA margin is at the high end of the range for average but its return on capital is comfortably in the above average range, we could assess its level of profitability as above average. In some cases, the application of local accounting rules (for non-U.S. generally accepted accounting principles [GAAP] or non-international financial reporting standards [IFRS] reporting companies) may warrant using different thresholds to account for financial reporting differences. We may also consider other reporting factors in our assessment of profitability. For instance, in certain sectors or regions, companies may either report revenue on a gross or net basis, and the difference in revenue reporting can meaningfully affect EBITDA margins. We seek to assess profitability based on the revenue basis that we view as more reflective of the company's business economics and, thus, a better measure of profitability. Given cyclical fluctuations and other dynamic factors, some sectors have no fixed ranges

for these financial measures listed in table 2 because they may not be useful on a global basis as benchmarks over the course of a cycle. In the absence of numerical guidance, we compare a company with its industry peers. When establishing numerical guidance for assessing profitability within an industry or subsector, we typically consider the distribution of profitability measures across rated issuers in the sector. Depending on the shape of the distribution, we choose logical breakpoints between above-average, average, and below-average profitability. For instance, for a distribution that resembles a normal curve, we typically assess the top quartile of the relevant profitability indicator to be above average, the two middle quartiles average, and the bottom quartile below average. For some subsectors, there might be a bias for profitability above average or below average based on their own strengths and weaknesses. As we state in the criteria, we may adjust our calculation of the profitability indicator to consider different forecast horizons and deteriorating or improving trends. In addition, when the profitability indicator is close to the boundary of a threshold, we may decide to assess profitability in either bucket depending on our view of trends. For example, if the range for average was 8%-12% and we had a company whose profitability was 12.1%, we may decide to score profitability as average rather than above average. We may consider additional factors if the initial assessment doesn't reflect considerations that would otherwise indicate higher or lower profitability. For instance, we consider a company's cyclicality and position in the cycle or product mix, which could distort its EBITDA margin relative to the benchmark ranges. We could consider longer or shorter historical results or forecasts, depending on such factors as availability of financial statements, transformational events (such as mergers or acquisitions), and cyclical distortion (such as peak or bottom of the cycle measures that we do not deem to fully represent the company's profitability). We also take into account improving or deteriorating trends in profitability ratios in our assessment. Table 2 EBITDA Margin Thresholds (%) BELOW AVERAGE AVERAGE ABOVE AVERAGE Aerospace and Defense <10 10-18 >18 AGRIBUSINESS AND COMMODITY FOODS Grain processors, merchandisers, and crop input wholesalers <3 3-5 >5 Commodity food ingredient companies <12 12-15 >15 Meat and other non-dairy animal protein processors <5 5-10 >10 Sugarcane crushers and processors <32 32-42 >42 Auto and Commercial Vehicle Manufacturing <6 6-10 >10 Auto Suppliers <9 9-15 >15 BRANDED NONDURABLES Apparel <10 10-15 >15 Nonalcoholic Beverage and Packaged Food <10 10-20 >20 Personal Care and Household Products <15 15-25 >25 Tobacco and alcoholic beverage <15 15-30 >30 BUILDING MATERIALS AND PRODUCTS General building materials and products providers* <9 9-18 >18 Building materials and products distributors <5 5-9 >9 Cement manufacturers <15 15-25 >25 Window and door manufacturers <5 5-10 >10 Aggregates providers <10 10-20 >20 BUSINESS AND CONSUMER SERVICES Consumer services <18 18-24 >24 Distribution services <5 5-9 >9 Facilities services <10 10-20 >20 General support services <15 15-25 >25 Professional services <20 20-30 >30 CAPITAL GOODS Manufacturers <11 11-18 >18 Equipment rental providers <30 30-40 >40 Industrial Distributors <5 5-9 >9 Commodity chemicals <9 9-17 >17 CONSUMER DURABLES Diversified durables <8 8-14 >14 Home appliances <6 6-9 >9 Containers and packaging <13 13-17 >17 Engineering and construction <6 6-11 >11 Environmental services <12 12-24 >24 Forest and paper products <11 11-19 >19 FINANCIAL SERVICES Asset managers <20 20-35 >35 Financial market infrastructure companies <43 43-66 >66 Financial services finance companies <15 15-35 >35 Health care equipment <22 22-35 >35 Health care services <15 15-25 >25 MEDIA AND ENTERTAINMENT Ad agencies <15 15-20 >20 Ad-supported online content platforms <20 20-30 >30 Broadcast networks <15 15-30 >30 Data publishing <20 20-30 >30 E-commerce <15 15-30 >30 Educational publishing <15 15-30 >30 Film and TV programming production <12 >12 - Local TV Stations/Cable TV and OTT networks <20 20-35 >35 Marketing services/Miscellaneous <15 15-30 >30 Motion picture exhibitors <30 30-40 >40 Outdoor <20 20-40 >40 Printing/Newspapers/Magazines <15 >15 - Radio stations/Music publishing and recording <15 15-30 >30 METALS PRODUCTION AND PROCESSING Integrated steelmakers/mini-mills, and aluminum smelters <8 8-12 >12 Metal processors/distributors <4 4-8 >8 Mining** <15 15-25 >25 Specialty chemicals <12 12-20 >20 RETAIL AND RESTAURANTS Department stores and specialty retailers <10 10-16 >16 Discounter/Food retailers/drugstores/C-stores <5 5-10 >10 Restaurants <14 14-23 >23 Auto retailers <3.5 3.5-4.0 >4 TECHNOLOGY HARDWARE AND SEMICONDUCTORS Semiconductor equipment manufacturers <15 15-25 >25 Semiconductors <20 20-30 >30 Consumer electronics <7 7-12 >12 Technology distributors <3 3-6 >6 Communications

equipment <10 10-20 >20 Electronic manufacturing services <4 4-8 >8 Computer hardware, storage and peripherals, electronic components and equipment, and office electronics <12 12-18 >18 TECHNOLOGY SOFTWARE AND SERVICES Commercial IT services <10 10-15 >15 Transaction processors <20 20-30 >30 Enterprise and consumer software <25 25-30 >30 Transportation cyclical Shipping <10 10-30 >30 Trucking <8 8-15 >15 Airlines <8 8-15 >15 Transportation infrastructure <30 30-55 >55 * Includes manufacturers/producers of roofing materials; heating and ventilation equipment; hand, garden, and power tools; wallboard; construction laminates; plumbing and bath fixtures; glass and fiberglass building products; cabinetry; and steel building components. **Percentage through the cycle. Table 3 Return On Capital Thresholds (%) BELOW AVERAGE AVERAGE ABOVE AVERAGE Auto and commercial vehicle manufacturing <10 10-18 >18 Auto suppliers <8 8-18 >18 Capital goods <10 10-18 >18 Commodity chemicals <8 8-18 >18 Consumer durables <9 9-15 >15 Containers and packaging <9 9-13 >13 Engineering and construction <9 9-18 >18 Environmental services <6 6-10 >10 Forest and paper products <5 5-12 >12 Grain processors and merchandisers* <9 9-15 >15 Metals production and processing <5 5-9 >9 Specialty chemicals <8 8-18 >18 Technology hardware and semiconductors <8 8-12 >12 TECHNOLOGY SOFTWARE AND SERVICES Commercial IT services <9 9-15 >15 Transaction processors <15 15-20 >20 Enterprise and consumer software <10 10-15 >15 Transportation cyclical <4 4-10 >10 *For grain processors and merchandisers, we generally calculate return on capital based on a three-year average. Volatility of profitability As stated in the criteria, we base the volatility of profitability on the standard error of the regression (SER) for a company's historical EBITDA, EBITDA margins, or return on capital. We have established industry-specific SER parameters for companies within each sector using the seven years of data as of December 2020 (see tables 4-8). These tables are based on global data covering 3,400 sets of rated company financials across industries as defined by S&P; Global Ratings. We may refresh these tables from time to time. We evaluate a company's SER in the context of its industry group. For most industries, we typically select one of the three measures (historical EBITDA, EBITDA margins, or return on capital) as the most appropriate for determining the SER and volatility of profitability assessment, although we may also use other measures. In certain circumstances, the SER derived from historical information may understate--or overstate--expected future volatility, and we may adjust the assessment downward or upward. For example, we may adjust our assessment of volatility of profitability based on large profitability distortions caused by exceptional events (e.g. pandemics and natural disasters). We typically use EBITDA margin as the metric to determine the SER for the following sectors: Auto and commercial vehicle manufacturing, Auto suppliers, Health care equipment, Health care services, Media and entertainment, Oilfield services and equipment, Producers of finished goods (building materials and products), Railroads and package express companies, Retail and restaurants, Technology hardware and semiconductors, and Technology software and services. We typically use nominal EBITDA as the metric to determine the SER for the following sectors: Aerospace and defense, Agribusiness and commodity food companies, Agricultural cooperatives, Branded nondurables, Building materials and products (except finished goods), Business and consumer services, Capital goods, Commodity chemicals, Consumer durables, Containers and packaging, Contract drilling, Engineering and construction, Environmental services, Forest and paper products, Metals production and processing, Mining, Specialty chemicals, and Transportation infrastructure. We typically use return on capital as the metric to determine the SER for the following sector: Oil and gas exploration and production. Table 4 SER Calibration By Industry Based On EBITDA --VOLATILITY OF PROFITABILITY ASSESSMENT*-- 1 2 3 4 5 6 Aerospace and defense =<6% >6%-9% >9%-18% >18%-26% >26%-55% >55% Agribusiness and commodity foods =<8% >8%-12% >12%-17% >17%-23% >23%-36% >36% Agricultural cooperatives =<8% >8%-12% >12%-17% >17%-23% >23%-36% >36% Auto OEM =<9% >9%-15% >15%-23% >23%-34% >34%-117% >117% Auto suppliers =<10% >10%-16% >16%-22% >22%-28% >28%-45% >45% Branded nondurables =<5% >5%-8% >8%-14% >14%-20% >20%-34% >34% Building materials =<6% >6%-7% >7%-11% >11%-16% >16%-28% >28% Business and consumer services =<6% >6%-11% >11%-16% >16%-22% >22%-43% >43% Capital goods =<7% >7%-11% >11%-16% >16%-23% >23%-38% >38% Commodity chemicals =<12% >12%-19% >19%-25% >25%-31% >31%-45% >45% Consumer durables =<9% >9%-15% >15%-22% >22%-29% >29%-37% >37% Containers and packaging =<5%

>5%-8% >8%-11% >11%-15% >15%-27% >27% Engineering and construction =<6% >6%-15% >15%-20% >20%-28% >28%-46% >46% Environmental services =<4% >4%-8% >8%-11% >11%-19% >19%-30% >30% Forest and paper products =<10% >10%-18% >18%-22% >22%-28% >28%-45% >45% Health care equipment =<7% >7%-11% >11%-14% >14%-19% >19%-28% >28% Health care services =<5% >5%-11% >11%-20% >20%-26% >26%-47% >47% Homebuilders and developers =<11% >11%-16% >16%-21% >21%-30% >30%-58% >58% Leisure and sports =<15% >15%-24% >24%-35% >35%-55% >55%-92% >92% Media and entertainment =<7% >7%-13% >13%-19% >19%-30% >30%-46% >46% Metals and mining downstream =<12% >12%-19% >19%-26% >26%-38% >38%-81% >81% Metals and mining upstream =<11% >11%-22% >22%-27% >27%-39% >39%-61% >61% Midstream energy =<5% >5%-8% >8%-14% >14%-19% >19%-25% >25% Oil and gas drilling, equipment, and services =<16% >16%-33% >33%-37% >37%-55% >55%-109% >109% Oil and gas integrated, exploration and production =<15% >15%-25% >25%-33% >33%-41% >41%-53% >53% Oil and gas refining and marketing =<18% >18%-36% >36%-53% >53%-79% >79%-99% >99% Pharmaceuticals =<6% >6%-9% >9%-14% >14%-22% >22%-42% >42% Railroads and package express =<4% >4%-7% >7%-9% >9%-14% >14%-26% >26% Real estate investment trusts =<3% >3%-6% >6%-9% >9%-13% >13%-22% >22% Regulated utilities =<3% >3%-5% >5%-7% >7%-10% >10%-20% >20% Retail and restaurants =<5% >5%-9% >9%-13% >13%-20% >20%-35% >35% Specialty chemicals =<6% >6%-11% >11%-17% >17%-20% >20%-41% >41% Technology - hardware and semiconductors =<9% >9%-11% >11%-18% >18%-26% >26%-49% >49% Technology - software and services =<5% >5%-10% >10%-15% >15%-27% >27%-55% >55% Telecom and cable =<3% >3%-5% >5%-8% >8%-12% >12%-24% >24% Transportation cyclical =<10% >10%-19% >19%-36% >36%-58% >58%-75% >75% Transportation infrastructure =<6% >6%-11% >11%-19% >19%-30% >30%-53% >53% Unregulated power and gas =<5% >5%-9% >9%-13% >13%-20% >20%-32% >32% Overall =<5% >5%-9% >9%-15% >15%-24% >24%-45% >45% *The data ranges include the values up to and including the upper bound. As an example, for a range of 5%-9%, a value of 5% is excluded, while a value of 9% is included; the numbers are rounded to the nearest whole number for presentation purposes. Table 5 SER Calibration By Industry Based On EBITDA Margin --VOLATILITY OF PROFITABILITY ASSESSMENT*-- Aerospace and defense =<4% >4%-8% >8%-14% >14%-20% >20%-57% >57% Agribusiness and commodity foods =<7% >7%-10% >10%-14% >14%-18% >18%-30% >30% Agricultural cooperatives =<7% >7%-10% >10%-14% >14%-18% >18%-30% >30% Auto OEM =<6% >6%-14% >14%-18% >18%-30% >30%-129% >129% Auto suppliers =<7% >7%-10% >10%-13% >13%-19% >19%-34% >34% Branded nondurables =<3% >3%-6% >6%-9% >9%-15% >15%-28% >28% Building materials =<4% >4%-6% >6%-9% >9%-13% >13%-23% >23% Business and consumer services =<4% >4%-7% >7%-11% >11%-17% >17%-33% >33% Capital goods =<4% >4%-7% >7%-11% >11%-17% >17%-30% >30% Commodity chemicals =<9% >9%-14% >14%-20% >20%-25% >25%-40% >40% Consumer durables =<7% >7%-11% >11%-14% >14%-21% >21%-37% >37% Containers and packaging =<4% >4%-6% >6%-9% >9%-12% >12%-21% >21% Engineering and construction =<5% >5%-8% >8%-14% >14%-22% >22%-40% >40% Environmental services =<4% >4%-5% >5%-10% >10%-15% >15%-21% >21% Forest and paper products =<9% >9%-12% >12%-17% >17%-20% >20%-41% >41% Health care equipment =<5% >5%-7% >7%-8% >8%-11% >11%-16% >16% Health care services =<4% >4%-8% >8%-14% >14%-21% >21%-35% >35% Homebuilders and developers =<6% >6%-11% >11%-15% >15%-22% >22%-44% >44% Leisure and sports =<7% >7%-13% >13%-26% >26%-53% >53%-169% >169% Media and entertainment =<5% >5%-8% >8%-14% >14%-20% >20%-43% >43% Metals and mining downstream =<11% >11%-15% >15%-21% >21%-35% >35%-69% >69% Metals and mining upstream =<9% >9%-14% >14%-18% >18%-27% >27%-48% >48% Midstream energy =<3% >3%-6% >6%-10% >10%-16% >16%-32% >32% Oil and gas drilling, equipment, and services =<11% >11%-15% >15%-23% >23%-34% >34%-102% >102% Oil and gas integrated, exploration and production =<5% >5%-10% >10%-14% >14%-20% >20%-32% >32% Oil and gas refining and marketing =<16% >16%-36% >36%-52% >52%-81% >81%-101% >101% Pharmaceuticals =<5% >5%-7% >7%-11% >11%-16% >16%-33% >33% Railroads and package express =<4% >4%-6% >6%-8% >8%-12% >12%-19% >19% Real estate investment trusts =<1% >1%-2% >2%-4% >4%-7% >7%-10% >10% Regulated utilities =<3% >3%-5% >5%-7% >7%-10% >10%-18% >18% Retail and

restaurants =<4% >4%-7% >7%-11% >11%-16% >16%-30% >30% Specialty chemicals =<5% >5%-8% >8%-10% >10%-14% >14%-23% >23% Technology - hardware and semiconductors =<4% >4%-8% >8%-11% >11%-18% >18%-35% >35% Technology - software and services =<4% >4%-7% >7%-12% >12%-19% >19%-44% >44% Telecom and cable =<2% >2%-3% >3%-5% >5%-7% >7%-14% >14% Transportation cyclical =<7% >7%-16% >16%-27% >27%-59% >59%-95% >95% Transportation infrastructure =<2% >2%-5% >5%-12% >12%-23% >23%-53% >53% Unregulated power and gas =<5% >5%-8% >8%-12% >12%-19% >19%-30% >30% Overall =<3% >3%-7% >7%-11% >11%-17% >17%-36% >36% *The data ranges include the values up to and including the upper bound. As an example, for a range of 5%-9%, a value of 5% is excluded, while a value of 9% is included; the numbers are rounded to the nearest whole number for presentation purposes. Table 6 SER Calibration By Industry Based On Return On Capital --VOLATILITY OF PROFITABILITY ASSESSMENT*-- 1 2 3 4 5 6 Aerospace and defense =<9% >9%-18% >18%-33% >33%-60% >60%-154% >154% Agribusiness and commodity foods =<12% >12%-17% >17%-25% >25%-36% >36%-66% >66% Agricultural cooperatives =<12% >12%-17% >17%-25% >25%-36% >36%-66% >66% Auto OEM =<20% >20%-23% >23%-39% >39%-69% >69%-178% >178% Auto suppliers =<13% >13%-21% >21%-30% >30%-43% >43%-106% >106% Branded nondurables =<8% >8%-14% >14%-22% >22%-39% >39%-92% >92% Building materials =<9% >9%-16% >16%-23% >23%-38% >38%-80% >80% Business and consumer services =<12% >12%-26% >26%-44% >44%-73% >73%-253% >253% Capital goods =<10% >10%-15% >15%-29% >29%-54% >54%-207% >207% Commodity chemicals =<22% >22%-32% >32%-42% >42%-60% >60%-92% >92% Consumer durables =<21% >21%-30% >30%-42% >42%-58% >58%-207% >207% Containers and packaging =<11% >11%-19% >19%-31% >31%-45% >45%-164% >164% Engineering and construction =<9% >9%-18% >18%-32% >32%-43% >43%-148% >148% Environmental services =<11% >11%-16% >16%-27% >27%-36% >36%-128% >128% Forest and paper products =<20% >20%-30% >30%-41% >41%-51% >51%-132% >132% Health care equipment =<13% >13%-20% >20%-30% >30%-41% >41%-98% >98% Health care services =<8% >8%-23% >23%-34% >34%-65% >65%-192% >192% Homebuilders and developers =<10% >10%-15% >15%-22% >22%-28% >28%-61% >61% Leisure and sports =<23% >23%-39% >39%-64% >64%-119% >119%-205% >205% Media and entertainment =<11% >11%-22% >22%-44% >44%-82% >82%-165% >165% Metals and mining downstream =<19% >19%-36% >36%-54% >54%-103% >103%-379% >379% Metals and mining upstream =<21% >21%-33% >33%-54% >54%-96% >96%-233% >233% Midstream energy =<5% >5%-11% >11%-19% >19%-28% >28%-90% >90% Oil and gas drilling, equipment, and services =<32% >32%-69% >69%-169% >169%-230% >230%-453% >453% Oil and gas integrated, exploration and production =<25% >25%-59% >59%-94% >94%-157% >157%-503% >503% Oil and gas refining and marketing =<41% >41%-89% >89%-107% >107%-133% >133%-189% >189% Pharmaceuticals =<10% >10%-18% >18%-30% >30%-48% >48%-174% >174% Railroads and package express =<6% >6%-10% >10%-17% >17%-29% >29%-72% >72% Real estate investment trusts =<4% >4%-7% >7%-12% >12%-21% >21%-40% >40% Regulated utilities =<5% >5%-7% >7%-11% >11%-17% >17%-36% >36% Retail and restaurants =<10% >10%-17% >17%-26% >26%-46% >46%-131% >131% Specialty chemicals =<12% >12%-18% >18%-29% >29%-40% >40%-132% >132% Technology - hardware and semiconductors =<13% >13%-26% >26%-38% >38%-66% >66%-194% >194% Technology - software and services =<12% >12%-29% >29%-51% >51%-115% >115%-337% >337% Telecom and cable =<7% >7%-13% >13%-20% >20%-34% >34%-92% >92% Transportation cyclical =<15% >15%-48% >48%-73% >73%-129% >129%-223% >223% Transportation infrastructure =<10% >10%-18% >18%-33% >33%-50% >50%-113% >113% Unregulated power and gas =<11% >11%-19% >19%-31% >31%-44% >44%-81% >81% Overall =<8% >8%-16% >16%-28% >28%-51% >51%-151% >151% *The data ranges include the values up to and including the upper bound. As an example, for a range of 5%-9%, a value of 5% is excluded, while a value of 9% is included; the numbers are rounded to the nearest whole number for presentation purposes. Table 7 SER Calibration By Industry Based On EBITDA For Financial Services Sectors --VOLATILITY OF PROFITABILITY ASSESSMENT*-- 1 2 3 4 5 6 Asset managers =<6% >6%-8% >8%-11% >11%-13% >13%-17% >17% Financial services finance companies =<14% >14%-17% >17%-21% >21%-28% >28%-76% >76% *The data ranges include the values up to and including the upper bound. As an example, for a range of

5%-9%, a value of 5% is excluded, while a value of 9% is included; the numbers are rounded to the nearest whole number for presentation purposes. Table 8 SER Calibration By Industry Based On EBITDA Margin For Financial Services Sectors --VOLATILITY OF PROFITABILITY ASSESSMENT*-- 1 2 3 4 5 6 Asset managers =<3% >3%-4% >4%-6% >6%-10% >10%-12% >12% Financial services finance companies =<6% >6%-12% >12%-17% >17%-23% >23%-48% >48% * The data ranges include the values up to and including the upper bound. As an example, for a range of 5%-9%, a value of 5% is excluded, while a value of 9% is included; the numbers are rounded to the nearest whole number for presentation purposes. Determining the financial risk profile assessment When determining the financial risk profile assessment, we use a specific ratio benchmark table (see tables 17, 18, and 19 in Corporate Methodology). We choose the appropriate benchmark table based on the company's fit into one of the sector descriptions in Table 1 of this guidance or in the scope section of the relevant Key Credit Factor article. The choice of which specific core and supplemental ratios to apply is also governed by the same industry sector, as determined above, even if the company is engaged in several industry sectors such that its business risk profile assessment reflects a blended industry approach. Guidelines as to which specific core and supplemental ratios to apply for each industry sector can be found in this Guidance or in the relevant Key Credit Factors article. Application of the Comparable Rating Analysis (CRA) modifier The CRA is used to fine tune, if needed, the stand-alone credit profile (SACP) by one notch to reflect our aggregated view of an entity's creditworthiness on a stand-alone basis. Most credit factors analyzed in deriving the SACP are based, to some extent, on a relative analysis with peers, but certain key analytical factors may warrant a higher or lower weighting when aggregating our view of the relative strength of an entity's SACP. The CRA is also used to reflect contingent risks that may not be fully captured in our base case for business or financial risk analysis. Our application of the CRA modifier does not always require an explicit peer comparison, but relative ranking is at the core of our analysis--both when analyzing individual rating factors and when considering the holistic view of an entity's stand-alone credit risk profile. This would be the case, for example, when we look at business or financial risk profile assessments or one of the rating modifiers, within the ranges provided by our criteria. For example, if an issuer is at or near the cusp of a range for cash flow leverage analysis, but falls into the riskier category, and we expect the entity to remain at the "less risky end" of the financial risk profile assessment, we may conclude that the issuer is well positioned within the range of that particular assessment even without specifically comparing the entity to peers. As long as that benefit is not offset by a weaker position within the business risk profile assessment, for example, we may view the issuer's credit characteristics, in aggregate, as more positive, and thus apply a positive comparable ratings modifier. When we do look at peers in the application of CRA, we typically choose entities whose SACPs are similar to the entity we are evaluating. For example, if the issuer we are evaluating has an anchor of 'b+' and we've applied no notching using the other five rating modifiers, we would choose peers with a 'b+' SACP for comparison. If the recommendation is for a negative CRA, we might also choose peers with a 'b' SACP for comparison. Such peers would generally be included in the same peer analysis section that we use for assessing competitive position and profitability, for example. Use of CRA in ratings surveillance We use the CRA modifier to reflect a holistic view of the issuer's credit fundamentals. Given that those fundamentals and their impact on the analysis of the SACP evolve over time, it is entirely possible that the use of the CRA modifier can vary during the life of the credit. That is, in our rating committees we may review the application of the CRA modifier incorporating the issuer's new circumstances as a whole, its relative performance, changing or evolving circumstances, etc. As a result, prior usage and rationale of the CRA modifier for a given issuer, in any direction, is not necessarily an indicator of the likelihood of future applications, their direction, or their specific rationale. Using CRA to incorporate other factors not already covered or not fully captured in the anchor, or via the other rating modifiers Our criteria cover what we view as key drivers of credit risk, that is, elements that are common drivers of risk for most issuers. However, companies are not all created equal. Some may present unique characteristics, or face special circumstances that happen infrequently, thus subjecting them to risks or advantages that are very specific to them. We may apply a positive or negative comparable rating modifier to reflect the expected impact of such elements on the credit quality of the company when: The criteria do not incorporate provisions to factor in such positive or negative characteristics. While such

elements are incorporated in the criteria framework, they are more significant than usual for a particular issuer, and as such, the criteria do not give them sufficient weight to properly reflect their impact on credit risk. However, we may not use a CRA modifier of positive or negative if the benefit or detriment to the credit quality of the entity was already fully incorporated in the anchor or satisfactorily reflected using the other five rating modifiers. CRA application examples: The following are some more common examples that we typically expect could lead to a positive or negative assessment using CRA: Short operating track record. For newly formed companies or companies that have experienced transformational events, such as a significant acquisition, a lack of an established track record of operating and financial performance could lead to a negative assessment until such a track record is established. Entities in transition. A company in the midst of changes that we anticipate will strengthen or weaken its creditworthiness and that are not already fully captured elsewhere in the criteria could receive a positive or negative assessment. Such a transition could occur following major divestitures or acquisitions, or during a significant overhaul of its strategy, business, or financial structure. Industry or macroeconomic trends. When industry or macroeconomic trends indicate a strengthening or weakening of the company's financial condition that is not already fully captured elsewhere in the criteria, the company could receive a positive or negative assessment, respectively. Unusual funding structures. A company with exceptional financial resources that the criteria do not capture in the traditional ratio or liquidity analysis, or in capital structure analysis, could receive a positive assessment. Contingent risk exposures. How well (or poorly) a company identifies, manages, and reserves for contingent risk exposures that can arise if guarantees are called, derivative contract break clauses are activated, or substantial lawsuits are lost could lead to a negative assessment. ESG credit risks or benefits. To the extent that some significant ESG considerations are not sufficiently reflected elsewhere in the criteria framework, we can reflect their more significant rating impact by applying a negative or positive assessment, as the case may be. Consolidated holding structures that contain key partially owned subsidiaries. Some conglomerates that operate via partially held (yet controlled) subsidiaries may display consolidated financial ratios that are skewed, for better or for worse. In such cases, we may reflect this by applying a positive or negative assessment, as the case may be. Alternatively, we apply a neutral CRA when we think that all the key credit factors in our analysis of the company have been adequately reflected in the anchor and through the application of the other rating modifiers. Aerospace and Defense Country Risk We generally determine exposure to country risk using revenues, as 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 it derives its revenue from, and if those assets are not easily movable. Competitive position group profile (CPGP) The CPGP assigned to the majority of A&D; issuers that we rate is services and product focus. Many A&D; companies manufacture products that are highly specialized and not very capital intensive, particularly defense contractors, who generally spend less than 3% of sales on capital expenditures. We may assign the capital or asset focus CPGP to those suppliers that provide more commoditized products or are more capital intensive, such as aerostructures, materials, forgings, or castings, where operating efficiency is a more important determinant of competitive position. Competitive Advantage In assessing the competitive advantage of an A&D; company we consider its: Business strategy and market position; Product or service range; Technological capabilities; Track record of program execution; and Position in the supply chain. Commercial Aerospace The competitive dynamics vary for commercial aerospace companies depending on their position in the supply chain. Original equipment manufacturers (OEMs), the companies that design, assemble, and market complete aircraft, and tier 1 suppliers, those that produce large assemblies or components, generally face a limited number of competitors. For tier 2 and lower suppliers, which produce smaller assemblies or basic parts or components, there are generally many more competitors. In evaluating a commercial aerospace company's strategic positioning, we consider what market segments it participates in, the relative size and attractiveness of each segment, the company's market share in each segment, and if that share is growing, declining, or staying the same, as well as product development plans. Market segments include not only the major

ones--jetliners, regional jets, business jets, and helicopters--but subsegments within each, such as widebody and narrowbody aircraft within jetliners and small-cabin and large-cabin business jets. For suppliers it is difficult to ascertain market shares, so we consider if they have content on popular aircraft or engine programs. We also consider whether the supplier has design and engineering capabilities and is able to retain the intellectual property rights or is doing "build to print" work, where the OEM designs the part and retains the intellectual property rights and the supplier just builds it. The latter makes it easier for the OEM to switch suppliers, although the new supplier would still have to be qualified by the OEM and, in some cases, by the national aviation authorities to be able to make the part. For jetliner OEMs, we also consider whether they have competitive products in each size and range category in order to offer airlines a full family of aircraft to match their route network. This is particularly important for business jet OEMs, where customers tend to have a large degree of brand loyalty. Although a particular aircraft model can remain in production for a decade or more, it is important for an OEM to have robust new aircraft development plans in order to address any holes in the line-up or to replace existing models with new ones that incorporate the latest technology (e.g., fuel efficiency). We therefore also consider a company's track record of developing new programs on time and on budget. In evaluating an OEM's technological capabilities, we consider its ability to successfully design and manufacture aircraft or engines that incorporate current-generation technologies (e.g., composite structures). Subcontractor oversight and system integration skills are also important, as is the ability to provide a global aftermarket support network. For suppliers, we consider the range of technological capabilities and any unique capabilities or highly specialized machinery or tooling the supplier may have. In assessing firms that provide services to the aviation industry, such as airframe or engine maintenance, we consider not only the firm's technical capabilities but which manufacturer and aviation authority approvals it has to work on particular aircraft or engines. Defense The defense industry has few prime contractors, therefore, market shares for prime contractors are generally not particularly meaningful. In many cases there are only a few, and, in some cases, only one (e.g., nuclear powered aircraft carriers) prime contractor that can produce a particular weapons system. In assessing strategic positioning we consider what types of weapons systems or related services the company provides and, most importantly, if they are in areas that are a high priority to receive continued government funding. For suppliers we would consider if the programs they supply are high priority. We also consider a defense contractor's technological capabilities, especially its ability to integrate complex, highly sophisticated weapon systems and to manage subcontractors. We consider a defense company's track record of successful program execution, both in regards to schedule and cost, as this is a key determinant in the government selection process. An A&D; company with a strong or strong/adequate competitive advantage assessment typically is characterized by a combination of: For a commercial aerospace OEM: Leading market positions in growing market segments; A complete range of aircraft that addresses all or almost all customer size and range requirements; and Significant capabilities to design, develop, market, produce, and support aircraft or engines. For a commercial aerospace supplier: The vast majority of revenues are related to supplying parts or services for popular, growing aircraft or engine programs, likely in a range of market segments; and Design capabilities for most products. However, it is unlikely we would assess a lower-tier supplier as strong unless it had unique capabilities that could not be replicated. For defense contractors: A majority of programs that are high priority for government spending; and A broad range of technological and system integration capabilities. For all of the above: Position as a commercial aerospace OEM, a prime defense contractor, or Tier 1 supplier; A solid track record of successful program execution and new product development. An A&D; company with a weak or adequate/weak assessment of its competitive advantage typically is characterized by a combination of: For a commercial aerospace OEM: Small market share or participates in markets with poor growth prospects (e.g., 50 seat regional jets); A limited product line or one with large gaps; and Limited capabilities in one or more areas of design, development, marketing, production, or aftersales support. For a commercial aerospace supplier: Most revenues are from supplying parts or services to aircraft/engine programs with weak demand or nearing end of production; Revenues focused on market segments with unfavorable medium/long-term growth prospects; Largely build-to-print work, with limited or no design capabilities; and Produces parts that are commodity-like or have limited technological sophistication. For a defense contractor: Majority

of revenues are from programs that are likely to see funding cuts; and Very narrow range products or ones that have limited technological sophistication. For all of the above: A lack of track record, or a subpar track record on program development and execution; and Position as a tier 2 or tier 3 supplier. Scale, scope, and diversity In assessing the scale, scope, and diversity of an A&D; company, we consider: Breadth of product offering; Program concentration; The degree of diversity of its end-markets; The geographic balance of its sales; and Its degree of customer concentration. Many A&D; companies participate in both the commercial aerospace and defense markets, as well as in some related industrial markets, which we generally view as favorable due to the different cycles and characteristics of the various markets. Commercial Aerospace OEMs In assessing the breadth of a commercial aerospace OEM's product line, we consider if the company offers a comprehensive selection of aircraft with different seat capacities and range. This is particularly important for business jet OEMs, whose customers often prefer for manufacturers to offer a range of aircraft at different sizes and price points so they can move up to larger aircraft from the same manufacturer as their needs change. In assessing customer diversity, we consider not only the number of customers and their proportion of sales, but also the type of customer (e.g., legacy airline or low-cost carrier). Although commercial aerospace is a global business, different regions have different growth prospects and cycles, so geographic diversity is also important. Commercial Aerospace Suppliers The relatively small number of OEMs means customer concentration is often very high for commercial aerospace suppliers. Therefore, we consider for which individual aircraft programs the company provides parts or systems and the relative attractiveness of each program. We also consider if the company supplies different commercial market subsegments (i.e., jetliners, regional jets, business jets, and helicopters), as well as defense or related industrial markets. For the same reason, the geographic diversity of customers is also usually very limited. When assessing geographic diversity, we consider the geographic diversity of the end customers for the aircraft or engine for which the supplier is building parts. In assessing the breadth of a commercial aerospace supplier's product offering, we consider the range of capabilities a supplier offers, and whether it only offers components or can provide larger assemblies or systems. We also consider the proportion of the company's products that are used to build new aircraft against those sold as replacements in the aftermarket, as the two markets have different dynamics, and the latter is often much more profitable. For companies that provide aviation services, such as airframe or engine maintenance, we consider what aircraft or engines the company has manufacturer or regulatory authorization to work on. Defense Contractors In assessing the program diversity of a defense contractor, we consider the proportion of sales for each program and its funding priority. When considering program diversity we also consider the funding sources (e.g. procurement or R&D;), especially the balance between development programs (usually funded out of R&D;) and production programs (usually funded out of procurement). Development programs are often lower margin, but should eventually become higher margin production programs because, in most cases, the contractor who develops a weapons system also is selected to produce it. We also consider the contract type (fixed price or cost-plus) when assessing program diversity. Under cost-plus contracts, firms are reimbursed for their costs incurred plus a fee, so any cost overruns are borne by the customer, but margins are generally low to reflect the lower risk. Fixed price contracts, on the other hand, shift all of the risk of cost overruns to the contractor and generally can be much higher margin, if the company can control costs. There are also numerous other contract types that mix the characteristics of cost-plus and fixed price contracts. When assessing customer diversity for defense contractors we look at the proportion of sales to each military service, intelligence agencies (which can be military or civilian), and civilian government agencies, as the budget prospects for each can vary. We also consider sales to foreign governments, and, in some cases, commercial customers. For subcontractors, we generally consider the ultimate end user of the product or service as the customer, not the prime contractor, as that is the source of demand. In assessing product breadth, we consider the range of weapons systems, subsystems, components, and related services the firm offers. An A&D; company that warrants a strong or strong/adequate assessment of scale, scope, and diversity typically is characterized by a combination of: For commercial aerospace OEMs: Offers a full family of aircraft or engines to meet a range of customer needs; Customers are well diversified by type (e.g., low-cost versus legacy airlines) and geography; and Limited individual customer concentration. For commercial

aerospace suppliers: Participation in a range of popular programs, often with exposure to various commercial aerospace market segments (i.e., jetliners, regional jets, business jets, helicopters), as well as defense and industrial markets; Broad range of products/capabilities, and ability to offer components and higher-level assemblies or systems; and Good balance of sales for new aircraft/engines and for the aftermarket. For defense contractors: Limited program concentration; Limited customer concentration; Good mix of domestic funding sources (i.e., procurement, R&D;, O&M;), including foreign sales; Balance of development and production programs and cost-plus and fixed price contracts; and Broad product/service offering. An A&D; company warranting a weak or adequate/weak assessment of scale, scope, and diversity typically is characterized by a combination of: For commercial aerospace OEMs: Sales derived mostly from a few products or those in markets with poor growth prospects; Significant individual customer concentration; and Limited geographic diversity of customers. For commercial aerospace suppliers: Significant proportion of sales derived from a small number of aircraft programs or those that have less favorable growth prospects; Limited sales to the higher margin aftermarket; Limited product offerings or lack of ability to produce higher level assemblies or systems; and Participation in only a few commercial aerospace markets subsegments, or limited sales to defense and industrial markets. For defense contractors Majority of sales related to one or a few weapons programs, especially those likely to see declining funding; Few development programs that could turn into higher margin production programs; High proportion of fixed price development contracts; High concentration of sales from one military service or civilian government agency; Limited funding diversity, or no or little foreign or commercial sales; and Limited product/service offering. Operating efficiency In assessing operating efficiency for an A&D; company, we consider its relative cost position versus industry peers, its ability to control costs and improve efficiency, the flexibility to manage capacity and workforce to match demand, and the ability successfully integrate acquisitions. To the extent an A&D; 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, whatever the nature of the prevailing market conditions. In reviewing the relative cost position of an A&D; company compared with those of its peers, we primarily consider its EBITDA margin; its ratio of sales, general, and administrative spending (SG&A;) to sales; and its capital expenditures (capex)-to-sales ratio. Both the overall cost and margin profile of an A&D; company and those of its various reporting segments are important in our analysis. In reviewing cost structure flexibility, we consider an A&D; company's ability to limit margin deterioration in a downcycle through cost reduction, especially labor, as well as its ability to match capacity with demand. Indicators of cost flexibility may include degree of operating leverage, degree of vertical integration and outsourcing, labor cost characteristics (including unionized/non-unionized workforce profile), and pension cost considerations., We consider a company's cost management by reviewing its record of cost reduction during good and bad times, the effectiveness of its restructuring programs and lean manufacturing programs where applicable, and its track record at successfully integrating acquisitions. In addition, for commercial aerospace OEMs, we consider its ability to develop new products on time and on budget, and how quickly it can come down the learning curve and reduce per-unit costs. For defense contractors, we also evaluate the ability to keep programs on cost and on schedule, and to properly bid and structure contracts so that the contractor is appropriately compensated for the risk being taken. An A&D; 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); A relatively flexible cost structure, often evidenced by lower operating leverage compared to peers', good ability to adjust labor costs and capacity in a downcycle, or to limit labor cost inflation; A track record of ongoing cost structure improvements, such as structural labor cost reductions, low cost sourcing, and footprint reduction, achieved during bad and good times; Although new commercial aircraft programs are often delayed or cost more than expected because of their technological complexity, a commercial aerospace company with strong or strong/adequate operating efficiency would be expected to have a good track record of introducing new products with minimal delays or costs overruns, and have demonstrated an ability to reduce per-unit costs quickly as production increases; and For a defense contractor, few programs that are materially above cost targets or behind schedule. An A&D; 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 its peer group's (after taking into account differences in sales mix that also affect profit margins); Less-flexible-than-average cost structure (for instance, because of high fixed or semi-fixed cost structure, labor inflexibilities, outdated asset base or production technologies versus peers', or an inefficient degree of vertical integration) or high profit and margin sensitivity to raw material cost fluctuations; A history of restructuring actions without tangible saving benefits, or of operational missteps; For a commercial aerospace company, a history of significant delays or cost overruns on new products or difficulty increasing production and improving profitability; and For a defense contractor, programs are frequently above cost or behind schedule; a history of underestimating cost or complexity of programs, or of agreeing to unfavorable contract terms to win business. Supplemental Ratios In addition to our analysis of a company's core ratios, we 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 global corporate criteria. For A&D; companies, we generally use: Free operating cash flow to (FOCF) to debt as the default supplemental ratio. Although generally not working capital or capex-intensive, A&D; companies do often have to invest in both when developing new products. We may alternatively use debt service coverage ratios ([FFO + interest]/cash interest, or EBITDA to interest), when the preliminary cash flow and leverage assessment indicated by the core ratios is "significant" or weaker; For companies that return a significant portion of their FOCF to shareholders through dividends, we may consider discretionary cash flow (DCF) to debt as the most relevant supplemental ratio. Agribusiness And Commodity Foods Industry If certain agribusiness and commodity foods companies engage in commodities trading and such activity contributes more than 20% of expected normalized EBIT, EBITDA, or gross margin and less than 70%, we would apply section VI of "Commodities Trading Industry Methodology." If certain agribusiness and commodity foods companies engage in such trading with 20% or less contribution of expected EBIT, EBITDA, or gross margin but more than 10%, we would apply the accounting adjustment for adjusted readily marketable inventories, as described in our Ratios And Adjustments methodology. Country Risk Because revenues for many agribusiness and commodity food companies are sensitive to commodity price changes, we generally determine exposure to country risk using EBITDA instead of sales. However, for companies with significant processing, sourcing, and/or distribution footprints, this may not capture country risks beyond those affecting demand and profit potential. Therefore, if country exposure by assets is available and indicative of a materially different country risk exposure profile, we may use assets to capture weak-link risk. This could be the case, for instance, if a company's production or sourcing footprint is in countries with a less favorable risk profile than that of where it derives its revenue from, and if those assets are not easily movable. Although less frequently, in some circumstances we would determine exposure to country risk using revenues, as this information is consistently available. Competitive position group profile The CPGP assigned to most agribusiness and commodity food companies is commodity focus/scale driven. Many of these companies require sizable capital investments and asset outlays to obtain economies of scale to cost- effectively provide food and ingredient solutions to industrial food companies, and, to a lesser degree, branded product offerings to the retail consumer channel. We also assign the services and product focus CPGP to commodity food companies that have a significant branded consumer product component to their product offerings, including more than 50% of EBITDA or operating income generated from such products. Examples include produce companies whose products consist primarily of branded retail offerings, and, to a lesser extent, meat processors who primarily offer branded, value-added retail products. In cases where believe the company's products are more akin to a branded nondurable, even if they primarily produce agricultural commodities (typically in the produce and protein sectors), we may use the services and product focus CPGP. Competitive Advantage An assessment of agribusiness and commodity food companies' competitive advantage includes an assessment of market share, strength and breadth of product offerings and customer base, and overall effectiveness of operating strategy. We evaluate market share and changes in share in key markets both regionally and globally. Market size and growth prospects are also components of this assessment. We evaluate the strength and breadth of product offerings and customer base by assessing the degree to which a company has invested in a deep product portfolio as well as more value-added products. The latter includes

ingredients and other value-added solutions for food manufacturers, or having some branded products supported by intellectual property (low calorie sweeteners, for example). Being more solutions-oriented with consumers and offering additional services (such as agronomy services to farmers) are additional factors in our analysis of product offering strength. We also evaluate the strength of the relationships these companies have developed with their respective customer and supplier bases. When assessing the overall effectiveness of operating strategy, we evaluate the degree to which a company's structure and strategy (e.g., being vertically integrated across various phases of production) enables a company to maintain above-average profitability and growth prospects. An agribusiness and commodity food company with a strong or strong/adequate competitive advantage assessment typically is characterized by a combination of: Leading market shares, particularly if such shares are in more value-added products and in regions of the world with more favorable sourcing and/or growth prospects. This would typically include a top-two or -three market share position in at least three key growing/processing regions and/or global agricultural commodities. A significant portion of the product portfolio has some value-added aspect or service to distinguish it from a pure commodity input; for example, a tailored offering of sweeteners and/or texturizers for a food manufacturer that is difficult to duplicate without significant investment. Long-tenured, strong supply relationships either with farmers or leading global food manufacturers that result in a favorable competitive advantage versus companies selling in the commodity markets to intermediaries and other industry constituents. For example, a company may have above-average sourcing capabilities and/or customer retention because it offers a broad spectrum of services to customers, such as farmer agronomical and/or financial/risk management solutions to improve crop performance and minimize volatility. A distinct strategic advantage over competitors. For example, a company that has a comprehensive crop or commodity food sourcing, manufacturing, and distribution footprint across several key sourcing regions, which leads to more stable performance relative to its peers. This enables the company to achieve above-market-average processing margins, better logistics and basis management (the management of inter-regional price/cost disparities), benefits from superior market intelligence (e.g., profit optimization decisions among trading, storing, processing, and other strategies that maximize the profits), and limited exposure to food safety risk such as disease and food supply contamination. A favorable regulatory environment (e.g., tariffs and quotas that protect the company). An agribusiness and commodity food company with a weak or adequate/weak competitive advantage assessment typically is characterized by a combination of: A below-average or below-mid-tier market leadership position, or a leadership position in a very narrow segment of the market, such as a single agricultural crop, or dominance in only one region. Alternatively, it participates in markets with weak growth prospects or limited value-added opportunities (examples include commodity protein processing serving one channel, such as foodservice or regional crop input wholesaling). A portfolio of product offerings that are a true commodity with very limited value-added characteristics, which results in a high degree of substitution risk and/or low customer retention rates. Limited or no discernible logistics or procurement advantage in the company's business strategy to distinguish it from the competition. A sector-specific regulatory framework that compromises profit stability (e.g., overly restrictive pricing directives, tariffs, and/or trade restrictions on certain commodity foods). Scale, scope, and diversity In assessing an agribusiness and commodity food company's scale, scope, and diversity, we measure diversity as a percentage of volume or earnings, and evaluate diversity by geography, product category, business function, concentration or breadth of customers, manufacturing/sourcing locations, as well as concentration of key commodities. Our analysis considers the following: Size of earnings base, relative to close competitors. Geographic footprint; location, diversity, and characteristics of markets. Size and reach of asset base and/or logistics infrastructure. Diversification of business function (range of commodity merchandising/distribution, processing, services). Customer and/or counterparty diversification. An agribusiness and commodity food company with a strong or strong/adequate assessment of its scale, scope, and diversity typically is characterized by a combination of: A comprehensive origination, distribution, and manufacturing footprint covering more than three key agricultural growing/herding/fishing regions around the globe to help limit supply concentrations during weak crop cycles, harvests, herd growth, or catches. Strong earnings diversity. An example for grain companies includes a well-balanced mix between merchandising (physical trading or sourcing, storing, and

distributing agricultural grains and other commodities) processing, and agricultural services. This may include a variety of product, logistics, hedging, and agronomy solutions (to farmers) and/or ingredients solutions (to industrial users). Strong diversity of processed products. For example, expanded corn-based products into sweeteners, ethanol, feed, and other milling products; or for protein companies, participation in several animal protein categories like poultry, pork, and beef, or several fish species. Favorable product diversity also includes a balanced product mix between pure commodity inputs to other manufacturers and value-added branded offerings (including private-label commodity offering to retail). A diverse customer base and/or counterparty base with limited customer or credit concentrations. Issuers typically would not have any one customer representing more than 30% of their overall sales. For grain merchandisers, no significant counterparty exposures would exist, or it could result in a more than 15% consolidated operating earnings decline if such counterparty were to default on a contractual obligation. An agribusiness and commodity food company with a weak or adequate/weak scale, scope, and diversity assessment typically is characterized by a combination of: Significant sourcing concentration, including participation in only a few regions (typically less than three). Processing concentration in two or fewer primary commodities; for example, producing just one commodity protein or one agricultural commodity. Significant manufacturing and/or production concentration as measured by reliance on fewer than three manufacturing plants, and a limited footprint of storage and/or mixing facilities (for grain merchandisers and/or crop input wholesalers). Reliance on a single or few customers accounting for more than 30% of revenues, and/or having significant counterparty exposure in merchandising where one customer accounts for more than 15% of earnings. Operating efficiency In assessing an agribusiness and commodity food company's operating efficiency, we analyze: The strategic location of a company's storage facilities, distribution hubs (such as port and rail terminals), and processing facilities to evaluate whether such asset positioning provides distinct logistics advantages over peers. Competitiveness of manufacturing processes, including cost, production (including utilization rates), and procurement efficiencies. For a company to warrant a strong or strong/adequate operating efficiency, it typically has some combination of these characteristics: A well-positioned asset footprint in a key commodity growing area that provides lower procurement and transportation costs, and offers a stable supply source, all of which result in better profitability. For example, protein producers whose plants are located closer to key cattle herding regions have lower sourcing costs and better operating margins (measured by operating profit as a percentage of sales). Above-average plant operating efficiencies and/or harvest yield, including better manufacturing utilization rates. Economies of scale and efficiencies that lead to better profit margins versus peers, taking into account differences in sales mix and average selling prices. Extensive reach and well-established distribution infrastructure. Most companies will have a global distribution footprint or a comprehensive footprint in a leading economy for their respective agricultural commodity. Above-average sourcing and logistics management, including better basis management and above-average distribution and/or manufacturing margins. For a company to warrant a weak or adequate/weak operating efficiency, it typically has these characteristics: A disadvantaged sourcing footprint and/or plant locations. Inconsistent manufacturing performance, including more variable utilization rates or harvest yields compared with peers. Substantial seasonality in the business and working capital requirements that could lead to excess inventory levels if seasonal demand is weaker than anticipated. A poor track record of executing its strategy, including a history of operating underperformance and/or operating disruptions, that is more likely to contribute to supply chain deficiencies and operating inefficiency. Level of Profitability There are certain factors, like price inflation, that may distort an EBITDA margin analysis for many of the low-margin businesses in agribusiness, particularly grain processing and merchandising. Therefore, we use return on capital for grain processors and merchandisers as explained below or, when available, a comparison of EBITDA or EBIT per unit sold as a supplementary indicator to refine our assessment, either when EBITDA margin is close to the thresholds for below average or above average, or when we estimate that price inflation has and will likely change EBITDA margins by more than 50 basis points on a year-over-year basis. For grain processors and merchandisers, we generally calculate ROC based on a three-year average of the trailing two years' results plus our projections for the current year (incorporating any reported year-to-date results and estimates for the remainder of the year). We may consider longer or shorter

periods of historical results or expected/normalized results, depending on such factors as availability of financial information or transformational events (such as mergers or acquisitions), and we take into account improving or deteriorating trends in profitability ratios. We also normalize for trading conditions, favorable or adverse, that we consider extraordinary in nature. We currently consider a trailing-three-year average ROC as listed in table 3. In times of extreme market conditions, we may also rely on peer comparisons to assess whether a grain processor or merchandiser's profitability is above or below average. ROC takes into account adjusted capital (including the adjustment that we make for adjusted readily marketable inventories [ARMI], if applicable; see our "Corporate Methodology: Ratios And Adjustments" for more information). Our assessment may also consider level of profitability compared with a company's closest competitors. For example, a protein processor may have an EBITDA margin slightly below the guideline ranges, yet it may have stronger profitability than its closest competitors. In this example, we may conclude that its level of profitability is stronger than what its EBITDA margin would indicate. In the following paragraphs we provide additional circumstances when a company's level of profitability assessment and its EBITDA margin may not align with table 2. However, for the majority of companies, the level of profitability and EBITDA margin will align. For grain processors, merchandisers, and crop input wholesalers (seeds, fertilizer, and crop protectants), margin analysis may be misleading because inflation can distort profit trends. For example, in a stable profit-per-unit scenario, the percent of sales will nonetheless decrease during inflationary periods. Therefore, profit margin analysis is generally supplemented with other profit measures, such as EBITDA or EBIT per unit, or return on capital. In analyzing the level of profitability of commodity meat companies, we also take into account differences in margin structure related to different national economies (e.g., commodity meat margins are typically two to four percentage points higher in Latin America than in the U.S.), different commodity meats (e.g., U.S. beef packing/processing margins are generally lower than chicken and pork margins), as well as the product mix impact of a company's offerings on its consolidated margin. For example, if a company offers a combination of commodity boxed meat that on average earns low- to mid-single-digit margins, and value-added further-processed products that on average generate closer to a low-double-digit margin, we would not view that company's consolidated margin as above average since it is being inflated by a higher-margin product mix. The margin guidelines for sugar cane processors in table 2 apply to issuers in Latin America, where the predominance of our ratings for this subsector currently exist. Margin structures for sugar cane producers in other regions may differ from the ranges outlined in table 2. In such circumstances we would also compare the EBITDA margin for the processor in that region with our estimates for the industry average for that region. For produce companies, margins depend on the product the company is marketing, and we would compare the EBITDA margin on a product-specific basis, and compare whether the issuer's EBITDA margin is above, in line, or below our estimates for the industry average for that specific product. Supplemental Ratios If a company is working capital or capital intensive, or if the preliminary cash flow leverage assessment is significant or weaker, then two interest coverage ratios, EBITDA to interest and FFO-plus-interest to cash interest, will be given greater importance as supplemental ratios. These ratios become more important in our analysis of companies with highly seasonal businesses and resultant significant intrayear swings in working capital investment needs, such as crop input wholesalers. The seasonal companies typically borrow to fund their increased working capital investment and the interest coverage ratios capture all annual interest costs. 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 fine tune our cash flow analysis. We consider the following as supplemental ratios: Debt coverage ratios: FOCF to debt and DCF to debt. Interest coverage ratios: EBITDA to interest and FFO to interest. For most agribusiness companies, we typically apply the standard supplemental ratio of FOCF to debt. This is done because of the somewhat capital-intensive nature of commodity food processing, even though their ratio of ongoing capital spending to sales is generally less than 10% and depreciation to sales is less than 8%, ratios we consider reflective of capital-intensive companies. For companies that make significant dividend distributions we apply the DCF to debt supplemental ratio. Because several sectors of the agribusiness and commodity foods industry have a history of earnings and cash flow volatility, we often need to include a volatility adjustment to our final cash flow leverage assessment. This is done by applying the volatility

adjustment defined in our corporate criteria. Comparable Ratings Analysis One important factor to consider in our comparative ratings analysis is that grain merchandisers and vertically integrated livestock companies are heavy users of derivatives to hedge against price risk of their commodity positions, which can lead to significant cash collateral calls, counterparty exposures, and even debt-like obligations for significantly out-of-the-money derivative positions. Therefore, we want to ensure a company's use of derivative positions doesn't lead to any outsize losses, payment obligations, and/or margin calls that would otherwise compromise a company's financial leverage and liquidity position. If such credit risks are more prevalent for a company when compared with its peers at the same rating level, we may use a negative comparable rating assessment. Agricultural Cooperatives Industry If certain agricultural cooperatives engage in commodities trading and such activity contributes more than 20% and less than 70% of expected normalized EBIT, EBITDA, or gross margin, we apply section VI of "Commodities Trading Industry Methodology." If certain agribusiness and commodity foods companies engage in such trading with 20% or less contribution of expected EBIT, EBITDA, or gross margin but more than 10%, we apply the accounting adjustment for adjusted readily marketable inventories, as indicated in our Ratios And Adjustments criteria and guidance. Country Risk Because revenues for many agricultural cooperatives are sensitive to commodity price changes, we generally determine exposure to country risk using EBITDA. However, for cooperatives with significant processing, sourcing, and/or distribution footprints this may not capture country risks beyond those affecting demand and profit potential, and we may use fixed assets to determine country risk exposure. For instance, if a company's production or sourcing footprint is in a country with a higher country risk profile than that of where it derives its revenue from, and if those assets are not easily movable. Likewise, we would use fixed assets when a company's production assets are in countries with a lower country risk profile than that of the company's headquarters, but it has broadly diversified export revenues that can easily be redirected. In more rare circumstances we would determine exposure to country risk using revenues, as this information is consistently available. Competitive position group profile Since most marketing agricultural cooperatives tend to compete on price, and how well they manage member payments and costs when prices fluctuate is important, brand recognition or product differences--while important--are of less importance. Therefore, the CPGP for most marketing cooperatives is commodity focus/cost driven. Supply cooperatives tend to compete on scale and leverage their sales volume over a large customer base. Therefore, the CPGP for most supply cooperatives is commodity focus/scale driven. In some circumstances, we would assign the services and product focus CPGP to marketing or supply cooperatives that have a significant branded consumer product component to their product offerings, including more than 50% of EBITDA or operating income generated from such products. For example, we would assign the services and product focus CPGP to marketing cooperatives that primarily use the commodity supplied by their member owners as an ingredient in a branded retail consumer product offering, such as shelf-stable juices. If a cooperative is both a supply and marketing cooperative we would assess both business activities separately. In such case, we use the same approach as in the corporate methodology, assessing both business lines for the components competitive advantage, scope/scale/diversity, and operating efficiency. They are then blended using a weighted average of revenues, earnings, or assets to form the preliminary competitive position assessment. The level of profitability and volatility of profitability are then assessed based on the consolidated financials for the enterprise. Competitive Advantage For our assessment of competitive advantage for marketing cooperatives, we evaluate different factors than for supply cooperatives, given the different business models of each cooperative structure. A marketing cooperative maximizes the economic value of a delivered commodity for its member owners, whereas a supply cooperative's goal is to deliver cost-effective and value-added services to its customers and members, who, as owners, also benefit from profits generated by the sale of its product and services. Marketing cooperatives When assessing a marketing cooperative's competitive advantage, we evaluate the strategic, operating, or structural factors that underpin the relative strength of the returns generated for its members, including: Barriers to entry, including from regulation, or from any sourcing or production advantage of the marketed commodity; Product differentiation and/or brand strength; and Commitment of the cooperative's farmer member base to maintaining its membership in the cooperative. We evaluate the degree to which the cooperative benefits from barriers to entry by assessing regulatory

factors and sourcing and production attributes. Regulation may protect a cooperative's market position through tariffs and quotas that protect pricing and supplies of a particular commodity. A cooperative may also benefit from a sourcing or production footprint that protects it from new entrants, and which can be a function of the relative strength or weakness of the agronomic characteristics of the farming territory of its member owners, including climate and land characteristics. In reviewing product differentiation and brand strength, we consider the degree to which the marketing cooperative's product mix is branded versus commodity. We evaluate if the product mix is more weighed toward consumer offerings with strong brand value, as measured by brand awareness, market shares, and premium pricing, or if products are primarily sold as commodities (for example, as an input to another company's product offerings). When evaluating the characteristics of a cooperative's member base and how that contributes or detracts from competitive advantage, we consider the tenure of the membership, the inherent viability and stability of these members given their respective competitive strengths, its track record of member retention, and its ability to retain members in the future (a function of the existing or emerging market alternatives available to those farmers). A marketing cooperative with a strong or strong/adequate competitive advantage assessment typically is characterized by a combination of: A distinct strategic advantage over other competitors. For example, a cooperative that operates in a favorable and predictable regulatory environment (e.g., one with tariffs and quotas that protect pricing and supplies of a particular commodity), has an established manufacturing and distribution footprint across several key sourcing regions, or has a low-cost operating footprint that leads to above-average market returns for its member owners. A significant portion of the product portfolio has some value-added feature or service to distinguish it from a pure commodity input; for example, a portfolio of branded consumer product offerings sold at various retail channels. Long-tenured members, with stable and economically viable characteristics, and strong membership retention of its owners/partners that allows the cooperative to cost-effectively manage its commodity supply needs and affords the cooperative flexibility over the amount and timing of its member payments. As an example, a cooperative that can easily increase or decrease needed acreage and/or adjust member payments without risk of losing or not retaining new members. A member base whose farming territories have a distinct agronomical advantage that results in higher crop returns for the marketed commodity compared with substitute crops either in the same growing or from other regions. For example, a member base in a territory whose land and climate is better suited for growing the cooperative's marketed crop(s) than alternative crops. A marketing cooperative with a weak or adequate/weak competitive advantage assessment typically is characterized by a combination of: Having no particular marketing advantage such that the returns it generates for its members are no better than commodity returns the farmer could earn elsewhere. Exclusively marketing pure commodity product offerings that have little product differentiation. A sector-specific regulatory framework that compromises profit stability (e.g., overly restrictive pricing directives, tariffs and/or trade restrictions on certain commodity foods). A member base that is economically challenged, or with significant membership turnover that does not afford the cooperative any material discretion in managing the amount and timing of member payments. Limited or no discernible agronomical advantage in the cooperative's farming territories. Supply cooperatives When assessing a supply cooperative's competitive advantage, we evaluate: the strength and breadth of its products and services, its ability to develop new product and service to meet the needs of its members/customers, and its track record and ability to profitably maintain and/or grow its sales volumes and member/customer base. Given the vast product needs of farmers and other consumers of agricultural supplies, we evaluate the strength and breadth of product offerings and the customer base of supply cooperatives by assessing the degree to which the cooperative's earnings are generated across a broad product portfolio or concentrated in a limited product range or niche group of consumers. We also assess a cooperative's ability to provide more value-added products to meet the needs of its members/customers and sustain a favorable competitive advantage. The degree to which products are more solutions-oriented (such as agronomy services to farmers) is demonstrative of product offering strength. Supply cooperatives are more successful when they can leverage their existing customer footprint with additional member/customers and gain economies of scale. Therefore, we assess a supply cooperative's success in retaining and growing its customer/member base when assessing the comparative advantage. A supply cooperative with a strong or strong/adequate

competitive advantage assessment typically is characterized by a combination of: A broad portfolio of agricultural products and services that range from more commodity-based farm products to more value-added customer-centric agronomic services that help distinguish its product offerings from those of other competitors. A strong service reputation with innovative product solutions. A dominant and growing market presence and/or membership base in the territories it services. A supply cooperative with a weak or weak/adequate competitive advantage assessment typically is characterized by a combination of: A narrow set of product offerings that are primarily commodity based with limited product differentiation. Limited product innovation and customer service focus. A modest market presence in the territories it services and a weak membership base. Scale, scope, and diversity In assessing an agricultural cooperative's scale, scope, and diversity, we evaluate: The size of the member base, relative to competitors, and the stability, growth profile, and diversification of the member base. The geographic diversity of its sourcing footprint to ensure adequate production and sales volumes. The scale of manufacturing or distribution footprint versus competitors. The diversification of its product and earnings. When evaluating the size, stability, growth profile, and diversification of a cooperative's member base, we consider the absolute number of members compared to competitors and relative to the potential number of farmers in the regions of operations; we would also consider trends in membership, any member concentrations, and the degree to which those could compromise business stability if membership were discontinued. When evaluating geographic diversity of the sourcing footprint, we consider the absolute number of regions or suppliers from which the cooperative sources supplies relative to other cooperatives and/or companies producing similar products. We also consider any sourcing concentrations and the degree to which that could compromise earnings stability during periods of supply shortage. When evaluating scale of manufacturing or distribution footprint, we seek to determine the extent to which the cooperative benefits from economies of scale or if it is overly reliant on a small number of plants to produce its products. We also consider the breadth of a cooperative's overall distribution footprint to assess the degree to which it can leverage its supply network and deliver above- or below-average distribution economies in the regions in which it operates. The degree of diversification of products and earnings is important because of cooperatives' inherent exposure to commodity prices and supply availability. Therefore, we evaluate if product offerings are diverse enough to offset such risks or whether earnings are narrowly focused on one product or one customer/region/channel. An agricultural cooperative with a strong or strong/adequate assessment of its scale, scope, and diversity typically is characterized by a combination of: A market-leading member base that has not suffered material membership losses and does not have any material concentration of members (greater than 20%), such that their departure from the cooperative would not meaningfully compromise earnings and cash flows. A comprehensive sourcing footprint covering more than three key agricultural regions to help limit supply concentrations during weak crop cycles or harvests. Significant economies of scale in its manufacturing/processing footprint or a vast member distribution footprint covering several regions. Earning sources that are sufficiently diversified across products, including a wide offering of branded and/or private-label products with enough value-added manufacturing to distinguish the product from the farmers' delivered agricultural commodity. An agricultural cooperative with a weak or adequate/weak scale, scope, and diversity assessment typically is characterized by a combination of: A weak membership base with demonstrated history of member losses or higher degree of membership concentration (over 20%) such that that departure would compromise the cooperative's competitive position. A narrow sourcing footprint centered in one agricultural region or relying on a limited number of suppliers that would expose the cooperative to material volume losses during adverse crop conditions or other factors leading to the loss of a key supplier. Significant manufacturing and/or production concentration as measured by reliance on fewer than three manufacturing plants, and/or a limited regional distribution footprint (for supply cooperatives). A narrow product focus in only one or two product offerings that are primarily commodity focused. Operating efficiency In assessing an agricultural cooperative's operating efficiency, we analyze: The competitiveness of manufacturing processes, including cost, production (including utilization rates), and procurement efficiencies. The competitiveness of the entity's harvested region measured by harvest yields and crop profitability compared to substitute crops and other growing regions. For cooperatives that make significant recurring member payments to their

cooperative member owners, we assess the willingness and ability of a cooperative to reduce member distribution payments, either to reinvest in its product offerings as needed or to stabilize operating performance during weaker market cycles. In the case of supply cooperatives, the strategic location of a company's wholesale/distribution facilities, and the how efficiently they service their customers. When evaluating competitiveness of manufacturing processes we evaluate the degree to which a company has a material production or sourcing advantage or disadvantage relative to other competitors. We evaluate whether plants are more productive or cost-efficient compared with competitors, and whether a cooperative may have a sourcing advantage that permits for cost-effective production. When evaluating the competitiveness of an entity's harvest region, we assess the degree to which the cooperative's sourcing region provides an advantage, such as better yields versus other regions. We assess whether the willingness and ability of an agricultural cooperative to reduce member payments to stabilize cash flows and operating performance is evident, and the degree to which such member payment reductions support a stronger or weaker operating efficiency assessment depending on the frequency and materiality of such member payment reductions. When evident and material, this ability is a unique operating characteristic, in our view, that improves a cooperative's competitive position and mitigates an agricultural cooperative's "intermediate" industry risk assessment. For supply cooperatives we consider how extensive their customer network is compared with other competitors servicing the same area. We also look at whether their sourcing footprint provides a logistics advantage to supplying their customer base. For a cooperative to warrant a strong or strong/adequate operating efficiency assessment, it typically has some combination of these characteristics: Above-average plant operating efficiencies and/or harvest yield, including better manufacturing utilization rates. Economies of scale and efficiencies that lead to better profit margins versus peers, taking into account differences in sales mix and average selling prices. A well-positioned asset footprint in a key commodity growing area that provides lower procurement and transportation costs, and offers a stable supply source, all of which result in better profitability. The cooperative has the ability to reduce or adjust member payments as needed, which effectively contribute to the flexibility for its cost structure. A measurable track-record of adjustments has to be evident and such adjustments have to be sustained over a long enough period and be material enough to improve profitability and cash flows in a way that does not jeopardize the cooperative's competitive position. Extensive reach and well-established distribution infrastructure. Most companies will have a multi-region distribution footprint or a comprehensive footprint in a leading economy for their respective agricultural commodity. For a cooperative to warrant an adequate/weak or weak operating efficiency assessment, it typically has these characteristics: Disadvantaged sourcing footprint and/or plant locations. Inconsistent manufacturing performance, including more variable utilization rates or harvest yields compared with peers. Substantial seasonality in the business and working capital requirements that could lead to excess inventory levels if seasonal demand is weaker than anticipated. When applicable, there is no discernable material willingness and ability to reduce member payments to stabilize operating performance. A poor track record of executing its strategy, which is more likely to contribute to supply chain deficiencies and operating inefficiency, including a history of operating underperformance and/or operating disruptions during which the cooperative does not demonstrate discretion and control in curtailing member payments to restore operations (to the extent member payment management analysis is applicable). Level of Profitability Level of profitability for marketing cooperatives with a commodity focus/cost driven CPGP: These marketing cooperatives are maximizing price for an agricultural commodity with limited comparability to other commodities, and profitability measures such as EBITDA margin may not be comparable among products. Therefore, when we believe we have sufficient information about market prices and prices paid to members, we generally analyze whether the member payments and price per commodity unit represent a significant premium over the market value of the commodity. Generally, if price per commodity unit: is a consistently significant premium over observable commodity market prices, we would assess level of profitability as above average. is in line with the market value of the commodity, we would assess level of profitability as average. represents a consistent material discount below market value, we would assess level of profitability as below average. If market price information for a commodity is not available or not representative, or when determining premium or discount relative to market prices per commodity unit is not possible, or in order to refine our assessment, we would also compare the level

and trend of a cooperative's ROC to that of its peers to determine a cooperative's level of profitability relative to its peers. Level of profitability for supply cooperatives with a commodity focus/scale driven CPGP: We use EBITDA margins as the primary indicator of the level of profitability of most supply cooperatives. If a supply cooperative is largely a wholesaler of crop inputs and other farm products, we assess the level of profitability as above average if EBITDA margins are above 5%, average if EBITDA margin are between 3% and 5%, and below average if EBITDA margins are below 3%. We generally supplement this analysis with other profit measures, such as EBITDA or EBIT per unit, which we may use to refine our assessment when EBITDA margin is close to the thresholds for below average or above average. For instance, if a company's EBITDA margin is at the high end of the defined range for average but its EBITDA per unit is better than peers', we may assess its level of profitability as above average. Level of profitability for cooperatives with a services and product focus CPGP: Since the majority of earnings are generated by products that are sold and compete directly with other consumer nondurables (primarily packaged food offerings), we believe EBITDA margin is an important metric to evaluate profitability. Generally, such cooperatives with EBITDA margins above 20% would be considered to have above average level of profitability, those with EBITDA margins between 10% and 20% would be considered average, and those with EBITDA margins below 10% would be considered below average. We further complement this analysis by evaluating how well the cooperative is maximizing price and member returns per commodity unit for its marketed commodity. For example, a cooperative with an EBITDA margin slightly below the guideline ranges may still generate member payments and returns that represent a significant premium over the marketed value of the commodity. In such examples, we may assign a profitability assessment stronger than the EBITDA margin indicates. Conversely, a company with an EBITDA margin slightly above the guideline ranges may generate member payments and returns that represent a significant discount to the market value of the commodity. In this example, we may assign a profitability assessment weaker than the EBITDA margin would indicate. To determine our final assessment of the level of profitability, we may also consider additional profit measures, such as return on capital. For example, a company with an EBITDA margin slightly below the guideline ranges may have excellent asset turnover, which boosts return on capital. In this example, we may assign a profitability assessment stronger than the EBITDA margin table would indicate. Conversely, a company with an EBITDA margin slightly above the guideline ranges may have poor asset turnover, which hurts return on capital. In this example, we may assign a profitability assessment weaker than the EBITDA margin table would indicate. Our assessment may also consider level of profitability compared with a company's closest competitors. For example, a cooperative may have an EBITDA margin slightly below the guideline ranges yet it may have stronger profitability than its closest competitors. In this example, we may assign a profitability assessment stronger than its EBITDA margin would indicate. Supplemental ratios We typically use the following interest coverage ratios as supplemental ratios: EBITDA to interest and FFO- plus- interest to cash interest. Many agricultural cooperatives have ongoing and well- entrenched banking relationships, given the presence of government-supported agricultural-focused lending institutions in several nations. We reflect these relationships in our cash flow/leverage analysis through the use of interest coverage ratios as supplemental ratios. Where cooperatives have historical links and a strong ongoing relationship with their respective national agricultural lending institutions (for instance, in the form of shareholdings by those institutions and interaction between the banks and the cooperative), this often results in lower interest costs than peers, which will be reflected in the EBITDA interest coverage ratio. Volatility tables We generally use the standard volatility table when assessing cash flow and leverage for agricultural cooperatives, and always do so for cooperatives whose competitive position is assessed '3-Satisfactory' or weaker, or when the corporate industry country risk (CICRA) is '4' (except when competitive position is excellent), '5', or '6'. However, there may be cases where we consider that certain agricultural cooperatives possess unique operating and structural characteristics that afford them significant discretion over the amount and timing of their member payments, which in our opinion can reduce cash flow volatility. In these circumstances, we view this discretion over member payments as a material offset to the sector's intermediate industry risk assessment and will apply the low or medial volatility table subject to the conditions set forth below. We use the low or medial volatility tables for agricultural cooperatives if certain conditions are met, and if the cooperative's business risk profile is

likely to benefit from a willingness and ability to effectively stabilize its cash flow/leverage ratios following a reduction in member payments in response to changes in market prices for its marketed commodity(ies) or during periods of stress. In our opinion, this increases the stability of the issuer's earnings. We apply the medial volatility table to a cooperative when all of the following conditions are evident: Ability to reduce member payments: Typically, to demonstrate such ability, i) the cooperative has a preliminary competitive position assessment of strong or better (including a competitive advantage and operating efficiency assessment of at least strong/adequate reflective of a reasonably stable member base), and a profitability assessment no worse than satisfactory; ii) member payments are largely discretionary, rather than largely fixed; and iii) payments are made frequently and are well staggered throughout the year. Willingness to reduce member payments: Typically, to demonstrate such willingness, i) management has stated a willingness to adjust member payments or increase equity retentions if necessary; ii) we view these statements as credible; and/or iii) member payments are subordinated to the cooperative debt obligations in the cooperative bylaws or by other effective contractual means. Effectiveness of member payment reductions: The favorable impact to cash flows from changes to member payments and/or increased member equity retentions is demonstrated and/or measurable; we do not expect the member payment or equity retains adjustment to be reversed (i.e. it is not a deferral); the reductions can be sustained over a long enough period to restore cash flow ratios to levels commensurate with the cooperative's financial risk profile; and to the extent that planned member payments are based on an estimate of final market prices, these payments represent a material discount to the final estimated payments. We use the low volatility table if the cooperative meets all of the conditions for the medial table, and additionally has demonstrated a track record of curtailing member payments to stabilize earnings and cash flows; i.e., the cooperative has a demonstrated, multiyear track record of curtailing member payments and/or increasing member equity retentions, which has contributed to meaningfully temper the deterioration of, or stabilize, cash flow and leverage ratios when exercised, and these curtailments were not deferrals. In addition, it is highly probable in our view that the cooperative would be able to continue doing so in the future. Asset Managers This methodology applies to traditional and alternative asset managers. We define asset managers as companies that derive a majority of their revenues from management and performance fees for managing third-party money or assets on behalf of retail or institutional investors. These assets are commonly referred to as assets under management (AUM). We define traditional asset managers as companies that typically manage mutual funds that invest in stocks, bonds, or money market instruments on behalf of retail and institutional investors. We define alternative asset managers as companies that typically manage private equity funds, hedge funds, debt (credit) funds, or fund of funds (private equity or hedge fund) mostly for wealthy individuals or institutional investors. For traditional asset managers, total revenue primarily consists of management fees, which are generally charged as a percentage of AUM. For alternative asset managers, in addition to earning management fees, one of the primary business objectives is to earn performance fees (in certain situations referred to as "incentive fees" or "carried interest;" see Glossary), which may be earned if an asset manager's investment performance exceeds certain predetermined thresholds (hurdle rates). Asset managers also generate unrealized or realized gains on principal investments as well as investment income (or loss). These principal gains (or losses) and investment gains (or losses) can also include dividend income from direct investments made in their funds alongside third-party investors. Competitive position group profile For asset managers, the CPGP is services and product focus. Competitive advantage In assessing the competitive advantage of an asset manager, we consider: Business strategy, Market position, Investment performance, and Net AUM flows. An asset manager with a strong or strong/adequate competitive advantage assessment typically has two or more of the following, or one of the following that is particularly significant: The growth strategy is mostly based on organic growth rather than aggressive growth fueled by acquisitions. Strong market position marked by sizable AUM sourced through global operations. Strong market position, as indicated by a sizable sales force and high, stable, or growing sales emanating from an increasing variety of distribution channels. Investment performance that consistently outperforms its benchmarks and/or peers. Growing AUM with positive net AUM flows year over year on a sustained basis. An asset manager with a weak or adequate/weak competitive advantage assessment is typically characterized by two or more of the

following, or one of the following that is particularly significant: Poor business strategy with declining market share or product offerings that don't meet investor appetite, and/or aggressive acquisition strategy. Less than $15 billion in AUM and relatively short track record of asset management, small sales force in which AUM are raised only through a handful of distribution channels with low market penetration, and/or low level of repeat clients. Weak investment performance that consistently underperforms its benchmark and/or peers. Declining AUM with negative asset flows (redemptions exceed new investment) over an extended period of time in most of the asset classes or key or largest funds or strategies of the asset manager without reinvestment in similarly profitable alternative funds of the asset manager. Market position In reviewing market position, we consider the absolute level of AUM, market share in different geographies and products, brand reputation, track record of managing AUM, and distribution capability. We typically define a small traditional asset manager as less than $50 billion in AUM, midsize as $50 billion to $250 billion, large as $250 billion to $500 billion, and global as more than $500 billion, especially if AUM are geographically diverse. Investment performance We view investment performance as positive if either 70% or more of AUM is in the top two quartiles on three- and five-year time horizons, or if 70% or more of AUM outperforms benchmarks or indices on three- and five-year time horizons. We look at one-year investment performance only on a qualitative basis to assess the recent trend because we believe one year does not represent a long enough track record. We consider overall investment performance as negative to competitive advantage when 30% or more of AUM is in the bottom quartile on either the three- or the five-year time horizons, or if 40% of AUM or more underperforms benchmarks or indices on either the three- or the five-year time horizons. Otherwise, performance is neutral to competitive advantage. Net AUM flows We consider net AUM flows to strengthen an asset manager's competitive advantage when the manager experiences positive net sales (new investment exceeds redemptions) on one-, three-, and five-year time horizons on an aggregate basis and by asset class and by channel. We define "negative" AUM flows as net redemptions (outflows exceed new investment) on an aggregate basis on a three-year time frame, except potentially during a year of very adverse industry conditions--such as 2008. In such a case, we could alternatively base our assessment on which asset managers achieve a quicker recovery or turnaround relative to peers. For alternative managers, we would not view fund distributions as negatively as we would redemptions because fund distributions are typically a reflection of realization activity, whereas redemptions are often a reflection of an investor's decision to withdraw capital. However, we expect a significant portion of the fund distributions to be reinvested into new funds. Scale, scope, and diversity In assessing an asset manager's scale, scope, and diversity, we consider: AUM by asset class, AUM by distribution channel/investor base, AUM by geography, Variety of funds/strategies, and Revenue diversification by business line. Diversification supports scale, scope, and diversity only when actively pursued and with the expertise and adequate staffing and infrastructure to enter new products and markets. An asset manager with a strong or strong/adequate scale, scope, and diversity assessment is typically characterized by two or more of the following, or one of the following that is particularly significant: Robust and active diversification of AUM by asset class, distribution channel, geography, investor base, and strategies/funds offered. Absence of reliance on a particular customer, product, or fund, or on a group of a few customers, products, or funds. Ability to expand its scale or diversify its AUM in the next 12-18 months. If scale, scope, and diversity is not already strong or strong/adequate, one or more business lines, in addition to asset management, that in aggregate contribute more than 10% to total revenue in areas where management has adequate experience and skill sets can make it so when combined with one or more of the strengths listed above. An asset manager with a weak or adequate/weak scale, scope, and diversity assessment is typically characterized by two or more of the following, or one of the following that is particularly significant: Concentrated AUM with respect to asset class, geography, investor base, and/or number of strategies/funds offered. Reliance on a particular customer or market or on a group of customers or end-markets. Diversification into business lines where management does not possess the required expertise. Inability to expand its scale or diversify its AUM in the next 12-18 months. In reviewing AUM by asset class, we look at the proportion of invested AUM in equity, fixed income, money market, or alternative assets (private equity, credit, or hedge fund) for a traditional asset manager. AUM by asset class supports scale, scope, and diversity when, for example, 40% is invested in fixed income and 40%

is invested in equity assets, with the remaining 20% invested in balanced funds. Similarly, a positive assessment for an alternative asset manager would be 40% in private equity; 40% in debt (credit or hedge fund) assets, including both public and private debt; and 20% in alternative asset classes, including real estate and infrastructure. Any concentration in a single asset class of more than 80% weighs on scale, scope, and diversity, in our opinion. Additionally, further diversification by investment style within each asset class, considering the volatility of the product, supports the assessment. For example, a well-diversified product mix within an asset class can be achieved in any of the following ways: Well-balanced equity AUM between growth and value stocks; Well-balanced fixed-income AUM among governments, corporate bonds, and structured finance; or For credit-focused asset managers, AUM well-diversified across distressed, mezzanine, and senior debt. The AUM by distribution channel/investor base subfactor addresses the proportion of AUM distributed through retail and institutional clients, AUM by top 10 retail distribution intermediaries (national and regional brokerage firms, banks, and financial intermediaries), AUM by top 10 institutional clients (corporate and municipal pension plans, endowments and foundations, and other corporate and public moneys), and revenue contribution of the top three and top 10 clients (mostly institutional clients). Generally, an investor base comprising a combination of retail and institutional investor bases diversifies revenue streams and supports scale, scope, and diversity more than a firm with only one investor base. Asset managers that focus largely or solely on management and sales of retail mutual funds could have narrow scale, scope, and diversity because of their focus on mutual fund investors. For them, well-diversified distribution supports positive scale, scope, and diversity. For asset managers that focus on mutual funds that are sold through external sales forces, it is key to have a well-established and well-diversified network of sales people at national and regional brokerage firms, banks, insurance companies, and financial planning firms. The following situations support an asset manager's scale, scope, and diversity: each of retail and institutional assets accounting for approximately 50% of AUM (this does not apply to alternative asset managers, which typically have more than 90% of their clients as institutional investors), the top three distribution retail intermediaries or the top three institutional clients representing less than 20% of AUM, or the top three clients representing less than 20% of revenues. Weighing on scale, scope, and diversity would be retail or institutional assets representing more than 90% of AUM (this does not apply to alternative asset managers, which typically have more than 90% of their clients as institutional investors), the top three distributional channels or the top three institutional clients representing more than 50% of AUM, or the top three clients representing more than 50% of revenues. An asset manager that has invested AUM in different geographies is more diverse and better protected against country-specific economic forces, in our view. For instance, if the U.S. stock market plummets, instead of redeeming out of the asset manager in whole, investors may choose to reallocate fund investments to less volatile markets outside of the U.S. but in funds that are still managed by the same asset manager. As an example, a stronger asset manager could have 30% of AUM residing in the U.S. and 30% in Europe (with the remaining AUM allocated elsewhere). A weaker asset manager could have more than 90% of its AUM invested in one particular country. Asset managers that have a large variety of funds/strategies demonstrate stronger scale, scope, and diversity when the asset managers with the larger number of funds/strategies have no concentrations in any one investment style or product. We consider an asset manager with more than 30% of its AUM or 30% of its revenue representing one fund or strategy as weighing negatively on scale, scope, and diversity. Also, if the top three funds/strategies represent more than 50% of AUM or of revenue derived from asset management fees (as opposed to investment income or revenue derived from other business lines, which also contribute to revenue), that would be a negative to scale, scope, and diversity. We also consider the life cycle of the funds, especially for the alternative asset managers that have finite life of funds. A weaker assessment would occur when most of the alternative asset manager's funds are coming close to the end of funds' lives (typically alternative asset manager funds have finite lives of 10-12 years) and we expect a significant portion of its AUM to trail off over the coming one to three years. AUM diversified in a number of funds is supportive of scale, scope, and diversity. Although asset managers may already have strong diversification just by managing AUM, businesses outside of asset management contributing more than 10% to revenue (overall revenue, including other segments such as asset management fees and investment income) strengthen the scale, scope, and diversity assessment only

if we believe management has adequate expertise in the additional business lines and intends to maintain or grow its presence in these additional business lines. Examples of business lines that can add to scale, scope, and diversity include a brokerage or securities firm business, assets under administration (AUA) business (see Glossary), or fees derived from advisory (such as merger and acquisition advisory) services. Level of profitability In assessing the level of profitability, we view an adjusted EBITDA margin as the best measure for comparing the profitability of asset managers. In the cases where we make adjustments related to realized performance fees and investment income to calculate adjusted EBITDA, similar adjustments will be made in the denominator (revenues) of the adjusted EBITDA margin calculation. We generally calculate profitability ratios based on a three-year average: the previous one year's results, our current-year forecast (incorporating any reported year-to-date results and our estimates for the remainder of the fiscal year), and our forecast for the next fiscal year. It is difficult and often impractical to forecast asset manager profitability beyond the next fiscal period because of the lack of visibility of top-line revenues. Management fees are largely driven by AUM or, in some cases, commitments from investors, which, like stock prices, cannot be forecasted with a high degree of accuracy. Similarly, performance fees are only received when the manager's investment performance exceeds a certain hurdle rate, which is also hard to predict. Asset managers generally derive revenue from three sources: Fee-related earnings (FRE), which are, in most cases, contractual, relatively recurring, the most predictable and highest quality, in our view, and include management fees, transaction fees, advisory fees, and interest income, and may include a portion of dividend income; Performance fees, which are based on the performance of the funds under management and are typically subject to a hurdle rate and can be volatile (but not negative) over an economic cycle; and Investment income, which consists of principal gains (or losses) from investments (which may include a portion dividend income) made in funds alongside third-party (limited-party) investors. For asset managers whose total realized performance fees (including all realized incentive fees and carried interest) and realized investment income over the past five years represent more than 10% of total revenue on average (typically alternative asset managers), we calculate adjusted EBITDA by applying a 50% haircut to five-year average realized performance fees and realized investment income. For asset managers, typically traditional asset managers, whose total realized performance fees and realized investment income represent less than 10% of total revenue on average in the past five years, we do not apply the haircut to realized performance fees or realized investment income, described above, to calculate adjusted EBITDA. For asset managers, typically traditional asset managers, that don't bifurcate performance fees and investment income into "realized" and "unrealized," we will first assess the total of all performance fees and all investment income as a percentage of total revenues. If that percentage does not exceed 10% of revenues on average over the past five years, we would not apply the haircut. If that percentage is above 10%, on average, over the past five years, we may make assumptions (up to 100%) to determine how much of the performance fees and investment income is unrealized. We adjust EBITDA to incorporate only the portion of net realized performance fees and net realized investment income that we consider sufficiently stable. We refer to both of these revenue sources--net realized performance fees and net realized investment income--as "net" because we net the expenses associated with each--fees and income received. Specifically, we add back to adjusted EBITDA the related expense (i.e., compensation expense related to the realized portion of performance fees and investment income included in this adjusted EBITDA). We apply such a haircut to this source of earnings to reflect our view that these earnings are less reliable than management fees, since performance fees are dependent upon achieving positive investment returns above a hurdle rate. We apply the 50% haircut to a five-year smoothed average because, while a five-year period may not cover a full economic cycle, we believe it appropriately addresses the potential volatility of this source of income. We believe a 50% haircut is applicable to both incentive fees and carried interest--all referred to as performance fees. We believe the level of volatility exhibited in these two sources of income has been sufficiently comparable to preclude any difference in treatment. We do not incorporate unrealized net performance fees or unrealized net investment income in the calculation of adjusted EBITDA because a firm's ability to realize the cash flow benefit of these sources of revenue is less certain (as is the timing and amount the firm will actually receive) than with those qualified as realized. We believe our 50% haircut to the five-year average of

realized performance fees and realized investment income sufficiently accounts for the historical volatility we have observed in these realized performance fees and realized investment income. However, if we expect these realized performance fees and realized investment income to remain significantly impaired over an extended period of time (i.e., at least three to five years), we could apply a haircut of up to 100% in our adjusted EBITDA calculation. We use adjusted EBITDA in our profitability, interest coverage, and leverage metrics. For most asset managers, we determine one core ratio--debt to adjusted EBITDA--in accordance with S&P; Global Ratings' ratios and adjustments criteria as adjusted for realized performance fees and realized investment income. For a few of the asset managers, we consider debt to adjusted total equity as the core ratio (see table 9). These particular asset managers operate hybrid models that more greatly emphasize investing their own funds' permanent capital in the form of debt or equity investments in underlying portfolio companies, generating interest and investment income (in addition to their sizable general partnership [GP] investments in underlying funds), along with managing third-party assets from which they generate management and performance fees. Some asset managers also carry significant on-balance-sheet investments, which are the result of seed capital for new funds or investments in alternative asset classes that diversify the business mix away from their core business of managing third-party assets. In such cases, debt to adjusted total equity (ATE) can be an important additional indicator of leverage in the context of the material on-balance-sheet risks they carry. A sole focus on cash flow leverage would result in an incomplete picture of financial risk. ATE is calculated as reported equity less goodwill, intangible assets, and unrealized portfolio appreciation or depreciation. Equity investments in all finance companies and equity in structured vehicles (CLOs and collateralized debt obligations) that the firm manages are also not included to account for the amplified leverage resulting from such investments. Table 9 Assessing Debt To Adjusted Total Equity ASSESSMENT DEBT TO ADJUSTED TOTAL EQUITY (X) Minimal <0.4 Modest 0.4-0.8 Intermediate 0.8-1.5 Significant 1.5-2.0 Aggressive 2.0-3.0 Highly leveraged >3.0 Time horizon ratio calculation We generally calculate a company's credit ratios based on a three-year weighted average: previous one year's results, our current-year forecast (incorporating any reported year-to-date results and our estimates for the remainder of the fiscal year), and our forecast for the next fiscal year. It is difficult and often impractical to forecast beyond the next fiscal period because of the lack of visibility of top-line revenues. Management fees and performance fees are based on AUM or investment performance, which, like stock prices, cannot be forecasted with a high degree of accuracy. We place greater emphasis on forward-looking estimates, which incorporate upcoming debt maturities and expected debt issuance/refinancing, than on historical ratios. As we forecast realized performance fees for asset managers, we would consider the net accrued performance fees on the balance sheet of an asset manager because we believe this can be a good indicator of the level of performance fees that could be realized in future periods. We generally weight the previous year, the current year, and the next fiscal-year forecast as 20%, 40%, and 40%, respectively. Specifically, we apply the aforementioned weights to the core and supplemental ratios for the respective years to get to one final ratio for each metric, which we would then use in table 17 of the corporate methodology to determine an asset manager's financial risk profile. The length of the time series applied is dependent on the relative credit risk of the company and other qualitative factors, and the weighting of the time series varies according to transformational events. A transformational event is any event that could cause a material change in a company's financial profile, whether caused by changes to the company's capital base, capital structure, earnings, cash flow profile, or financial policies. Transformational events can include mergers, acquisitions, divestitures, management changes, structural changes to the industry or competitive environment, and product development and capital programs. Capital structure The initial capital structure assessment is based on the first four subfactors: Diversity of the capital structure, Debt maturity profile (or schedule), Currency risk associated with debt, and Interest rate risk associated with debt (see table 10). We may then adjust the initial assessment based on the fifth subfactor--investments--as per table 22 of the corporate methodology. (The investments assessment cannot exceed "positive.") Table 10 Assessing Capital Structure Preliminary capital structure assessment Subfactor assessments. Neutral No tier one subfactor is negative. Negative One tier one subfactor is negative and the tier two subfactor is neutral. Very negative Two or more tier one subfactors are negative; or only one tier one subfactor is negative

but the tier two subfactor is also negative. In certain cases, when an asset manager has sizable investments (GP or seed investments in underlying funds, direct investments to portfolio companies, or nonstrategic financial investments) that exceed its outstanding gross funded debt (excluding operating lease or unfunded pension liability adjustment) by at least 50% on average in the last 12 months (50% excess over gross funded debt is used to reflect the liquidity discount of these investments at time of liquidation), and we expect investments to remain at that level relative to gross funded debt over at least the next 12 months, we would assess the investments subfactor as "positive" (otherwise it will be assessed as "neutral"). A "very positive" assessment of the investment subfactor does not apply to asset managers. The positive assessment of the investments subfactor only applies to asset managers whose core ratio is debt to adjusted EBITDA (not debt to ATE) and the financial risk profile assessment is worse than (1) minimal. Furthermore, we can only assess the investments subfactor as positive if a company's financial policy, specifically related to financial discipline, supports the assessment that the potential proceeds would be used to pay down debt and all of the following apply: An estimated value can be ascribed to those investments; There is strong evidence that the investments could provide financial flexibility in the event they are monetized over an intermediate time frame; In the event of monetization, proceeds would be used to repay debt; and These proceeds would be material enough to improve existing cash flow and leverage ratios by at least one category. Glossary for Asset Managers Assets under administration (AUA).Financial properties that are managed by a bank or financial institution on behalf of clients. AUA are beneficially owned by clients, and all investment decisions pertaining to these assets are also made by clients. Services offered by asset administration providers include custodial and tax-related duties. Carried interest.Carried interest, or carry, is a share of the profits of an investment or investment fund that is paid to the investment manager in excess of the amount that the manager contributes to the partnership. As a practical matter, it is a form of performance fee that rewards the manager for enhancing performance typically in private equity strategies. Incentive fees.Incentive fees are a form of performance fees that are typically related to funds where the underlying assets generate a coupon, such as mezzanine debt mostly found in hedge fund strategies. The Auto and Commercial Vehicle Manufacturing Industry Country Risk 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; The extent to which government actions have either stabilized or destabilized the market, for instance, through regulatory actions or by enforcing import tariffs; and The extent to which a government would support the transition to sustainable mobility in the industry (i.e. pushing investment in infrastructure, favoring the development of local supply chains). 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. 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. Competitive position group profile The CPGP generally assigned to global auto and commercial vehicle manufacturers is capital or asset focus. 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. Competitive advantage 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, powertrain, 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' cyclicality 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.). 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. 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. 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 development of alternative channels (including digital), the characteristics of its sales force, and, where applicable, the financing capabilities that support its network. 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, especially in the area of electrification, connectivity and autonomous driving 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. 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. Scale, scope, and diversity 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. 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. Recent changes in domestic regulations have led to the removal of restrictions on foreign ownership caps for companies making fully electric and plug-in hybrid vehicles in 2018, for makers of commercial vehicles in 2020, and the wider car market by 2022. From a credit perspective, we view joint ventures somewhat less favorably than operations through fully owned subsidiaries because joint ventures, by nature, imply less control over strategic decisions and cash flows. 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. 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. 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. 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. Operating efficiency 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;/SG&A; expenses/overhead profile, and EBITDA/operating margin metrics over the cycle. We may also consider FOCF to sales ratio trends relative to peers across the sector. This analysis often incorporates extended periods (historical and projected years) to normalize the impact of short periods during which a company is making heavy investments for future growth or is undergoing large restructuring charges. 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. 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, or FOCF/sales as an additional measure, 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 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. 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 ROC or FOCF/sales, 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). Level of Profitability As with other manufacturing activities, we use EBITDA margin as the primary indicator of an automaker's or truckmaker's level of profitability. 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. 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. Supplemental Ratios 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; 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 DCF as the most relevant supplemental ratio. 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. The Auto Supplier Industry Competitive position group profile The CPGP assigned to auto suppliers is capital or asset focus. Competitive advantage Our assessment of competitive advantage for global auto suppliers includes a review of the following: Market position, strategy, product mix, product service and quality, and value proposition; Ability to cater to complex and

evolving regulatory and political environments because of increasingly stringent fuel economy, safety, and emissions standards (and costs), related shifts in technology, barriers to entry; and R&D; and design and engineering capabilities and investment. We view a demonstrated track record of boosting market position and improving scale as a significant determinant of an auto supplier's ability to spread overhead costs, better serve customers globally, and efficiently leverage their R&D; expenditures over a wider range of products. There can also be marketing, distribution, and purchasing advantages. To the extent information is available, we measure an auto supplier's percentage market share by product segment or product line and by geography. We do not have absolute levels for evaluating market share. Given the variety of end-markets and segments within the auto supplier sector, we evaluate market share in several ways because a 20% market share in a segment with three to four larger competitors may not be sufficient to gain any meaningful competitive advantage, while a 20% share in a segment with 15 lesser competitors could indicate a strong competitive position. We monitor longer-term trends in market share--up or down--which may indicate favorable or unfavorable product mix compared with current marketplace demand. Investment in design, engineering, R&D;, and supporting technology is critical, given the increasing complexity of today's parts and vehicles. We believe that suppliers that spend more on R&D; than the industry average, typically enjoy the highest reputations for product quality and also benefit from above-average growth. Custom-engineered products enhance the value a supplier provides to its customer by differentiating appearance or performance and may also serve to reduce customer churn. Innovation is important to sales stability, growth, and margin protection because of competitive pressure to improve offerings, increasing customer requirements, and cost pressure from rising input costs. Automakers rely on suppliers that provide advanced technology to improve the functionality of their products through innovation. Where applicable, we analyze R&D; as a percentage of sales (against industry averages) and the track record of success through new product introductions when information is available. In redesigning a vehicle, quality enhancements might also lead to fewer part counts for individual car models, potentially lowering overall production costs. An auto supplier with a strong or strong/adequate assessment of its competitive advantage typically is characterized by any combination of the following factors: Price premium commanded (relative to other suppliers) given dominant market positions within a subsegment; Portfolio of high-value-added products such as turbochargers advanced powertrain, active safety, or autonomous driver assistance system components rather than commodity-like products such as automotive interiors or metal stampings. Suppliers with a portfolio of technologically advanced products with a track record of innovation support and considerable pricing power. Among the large number of auto suppliers that lack any significant pricing power against the much larger OEM customers, we tend to view those that have demonstrated the ability to reduce costs and offset annual price reductions demanded by customers more favorably. Prospects for higher organic growth versus overall industry through sizable backlogs, sustainability of new business wins and/or benefits from high-volume platforms and technology. Good track record of enhancing market position through small bolt-on acquisitions focused on enhancing technology or improving supply chain integration rather than large acquisitions, which, in any case, are rare. Auto suppliers typically use acquisitions to improve revenue growth, expand product lines, consolidate market share, achieve cost synergies, and to access superior technology. Proven capability to quickly develop a wide range of products and be able to manufacture them in large quantities at low cost possibly through vertical integration resulting in the development of strong relationships with the large automakers to win new business. For instance, in-house capability allows certain suppliers to develop equipment at up to 30% lower cost than molding lines at their OEM customers. Proven R&D; capabilities that are likely to deliver differentiated, superior product or service. This is demonstrated by recognized technology leadership and a backlog of awards for new customer programs that better position an auto supplier to design products that address emerging technological and regulatory requirements for vehicles, for example in new powertrain, autonomous driving, and vehicle digitization/connectivity. This assists in solidifying the long-term business relationship with its large automaker customers. By becoming not just a supplier of parts, but rather a supplier of technologies and capabilities, a parts supplier creates barriers to entry for competitors. Suppliers that command pricing power due to their presence in subsegments (such as casting and forging) where substantial capacity was permanently taken out, demonstrated by

lower-than-industry average price reductions demanded by OEM customers and EBITDA less capital expenditures margins, which compare favorably with most rated suppliers. An auto supplier with a weak or adequate/weak assessment of its competitive advantage typically is characterized by a combination of the following factors: Past track record suggests high likelihood of loss of meaningful business with existing customers, or potential for losing market share within their end-markets possibly because of price competition from larger players or from the lack of superior technology. It could also result from competitors that benefit from lower labor costs, lower tax rates, and, in some cases, export or raw materials subsidies. Suppliers that operate in subsegments, which are less capital intensive (e.g., a few tier 2 suppliers, and several tier 3 and aftermarket suppliers) and competitors can enter relatively easily and gain credibility with customers. Relatively weak negotiating leverage (and possibly low content per vehicle) with larger automakers and with their own vendors. Weak perception of business strategy based on an auto supplier's historical performance and how realistic we view its forward-looking business objectives (price versus the competition's, sales or profit growth, and required investment levels). Mostly commodity-type products (e.g., several aftermarket suppliers) making the company more vulnerable to economic downturns, or if there is a potential for a rising level of technological risk in its business segments, such as batteries. No significant pricing leverage with its larger and more powerful customer base. Innovation-led track record is unproven, reputation build is a work-in-progress (e.g., due to recent emergence from Chapter 11 or recent foray into new end-markets). Scale, scope, and diversity Our assessment of scale, scope, and diversity for global auto suppliers includes: End-market diversity (e.g., customer base, platform and segment, and geography; the degree of alignment with global production; and presence in a relatively stable aftermarket). The extent of diversification determines the ability of an auto supplier to offset the impact of regulatory, environmental, product liability, or safety issues, by region. Size of revenue base and its position within the industry help to determine business strength and operating flexibility. We expect international expansion to be a continued focus of growth strategies for the next few years with the globalization of vehicle platforms and powertrains. Increasingly, both size and scale are becoming key competitive differentiators for new program wins as automakers expand worldwide and industry consolidation continues. Suppliers' fortunes are closely linked to their customers' fortunes and the vehicle platforms they supply. Many automakers are choosing to work with fewer suppliers, so size and critical mass are important. While it can be very beneficial for a parts supplier to embed its components in one or more auto platforms, this can prove to be a double-edged sword if the platform and/or manufacturer encounters lack of success and financial difficulties. Within the light-vehicle market, despite recent improvements in fuel-efficiency across the board, we would view a company's significant exposure to light trucks and SUVs, relative to passenger cars, as a potential risk if gasoline prices again surge past historical peaks, causing consumers to purchase more passenger cars. There is an emerging trend toward developing technologies that are cost effective or that aim to meet new and upcoming regulatory standards for fuel-efficiency technology and safety. For instance, automaker alliances and trends toward alternative powertrains and smaller vehicles will raise demands on suppliers, some of whom will benefit. A key factor we consider is the ability to compete in difficult markets as a supplier to automakers that require global capabilities, scalability, product innovation, and solid financial health from their tier 1 suppliers. New products offering increased value to customers enable suppliers to reset the price base, also easing price pressures. An auto supplier with a strong or strong/adequate assessment of its scale, scope, and diversity typically is characterized by a combination of the following factors: Very broad range of customers (top three customers typically accounting for less than 30%); manufacturing footprint closely aligned to global production; and wide range of products that lead to prospects for cross-selling and potentially winning new business across subsegments within the auto sector. Revenues come from a wide product range across multiple platforms, and/or subsegments (e.g., infotainment, safety, fuel efficiency, and aftermarket) that are not strictly correlated. For instance, companies with a presence in the replacement parts business (including collision repair) or industrial end markets are better positioned to navigate periods of weakness for the broader industry because their sales are less correlated to vehicle production, which is often volatile. However, mere presence in countercyclical segments such as replacement parts or components for heavy trucks would not necessarily lead to a favorable assessment because our analysis is in conjunction with the extent to

which competitors operate within the same segments. Favorably viewed bargaining strength with auto manufacturer customers and raw material or subcomponent suppliers to secure alternative supply (if and when necessary) without incurring substantial switching costs. Meaningful market share that indicates a broad range of operations, products, or services. This also involves qualitative haircuts to market shares if a company operates within a niche segment (e.g., tire pressure monitoring and valve manufacturer rather than a broader industry segment like critical powertrain and transmission components). Strong ability to deliver sustainable growth, impact business trends, and industry pricing owing to the magnitude of size (measured by revenue) in relation to other participants. Volume stability (relative to peers') especially when demonstrated during an economic downturn, or if relative stability has been achieved with lesser price-downs to OEMs than competitors. Demonstrate above-average resiliency to typical supply chain risks (e.g., weak suppliers, geographic concentration, or natural or manmade disasters), although it would be rare for a supplier to be able to meet this test. An auto supplier with a weak or adequate/weak assessment of its scale, scope, and diversity typically is characterized by a combination of the following factors: Revenues come disproportionately from a narrow product line, which we might view as compounding the risk of exposure to a small geographic market and, thus, assess its scale, scope, and diversity component as weak. Within this set of suppliers, we rank favorably those we believe have at least a credible plan to increase customer diversity through profitable net new business (potentially with its nondominant customers) in the next three to five years. Relatively weak negotiating leverage (and possibly low content per vehicle) with larger automakers and their own vendors, and a lack of scale to manufacture at a low cost. Significant risk from having substantially all of its manufacturing capacity and customers concentrated in one region without any product diversity or exposure to the more stable aftermarket (top three customers typically accounting for more than 50%). Vulnerable to supply chains risks, possibly from overreliance on a critical supplier or a high-impact, low-probability event, which can often break even the most sophisticated supply chain, even if only temporarily. Such failures, although rare, could quickly gain momentum and result in a negative rating action. Shrinking market share or loss of profitable contracts, suggesting diminishing prospects for future profitability. Operating efficiency Our assessment of operating efficiency for global auto suppliers includes: The degree of flexibility in cost structure, fixed or variable costs; Sensitivity to raw material and energy costs and ability to pass on cost increases; and Working capital management through the business cycle. We gauge the track record of flexibility in adjusting excess capacity in a timely manner. Some suppliers have a proven ability to reduce labor costs by successfully sourcing more components and subassemblies from countries with lower labor costs compared with automakers. Even unionized suppliers tend to have a lower wage structure than the automakers. As a result, the pressure to reduce costs will only increase over the intermediate term. Being a low-cost manufacturer of automotive components is critical, given the pricing pressures exerted on the industry by automakers, many of which are facing their own pressures to reduce costs and raise weak profits. Suppliers tend to have lower labor costs than the automakers because of typically lower union representation and also industry dynamics related to number of competitors and price pressure from customers. However, the demonstrated track record of an auto supplier (which can vary considerably across companies) combined with our perception of their future ability to manage these costs through economic cycles is another distinguishing factor we use to assess operating efficiency. Furthermore, underinvestment leads to the risk of potential downtime and production losses, which could severely hurt profitability over the short term and lead--more importantly--to long-term volume loss for customers. The auto supplier industry is highly capital intensive and ongoing investment in the efficiency of production capabilities is often necessary to maintain a company's cost position. We may also consider FOCF to sales ratio trends relative to peers across the sector. This analysis often incorporates extended periods (historical and projected years) to normalize the impact of short periods during which a company is making heavy investments for future growth or is undergoing large restructuring charges. Auto suppliers are in a competitive industry with an increasing global footprint. As such,, the ability of a supplier to pass along currency swings by adjusting its prices to its foreign customers is also important. Short-term changes in exchange rates can challenge auto suppliers that routinely operate in a global context as they strive to remain price competitive to sustain profit margins. An auto supplier with a strong or strong/adequate assessment of its operating efficiency typically is

characterized by a combination of the following factors: Ability to control "cost creep" by managing fixed costs (the ratio of selling, general, and administrative expenses/sales) better relative to peers, in an upcycle. Managing capacity utilization at least in line with their OEM customers' peak-to-trough guidelines and estimates point to the adequate range of 50% to 80% but can vary depending on how it is determined and/or reported), in light of typically high industry operating leverage. Demonstrated ability to mitigate substantial exposures to commodity prices swings through (a) long-standing pass-through mechanisms with customers; (b) value-added product or services, which lend pricing power; or (c) a regularly refining surcharge mechanism to more closely reflect most current composition and timing of input costs. Companies that have a track record of or are likely to demonstrate flexibility to volatile production schedules from customers by quickly readjusting inventory levels. Auto suppliers that effectively employ financial instruments to hedge certain of these exposures to at least partially insulate them from currency fluctuation effects. Other ways to mitigate this risk include working directly with their customers or one of its own subsidiaries, to offset this risk through better pricing of the component parts sold to foreign customers. Flexible labor costs (e.g., larger proportion of workforce as temporary, especially in regions where severance costs are very high) and a track record of good relationship with workforce unions to minimize the risk of costly strikes. In addition to our qualitative opinion on the above, we view favorably issuers that demonstrate short cash conversion cycles (defined as days' investment in inventory and receivables less days' investment in accounts payable), especially since it gives them flexibility to redeploy capital more effectively. An auto supplier with a weak or adequate/weak assessment of its operating efficiency typically is characterized by a combination of the following factors: Lack of pass-through mechanisms (less than 50% recovery) and exposure to commodity price volatility, which is accentuated if margins are below industry average). Working capital financing needs tend to increase when raw material prices rise, and those suppliers that lack effective pass-through costs to customers--an issue that has caused financial distress in the past--we view negatively. Poor track record of managing input costs for companies that have a business model supporting benefits from improved sourcing resulting from vertical integration (e.g., battery recycling or casting and machining). Significantly high operating leverage (ratio of a company's contribution margin to profits), low level of cost flexibility, limited track record of sustained profit margins through the cycle, or companies with sustained operating losses. Poor track record displaying inability to restructure manufacturing footprint in a timely fashion and potentially improve capacity utilization. Evidence of operational missteps (even one-time events that lead to subsequent factory downtimes) and lack of diligence regarding investment and maintenance of production assets. Level of Profitability We use EBITDA margin as the primary indicator of an auto supplier's profitability level and compare auto component suppliers against peers in the context of the overall industry in which the company operates, not just in its narrower subsector. In addition, we may look at qualitative factors, for example, capital intensiveness, to compare companies within the broader industry in which they operate because capital expenditures are needed to maintain the asset base, which in turn allows for profit. Since depreciation is often a very good approximation of the capital expenditures required to maintain the asset base, we may use ROC as a supplemental measure to compare companies that do not have significantly different capital structures. Supplemental Ratios Given that the auto suppliers in general are capital-intensive companies with moderately high working-capital requirements, we complement the analysis of core ratios with an analysis of FOCF to debt. Cash flow is typically volatile for auto part suppliers and there can be meaningful variation from one year to another, depending on the timing of product launches and the level of new contract wins or losses. We closely evaluate the working capital cycle and capital expenditure requirements when analyzing an auto supplier's financial risk profile. Auto suppliers that win supply agreements for a large number of new platforms are often characterized by lower cash flow from operations given the launch costs associated with fixed asset and working capital investments needed to execute on those business wins. Cash flow would typically improve considerably as these announced business launches meet expected production schedules. Working capital can be a significant call on cash. Companies in the sector typically invest in inventories and receivables during periods of sales growth, putting pressure on cash generation, which can result in a meaningful funding need. We evaluate working capital management based on the past track record of managing inventories and payments terms (often dictated by OEMs) over the business cycle. We have

seen that some suppliers have been able to release working capital from inventory and receivables during periods of sales declines. Consequently, we focus more on the track record of FOCF (after working capital and capital expenditure-related cash flows), potentially across cycles, rather than funds from operations (FFO). Though we may view consistency of free cash flow as a key consideration in distinguishing the financial risk profiles of auto suppliers, we do not necessarily penalize companies that experience growth-related cash outlays. This is as long as we believe that such new business investment supports future cash flow generation based on our assessment of a potential improvement in competitive position for its product and services. The Branded Nondurables Industry Competitive position group profile The CPGP assigned to most nondurables consumer products companies is services and product focus. Private-label manufacturers tend to be included in this profile but could also be classified as capital or asset focus. Although we seldom do, we may assign the capital or asset focus CPGP to those nondurables consumer products companies requiring sizable capital investment and asset outlays to sustain competitive position. The corporate methodology generally consider a capital-intensive company as having a ratio of ongoing capital spending to sales of greater than 10%, or depreciation to sales of greater than 8%. We may assign this CPGP to a company with a lower capital spending or depreciation to sales ratio than stated above if a sizable asset base and infrastructure is crucial to its operation. For example, private-label manufacturers typically attempt to achieve cost leadership, which requires continual reinvestment in infrastructure and technology. In these cases, operating efficiency is a relatively more important component in our competitive position assessment. Competitive advantage In assessing the competitive advantage of a nondurables consumer products company, we consider the following: Brand equity; Market share, and ability to defend and increase market share; Effectiveness of marketing strategy and sales force; and Pricing power and purchasing power. In reviewing brand equity, we consider a company's brand strength, or lack thereof. Brands commanding a clear price premium demonstrate strong brand equity and reputation. Companies successfully leveraging existing brand names into new product categories also show strong brand equity and reputation. Asset impairments or the potential for asset impairments of brands may indicate poor brand equity and reputation. We use third-party independent brand rankings and valuations that measure the strength of brands and year-over-year trends where available to support our assessment. In reviewing a nondurables consumer products company's market share and ability to defend or increase its market share, we consider the company's share in its categories, key markets, and regions in relation to market size and growth prospects. In assessing market share trends we consider the company's performance in recent periods as well as prospectively, as a company that is able to defend and increase share is more likely to adjust its strategy to evolving market conditions, be more innovative, enjoy some pricing advantage, and maintain sales growth and profitability, even during adverse economic conditions. In reviewing a nondurables consumer products company's marketing strategy and sales force, we consider the performance of new product introductions and product innovation to measure marketing strategy and sales force effectiveness. We assess the trend of new products revenue as a percent of total revenue and degree of favorable sales mix that should benefit margins. In assessing a nondurables consumer products company's pricing power with key customers and purchasing power with key suppliers, we consider the company's ability to pass through direct cost increases or avoid accepting cost increases. An evaluation of gross margin trends among direct competitors can provide a quantitative measure of the company's ability to pass along cost increases. We also consider information provided by management about customer and supplier relationships when assessing pricing and purchasing power. A nondurables consumer products company with a strong or strong/adequate competitive advantage assessment typically has a combination of: Products that typically command a price premium relative to competitors thanks to its brand equity, helping the company's bargaining power with customer base. Industry leading market shares, typically in the top two, with relatively stable or growing share in sizable categories with attractive growth prospects in key markets/regions, or globally relative to other participants in the industry. An effective business strategy, as evidenced by maintaining or strengthening share positions in the marketplace. The company's strategy may be cost leadership and/or product differentiation, and its actions should be consistent with its strategy. Competitors typically find it difficult to achieve a comparable low-cost position or to offer a comparable product. A consistent and realistic business strategy maximizes opportunities and

minimizes risks relative to competition. A demonstrated track record of product development and innovation, as evidenced by a continuous pipeline of successful higher margin new products. Possess average to above-average gross margins relative to competitors, even during periods of high inflation. A nondurables consumer products company with a weak or adequate/weak competitive advantage assessment typically has a combination of: A limited number of lesser known brands, and products that typically do not command a premium price. A business strategy inconsistent with or not well adapted to marketplace conditions. The company lacks cost leadership or product differentiation, or its execution is inconsistent with its strategy. Competitors typically have a better cost position or stronger product differentiation. An inferior business strategy misses opportunities and increases risks relative to competition. No leading market share positions in sizable product categories with attractive growth prospects in key markets. Leading market share positions in product categories with lower growth prospects and/or a high degree of private-label competition. An inconsistent track record of successful innovation, including slowness in developing and marketing new products, and an inability to raise prices, hurting the company's position with its customers. Products that generally enjoy very limited or no price premium relative to competing brands, thanks to poor brand equity or high private-label penetration. Gross margin percentage is weaker than that of competitors in the sector. Scale, scope, and diversity In assessing a nondurables consumer products company's scale, scope, and diversity, we consider the following: Size of revenue base relative to close competitors; Range of products or services; and Diversity of sources of revenue and cash flow in terms of products, brands, and price points. We generally assume participation in a variety of attractive markets and operating scale will result in greater financial performance stability in market downturns. We measure diversity as a percentage of volume or revenues, through profitability by geography, brands, and product category, concentration or breadth of customers, manufacturing/sourcing locations, as well as concentration of key commodities. We also examine a company's exposure to emerging and mature markets. A nondurables consumer products company with a strong or strong/adequate assessment of its scale, scope, and diversity typically has a combination of: For a strong assessment, a company's net sales base is significantly larger than competitors', and the company has dominant market share on both a global and regional basis. For a strong/adequate assessment, net sales are below the level of clear leaders in the sector globally, and the company may have a leading regional share but not global share. A comprehensive range of products, product categories, and service offerings. More than five sizable brands and brand extensions with limited brand or category concentration, typically with no more than 50% of revenues from one brand or category. A company could have greater than 50% concentration in a particular category if the category's size is very large and global. Geographic diversification of revenues in several regions with a mix of exposure to developed, developing, and emerging markets, typically with no one country representing more than 50% of net revenues. A diverse manufacturing base as well as sourcing as measured by the company's ability to manufacture products in other facilities and no reliance on a single commodity for its top raw material needs. Diverse customer and distribution channels. The company does not rely on a single customer for more than 25% of its net revenues. A nondurables consumer products company with a weak or adequate/weak scale, scope, and diversity assessment typically has a combination of: A leading, but not dominant, market share in a fragmented and relatively small category or subset of a category on a regional or country basis, with limited growth prospects. It offers only a few products and participates in only a single or few niche product categories. It participates in only a few regions, typically less than two, with limited growth prospects. It has significant manufacturing and sourcing concentration, and a few key suppliers for its top raw material needs. It relies on a single or a few customers, with one customer accounting for more than 25% of revenues. Operating efficiency In assessing a nondurables consumer products company's operating efficiency, we consider the: degree of operating leverage; degree of sensitivity to raw material and energy costs volatility; company's relative cost position versus industry peers; and flexibility of its cost structure. In reviewing the degree of operating leverage of a nondurables consumer products company, we look at operating statistics such as: the percentage change in EBIT over the percent change in sales, return on assets, or invested capital. In addition, we evaluate the company's working capital productivity, such as total asset turnover, inventory turnover, and cash conversion cycle. High fixed costs relative to variable costs increase operating leverage. This provides a company with the

ability to realize scale benefits in product development and production. In determining the degree of volatility to raw material and energy costs, we consider a company's ability to limit margin deterioration during periods of rising costs, and the ability to either mitigate or offset exposure to commodity price swings. This is usually through cost reduction and the ability to pass on input cost increases. Indicators of cost flexibility may include: proportion of fixed and variable costs; degree of operating leverage; degree of vertical integration and outsourcing; labor cost characteristics, including unionized/nonunionized workforce profile and pension cost considerations; and raw material or component cost exposure, and related pass-through profile. For a company to warrant a strong or strong/adequate operating efficiency assessment, it typically has some combination of these characteristics: A high degree of size and scale that yields strong purchasing power, which can provide discounts for higher volume purchases of key input costs. Economies of scale and efficiencies that lead to better profit margins (measured by gross and EBITDA margins) than peers, taking into account differences in sales mix and average selling prices. Extensive reach and well-established distribution networks. In developed markets, most companies will have greater penetration and established sales channels. In emerging markets, most companies' reach would be less, but a stronger company may have established relationships through joint ventures or a few large customers. Operating costs as a percentage of sales that are below peer averages. Ability to adjust costs through internal efficiencies or outsourcing. For a company to warrant a weak or adequate/weak operating efficiency assessment, it typically has these characteristics: Profitability that is consistently below peers. Noncompetitive levels of operating expenses are required to increase sales. Underutilization of manufacturing facilities. A track record of execution issues or disruptions that is more likely to contribute to supply chain deficiencies and operating inefficiency. Substantial seasonality in the business and working capital requirements that could lead to excess inventory levels if seasonal demand is weaker than anticipated. Inability to adequately source raw materials relative to peers, which could be attributed to factors such as lack of size and scale, or lack of centralized procurement. Profitability EBITDA margin is the primary metric we use to evaluate profitability for consumer nondurables companies. We may also base our profitability assessment on return on capital. For example, a company with an EBITDA margin slightly below the guideline ranges may have excellent asset turnover, which boosts return on capital. In this example, we may assess the level of profitability stronger than the EBITDA margin table would indicate. Conversely, a company with an EBITDA margin slightly above the guideline ranges may have poor asset turnover, which hurts return on capital. In this example, we may assess the level of profitability weaker than the EBITDA margin table would indicate. We place less emphasis on return on capital when financial leverage is the major component in the ratio outcome, which is the case with many financial sponsor-owned companies. For this reason we do not provide guideline ranges for return on capital. We place a stronger emphasis on return on capital when financial leverage is not the major component in the ratio outcome because this section focuses on operational performance. Financial leverage is assessed as part of our cash flow/leverage analysis. We may also consider the level of profitability compared with a company's closest competitors. For example, a private-label company may have EBITDA margin slightly below the guideline ranges yet may have stronger profitability than its closest competitors. In this example, we may assess a private-label company's level of profitability stronger than its EBITDA margin would indicate. Generally, private-label nondurables companies with EBITDA margins in the high-single digit to mid-teens area are considered average. Because of the limited number of rated private-label nondurables companies, we have not included separate subsector metrics in table 2, listing EBITDA margin thresholds. Supplemental ratios If the business risk profile is in the satisfactory or better category, we tend to apply DCF to debt, since a large proportion of the companies with satisfactory or better business risk profiles have high dividend payout ratios. We would also apply other supplemental ratios such as cash flow from operations or FOCF to debt if we believe those ratios are more applicable, such as for working-capital-intensive or high-growth companies. If the business risk profile is in the fair or below category, we tend to apply the interest coverage ratios as we focus more on the company's ability to service their interest expense. Notwithstanding, if a company is working-capital-intensive or capital-intensive, or if the preliminary cash flow leverage assessment is significant or weaker, then we will give two interest coverage ratios--EBITDA to interest and FFO plus interest to cash interest--greater importance. These ratios become particularly important in our analysis

of companies that have highly seasonal businesses and resultant significant swings in working capital investment needs (such as private-label manufacturers and lawn and garden companies). These seasonal companies typically borrow intra-year, and the interest coverage ratios capture all annual interest costs. The Building Materials Industry Competitive position group profile The CPGP assigned to most building materials companies we rate is capital or asset focus because such companies require sizable capital investments and asset outlays to sustain their production and distribution facilities and market positions. We may assign a minority of building materials companies--but a higher number of building products companies--a CPGP of services or branded products because these companies are less asset-intensive, and may possess brand identity and meaningful product differentiation (home improvement products, fixtures, HVAC equipment, etc.) compared to competitors. Competitive advantage In assessing a building materials and products company's competitive advantage, we consider the following: Market share; Product differentiation, diversity, and demand; Product distribution; Pricing power and purchasing power; and Brand equity. In reviewing market share, we consider the company's revenue and sales volume share in its product categories, key markets, and regions. Market size and growth prospects are also components of this assessment. We also assess a company's past history in maintaining its market share during adverse or evolving market conditions through product innovation, pricing actions of by adjusting its market strategies. Market position can be a significant aspect of a company's competitive advantage. Companies with sizable market shares may garner some pricing advantage and maintain better sales performance than less favorably positioned competitors during adverse market conditions. Our assessment covers: Market share by sales (in terms of currency and units) or production capacity in its markets. Reputation and brand recognition; and Geographic diversity and penetration. In our assessment of product characteristics, we consider the diversity of products offered (some companies offer only one basic product, others thousands), price points, and demand characteristics (discretionary or nondiscretionary). Products range from basic commodities with little or no differentiation (cement, aggregates) to highly specialized, value-added products with wide differentiation (tools, plumbing fixtures, kitchen cabinets). We review a building materials company's method of how products are brought to market (e.g., owned vs. third party distribution, direct sales to retail or to end users, and e-commerce). Exclusive distribution arrangements, if any, can provide pricing power with key customers and purchasing power with key suppliers. Market position can dictate a company's ability to pass through cost increases or to avoid accepting or reducing cost inflation from vendors. Evaluating gross margin trends among direct competitors can provide a quantitative measure of a company's relative ability to pass along cost increases vs. peers. A building materials company with a strong or strong/adequate competitive advantage assessment typically is characterized by a combination of the following factors: A No. 1 or No. 2 market share position in its markets; Products or materials that have stable demand characteristics or command high prices and margins because of their value-added differentiation from competitors' products; The ability to raise prices when costs rise; Pricing power derived from product differentiation, high service levels, or strong brand loyalty; An effective business strategy, as demonstrated by maintaining or strengthening market share positions through cycles; A well-established distribution network, or a system that would be difficult and expensive for competitors to replicate; and Relatively attractive and diverse end markets with growth potential. A building materials company with a weak or adequate/weak competitive advantage assessment typically is characterized by a combination of the following factors: Highly fragmented markets subject to intense competition; Limited product offerings; Lack of product differentiation, brand recognition, or value-added products compared with its competitors'; An ineffective business strategy, as demonstrated by an inability to maintain market share or penetrate new markets; and Limited ability to adjust pricing to offset cost pressures or competition. Scale, scope, and diversity In assessing a building materials company's scale, scope, and diversity, we consider the following: The size of the revenue base relative to that of close competitors; The extent to which revenues and cash flows are derived from products, end markets, or geographic regions that are independent or have low correlation to each other; The number of producing assets; Product breadth and diversity; Geographic diversity; and Customer or and supplier concentrations. We generally assume that a company with a variety of attractive markets and good operating scale will have a greater degree of financial performance stability

in market downturns than peers that operate in fewer markets and have less scale. We measure diversity as a percentage of sales volume or revenues by geography, brands, and product category; concentration or breadth of customers; manufacturing or sourcing locations; and any reliance on key commodities. The attractiveness of a company's product mix is based on product maturity, growth potential, competitive advantages (price and performance), and the commodity vs. unique nature of the products. Most building materials companies serve multiple end markets (residential, commercial, infrastructure, etc.) that have widely differing cyclicality. In certain submarkets, demand can range from highly cyclical (demand from homebuilders) to very stable (demand for nondiscretionary repair and replacement materials). A building materials company with a strong or strong/adequate scale, scope, and diversity assessment typically is characterized by a combination of: Large size relative to its peers, i.e., higher revenues, wider geographic and customer distribution, and higher brand recognition than its nearest competitors; Multiple manufacturing or distribution assets; Relatively attractive product markets with growth potential; Distinct regional or international markets, which can offset regional cyclicality; A diverse range of products, serving different end-use markets at multiple price points; The ability to serve various construction markets (new residential, repair, commercial, etc.) that are subject to different economic cycles; and No more than 10% of sales from one customer unless that customer purchases multiple, distinct, and unique products from the company, (often the case with "big box" retailers). A building materials company with a weak or adequate/weak scale, scope, and diversity assessment typically is characterized by a combination of: A small or minority market share relative to its peers; Limited product offerings with little brand strength or differentiation from those of its competitors; A limited number (one to five) of manufacturing or distribution facilities; Concentration of sales or customers in one or two geographic regions; and High customer or supplier concentrations with more than 20% of sales or purchases from one entity. Operating efficiency In assessing a building materials company's operating efficiency, we consider the following factors: Age, size, efficiency, and location of production assets; SG&A; expenses and margins; Ability to raise prices to pass on cost increases; Vertical integration; and Investment and maintenance of production assets. Operating efficiency is a critical aspect of a building materials company's competitive position because most materials and products are subject to pricing pressures and varying demand. High operating efficiency achieved by minimizing manufacturing and other operational costs and embedding flexibility in the cost base (i.e., a higher percentage of variable costs) may result in better relative profitability and cash flow over the business cycle. The age, size, and location of production assets influences operational efficiency. Newer, more scalable production assets and well-maintained plants can be more efficient and have lower energy costs and staffing requirements. Production plants located close to customers tend to have low logistical costs, but this needs to be balanced with labor and energy costs, labor availability, and other key materials costs (wood, metals, resins, etc.). Given that most building materials companies have extensive sales and distribution assets, SG&A; costs can be significant. The ability to control these costs in periods of rapid growth and to quickly reduce them in periods of contraction can have a meaningful effect on profitability. Vertical integration, although requiring more capital, enables a company the benefit of sourcing its own component parts and, less commonly, raw materials (sand, gravel, extruded vinyl, aluminum castings, etc.) rather than paying a supplier for production, logistics, and the applicable margin. Also, efficient and/or owned distribution of finished products, such as HVAC, roofing materials, and flooring products, is also usually a positive factor because a shorter distribution chain usually results in higher and more stable margins. The building materials and products industry is moderately capital-intensive but with a high degree of variation among companies, e.g., high in some subsectors like cement and low in product distribution. Ongoing investment in efficient production is often necessary to maintain a company's cost position. A building materials company with a strong or strong/adequate operating efficiency assessment is typically characterized by a combination of: Low-cost production and distribution assets relative to its peers'; Stable SG&A; expense margins over a cycle; Vertical integration in manufacturing operations that provides a cost advantage; Ability to quickly reduce costs in periods of falling demand; and Greater-than-industry-average gross profit and EBITDA margins. A building materials company with a weak or adequate/weak operating efficiency assessment typically is characterized by a combination of: High-cost production assets relative to its peers'; Higher average SG&A; expense margins than those

of similarly sized peers; Limited ability to raise prices to pass on raw material and energy cost increases; and Lower-than-industry-average gross profit and EBITDA margins. Level of profitability Although we consider the general ranges in table 2, listing EBITDA margin thresholds, when determining a company's level of profitability, we place greater emphasis on profitability measures among comparable companies in a subsector, i.e., cement manufacturers to other cement manufacturers. We also recognize that even companies with similar product mixes could have significant variations in margins depending on where the companies operate, such as in mature or emerging markets, and the point in the local industry cycle. For example, during the up cycle, certain cement manufactures can earn in excess of 40% EBITDA margins in some emerging markets, while EBITDA margins might be closer to 20% in mature markets. Aggregates producers, even at the trough of a cycle, can often earn in excess of 20% EBITDA margins because of limited local competition, while a window manufacturer's margin could well be negative at the trough. Therefore, we consider peers when determining the level of profitability among comparable companies. We also consider product mix and vertical integration. For example, ready-mix concrete is typically a low-margin business, but it can increase the market penetration of a vertically integrated company's higher-margin cement or aggregates sales. By being vertically integrated, companies have more control over their supply sources and capture additional margin that otherwise accrue to a vendor or supplier. Supplemental ratios Cash flow from operations (CFO) to debt--For most building materials and products manufacturers and distributors, we consider this the most relevant supplemental ratio because of the large sources and uses of cash resulting from intra-year and multi-year working capital swings. FOCF to debt--This ratio provides insight into excess cash flow available to meet capex requirements and other discretionary and nondiscretionary obligations. We may use this ratio in certain cases, for example for heavy material or other asset-intensive building materials companies that can demonstrate sustained curtailment in capex during periods of low capacity utilization. EBITDA to interest--We may use this ratio as the most relevant supplementary ratio when our preliminary cash flow/leverage assessment derived from the core ratio is significant or weaker (for instance, for financial-sponsor-owned companies). The Business And Consumer Services Industry Competitive position group profile The CPGP we assign to most business and consumer services companies is services and product focus. We would assign the capital or asset focus CPGP to those few service companies requiring sizable capital investment and asset infrastructure to sustain competitive position. The corporate criteria generally consider a capital-intensive company as having ongoing capital spending to sales of greater than 10%, or depreciation to sales of greater than 8%. We may assign this CPGP to a company with a lower capital spending or depreciation to sales ratio than stated above if a sizable asset base and infrastructure is crucial to its operation. For example, some distributors have capital spending to sales ratios of less than 3%, yet their fleet and warehouse infrastructure is an important aspect of their competitive position. Competitive advantage In assessing the competitive advantage of a business and consumer services company, we consider: Business strategy; Brand equity and reputation; and Market position. In reviewing business strategy, we consider a company's relative success, or lack thereof, at establishing leadership positions in the markets in which it competes, and at protecting or growing market shares in a profitable manner. We assess market shares by key markets and regions, when available. We also look for trends in share and consider the attractiveness of the key markets and regions in which the business operates. We compare the relationship between revenue growth and sales force or advertising growth. A sound marketing strategy and effective sales force is especially important for companies pursuing a differentiation strategy or looking to expand into new segments. If successful, revenue growth should follow advertising growth and sales force hiring. We also review a company's acquisition strategy to assess how it may increase or decrease competitive advantage. Many business and consumer services issuers supplement organic growth with growth through acquisitions, especially those participating in highly fragmented markets, where scale can provide an advantage. Over time, a successful acquisition strategy can enhance competitive advantage. In reviewing brand equity and reputation, we consider a company's brand strength, or lack thereof. Brands commanding a clear price premium demonstrate strong brand equity and reputation. Companies successfully leveraging existing brand names into new service categories also show strong brand equity and reputation. Brand strength is typically confirmed with

market share gains, above-average profitability, and premium pricing. Asset impairments or the potential for asset impairments may indicate poor brand equity and reputation. In reviewing market position, we consider how a company's position may create barriers to entry. The company's ability to integrate its service offerings into a customer's operations enhances its market position. Also, a company's ability to bundle services helps its market position. Selling multiple services to a customer increases switching costs, reflected in higher customer retention rates and contract renewal rates. A business and consumer services issuer with a strong or strong/adequate competitive advantage assessment is characterized by a combination of: Business strategy capable of supporting its leadership in the marketplace. The company's strategy may be either cost leadership or differentiation (in few cases both), and its actions should be consistent with its strategy. Competitors find it difficult to achieve a comparable low cost position or to provide a comparable service offering. The company's customer retention rates are above its peers. A consistent business strategy maximizes opportunities and mitigates risks relative to competition. Strong brand equity and reputation created through a superior track record of service quality that convinces customers that their purchase has the right balance between price and quality. Superior quality helps a company attract and retain customers. High contract retention rates and the ability to cross-sell new services typically reflect superior service quality and customer satisfaction. Favorable market position with the existence of barriers to entry that effectively reduce, or even eliminate, the threat of new market entrants. Barriers exist when companies are able to integrate their service offering into a customer's operations, perhaps through information technology or staff. Barriers also exist when companies have the ability to perform multiple services on a national or multinational basis. Customers with national or multinational reach usually prefer to limit its number of service providers, which creates entry barriers for new competitors. A business and consumer services issuer with a weak or adequate/weak assessment of its competitive advantage typically is characterized by a combination of: Business strategy inconsistent or not well adapted to marketplace conditions. The company lacks cost leadership or differentiation, or its actions are inconsistent with its strategy. Competitors typically have either a better cost position or better differentiation. The company's customer retention rates are below those of its peers. An inferior business strategy misses opportunities and increases risks relative to competition. Poor brand equity and reputation with a portfolio of services proven to be susceptible to extraneous factors, including aggressive actions by competitors. The inability to increase the volume of existing service offerings or to expand through new service offerings typically reflects weakness relative to competition. Unfavorable market position with a lack of barriers to entry that make the company vulnerable to competitor actions. Revenue typically declines from relatively small pricing movements by competitors. A lack of differentiation, poor service quality, and ease of migration to a new provider typically make companies most vulnerable to competitive pressure. Scale, scope, and diversity In assessing the scale, scope, and diversity of a business and consumer services company, we consider: The relative size of its revenue base and that of its target markets; and The degree of revenue and profit diversity, as measured through customer, supplier, geography, and service mix. We assume that participation in a variety of attractive target markets and operating scale will generally result in greater financial performance stability during market downturns. As such, we consider the size of a company's revenue base relative to close competitors. The size of the company's target markets also influences our assessment. Scale is especially important for a company seeking a cost leadership strategy. We assess diversity through a variety of measures. We measure customer, end-market, and service diversity by revenue and profitability, depending on information availability. We also examine a company's revenue and profit mix between developing and developed markets. We also measure purchases from top suppliers as a percent of total purchases. A business and consumer services issuer with a strong or strong/adequate assessment of scale, scope, and diversity typically is characterized by a combination of: Not reliant on a particular customer or end-market, or on a group of customers or end-markets. Group purchasing organizations (GPO) either do not exist or exist but have little negotiating power. Not reliant on a particular supplier or group of suppliers. Broad geographic diversification and not overly dependent on a single regional or local market. Offers a wide range of services. A business and consumer services issuer with a weak or adequate/weak assessment of scale, scope, and diversity typically is characterized by a combination of: Reliant on a particular customer or end-market, or on a group of

customers or end-markets. GPOs exist and have strong negotiating power. Reliant on a particular supplier, or on a group of suppliers. This is particularly relevant for distributors exposed to the pricing of the products it distributes, especially if the product demand is discretionary. The distributor's exposure can be direct or indirect. Indirect exposure relates to the potential volume decline because of reduced consumption following a price increase. Narrow geographic focus and reliant on a single regional or local market. Offers a limited range of services and does not demonstrate the ability to expand its service offering over the foreseeable future. Operating efficiency In assessing the operating efficiency of a business and consumer services company, we consider: Expense structure; Working capital management; Per unit metrics; Reinvestment needs; and The ability to withstand lower demand or input cost pressures relative to industry peers. In reviewing expense structure, we consider a company's ability to flex staff or inventory levels without hurting service quality. We assess trends in direct labor expense as a percent of revenue, when available. We also assess fill rates when inventory is a major part of the business model, which is the case for distribution services. In reviewing working capital management, we consider a company's cash conversion cycle and total asset turnover. With the exception of distribution services companies, accounts receivable trends are generally the driver of working capital because most service companies have low inventory requirements. In reviewing per unit metrics, we generally consider revenue and profit per employee, per facility, and per vehicle. Per employee metrics are generally most relevant for asset-light general support services and professional services companies, whereas per facility and per vehicle metrics are generally most relevant for asset-intense distribution services companies. These metrics are most useful for comparison among close competitors operating in similar markets. In reviewing reinvestment needs, we consider the level of reinvestment necessary to maintain existing operations. Maintenance capital expenditures, as a percent of revenue, is the most common metric we use in our assessment. We either use our own estimate of maintenance capex, or we receive management's estimate of maintenance capex. A company's historical overinvestment or underinvestment in its operations influence its reinvestment needs. A business and consumer services issuer with a strong or strong/adequate operating efficiency is characterized by a combination of: Superior cost position to permit above-average profitability even if capacity utilization or demand levels are below ideal levels. For example, distributors with good route density allows for a superior cost position. Ability to adjust staff levels to changes in demand without hurting product and service quality. For example, sales and marketing agencies demonstrate the ability to flex staff levels to match demand through the use of full-time, part-time, and seasonal staff, even while maintaining a national presence. Superior working capital management, with a track record of consistent working capital levels. Solid investment in technology and infrastructure has helped revenue and profit growth prospects. A business and consumer services issuer with a weak or adequate/weak operating efficiency is characterized by a combination of: Limited capability to manage fixed costs (mostly staffing costs). Inferior cost position relative to peers, possibly from union labor or inefficient facilities. Poor working capital management, with a track record of volatile swings in working capital, typically from delayed receipt of customer payments. For example, a company with significant revenue from government agencies is vulnerable to payment delays. Lack of investment in technology and infrastructure that leads to a higher cost structure and less efficient operations relative to its peers. Profitability We use EBITDA margin as the primary metric to evaluate the level of profitability for business and consumer companies, with the corresponding guidelines in table 2. Because the business and consumer services industry contains a diverse universe of companies, a company's level of profitability category and its EBITDA margin may not always align with table 2. Given the disparate nature of business and consumer services companies, some industry subsectors may not align well with the sectors listed in table 2. In these instances, we may also consider profitability relative to peers in determining our profitability assessments. For example, most foodservice distributors, a subsector of distribution services, have EBITDA margins between 2% and 6%. Therefore, a foodservice distributor with an EBITDA margin of 6% could receive a level of profitability assessment of above average, even though table 2 shows distributors with 6% EBITDA margins as average. Volatility of profitability When a company's EBITDA is distorted as a result of significant acquisitions or currency fluctuations, we will determine SER based on EBITDA margins or return on capital, if, in our opinion, those measures provide a more accurate picture of the underlying stability of earnings. We will not use return on capital

for companies that have undergone significant merger and acquisition (M&A;) transactions. Significant M&A; transactions--most typically LBOs--distort the return-on-capital ratio, given the write-up of asset values (typically goodwill) following these transactions. Supplemental ratios We generally use FOCF to debt for issuers with low working capital and capital expenditure requirements. For these issuers, there is a small difference between FFO and FOCF. Therefore, the FFO-to-debt ratio may understate an issuer's cash flow available for debt service because it does not consider the low working capital and capex requirements, thereby understating the cash flow adequacy and leverage assessment. We generally use DCF to debt for issuers with low working capital and capex requirements yet high-dividend payout ratios. For these issuers, DCF to debt is a more appropriate ratio because it assesses cash flow available after dividends. Excluding DCF to debt from the ratio analysis may overstate an issuer's true cash flow available for debt service, thereby overstating the cash flow adequacy and leverage assessment. Many business and consumer services issuers that are owned by financial sponsors have debt with noncash interest. For these issuers, we give greater importance to FFO cash interest coverage as a supplemental ratio. The Capital Goods Industry Competitive position group profile The CPGP assigned to most capital goods issuers is capital or asset focus. Many capital goods companies manufacture products that are at least somewhat technically different and that require moderate capital investments to sustain their market position. However, exposure to cyclical demand patterns often makes operating efficiency the most significant determinant of competitiveness. We may assign the service and product focus CPGP to capital goods companies that have a consistently lower-than-industry-average fixed capital intensity (i.e., they sustain a capex to sales ratio of less than 2%), have a highly identifiable brand and competitive standing in their market segment, or generate a significant portion of sales (more than one-third) from service revenues. Competitive advantage In assessing a capital goods company's competitive advantage, we consider: Its business strategy and market position; Its product or service profile, including differentiation attributes and bundling characteristics; The effectiveness of its distribution strategy; and If applicable, its track record of execution on project work and the characteristics of its business backlog. In reviewing strategic positioning, we consider a company's relative success, or lack thereof, at establishing leadership positions in the markets in which it competes and at protecting or profitably growing market shares. We consider a company's positioning in the context of the industry segments in which it operates, including the growth prospects, barriers to entry, capital intensity, and supply-demand balance profile of those markets. For capital goods companies with long production lead-times, we also consider trends in book-to-bill ratios and backlog levels relative to industry peers as important indicators. In reviewing a capital goods company's product or service profile and differentiation and bundling characteristics, we consider the degree of product uniqueness, customization, or specification in the company's portfolio, as well as its technology and engineering expertise, including product development and innovation capabilities or manufacturing know-how. The ability to sell both new equipment and aftermarket parts (especially if proprietary) and servicing contracts will also often enhance a competitive position by increasing customer switching costs and providing a more stable, typically higher-margin income stream. In reviewing the effectiveness of a capital goods company's distribution strategy, we consider the characteristics of its sales force, distributor, and/or dealership network, including the ability to support technical product sales and cross-sell company products, timeliness in responding to customer demand, and footprint and exclusivity characteristics. Strong distribution channels often act as effective barriers to entry. In certain segments of the industry, the ability to provide financing to customers can be a differentiating competitive advantage by effectively supporting product sales. For capital goods companies that are involved in engineering projects, a demonstrated strong track record of good project execution will, in addition to technical competencies, often be a key advantage in securing new contracts and customer loyalty and will enhance pricing power. Conversely, a subpar track record of project execution, in addition to hurting profitability, will often hinder a company's ability to win new contracts and may limit pricing power. A capital goods company with a strong or strong/adequate competitive advantage assessment typically has a combination of the following characteristics: Successful strategic positioning, 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; A high degree of

product technology, quality, or service differentiation that commands name/brand recognition and pricing power/leadership; Some degree of leverage with customers and some evidence of customer retention, achieved, for instance, through long-term supply contracts, long-standing relationships, product specification into customers' end-products, an extensive/exclusive distribution network, proprietary aftermarket parts, servicing contracts, or a combination thereof; Some degree of leverage with suppliers; and A strong track record of project execution, if applicable. A capital goods company with a weak or adequate/weak assessment of its competitive advantage typically has a combination of the following characteristics: Absence of a clear strategic advantage, reflected, for instance, by a lack of leadership or near-leadership market positions or eroding market positions; Participation in industry segment(s) with unfavorable medium- or long-term growth prospects and/or supply-demand balance; A lack of differentiated brands or products that command pricing power/leadership; A lack of customer stickiness compared to the industry or peers (e.g., low customer retention and contract renewal rates, high backlog cancellation rates, or a lack of aftermarket/service revenues and ease of switching); A lack of leverage with key vendors and suppliers; and A lack of a track record or a subpar track record on project and contract execution. Scale, scope, and diversity In assessing a capital goods company's scale, scope, and diversity, we consider: The relative size of its revenue base and that of its target markets; The depth and breadth of its product offering; The degree of its end-markets' diversity; The geographic balance of its sales, its profits and manufacturing footprint; and The degree of its customer and supplier concentration. We generally assume that participation in a variety of attractive markets will allow for a more stable financial performance in market downturns, although some downturns are so extreme that all markets are severely affected. The relative attractiveness of a capital goods company's markets (in terms of size, expected growth, cyclicality, barriers to entry, intensity of competition, etc.) and how that company is positioned in those markets influence our assessments of scale, scope, and diversity and competitive advantage. Demand for capital goods companies' products can often be characterized as early, mid-, or late-cycle, depending on how demand for those products correlates to the general economic cycle. In addition, product production cycles in the industry range from short (days) to long (months or years). Capital goods companies that have a balanced market and product profile typically have more stable revenues and profits than those focused on a more concentrated product portfolio. A capital goods company that warrants a strong or strong/adequate assessment of scale, scope, and diversity typically has a combination of the following characteristics: A large revenue base and target markets relative to that of other participants in the industry, typically supported by significant product breadth and diverse business segments, revenue mix, and profit sources; Participation in a variety of industrial end-markets that have generally favorable long-term growth prospects and are not closely correlated; A good balance of new equipment and replacement, aftermarket, and service revenues; A geographically diversified revenue base and production footprint; and No significant unmitigated customer or supplier concentration. A capital goods company warranting a weak or adequate/weak assessment of scale, scope, and diversity typically has a combination of the following characteristics: A limited revenue base and/or target markets relative to other participants in the capital goods industry, or a lack of diversity in product mix, revenue, and profit sources; Participation in only a few markets, markets that have limited growth prospects, or markets that are closely correlated; Limited geographic diversification (especially for capital goods companies operating in segments of the industry where competition is global) or a concentrated production footprint; and An elevated degree of customer or supplier concentration (for instance, the largest customer accounts for 10% or more of sales or operating profit or the 10 largest customers account for 25% or more of sales or operating profits) that is not mitigated by the customer's or supplier base's characteristics. Operating efficiency In assessing operating efficiency for a capital goods company, we consider: Its relative cost position versus industry peers; The flexibility of its cost structure in absorbing demand declines or input cost pressures; and Its cost management and working capital characteristics. To the extent a capital goods company's operations are efficient, it should be able to generate better profit margins than peers that compete in the same markets, whatever the prevailing market conditions. In reviewing a capital goods company's relative cost position compared to that of its peers, we primarily consider its EBITDA margin profile, supplemented by various indicators of cost efficiency and capital intensity, such as gross margin and SG&A;/sales and capex/sales ratios. A company's overall cost and margin profile, as well

as that of its various reporting segments, are important in our analysis. In reviewing the flexibility of a company's cost structure, we consider its ability to limit margin deterioration in a downcycle by reducing costs and to pass on increases in input costs. Indicators of cost flexibility may include the proportion of fixed and variable costs, the degree of operating leverage, the degree of vertical integration and outsourcing, labor cost characteristics (including a company's unionized/nonunionized workforce profile and pension cost considerations), its exposure to raw material or component costs, and its related pass-through profile. We consider a company's cost management by reviewing its track record of reducing costs during good and bad times, the effectiveness of its restructuring programs and, where applicable, lean manufacturing programs, its track record at successfully integrating acquisitions, and its working capital management metrics. For companies that typically carry a backlog of orders or project work, we also consider production lead-time versus their peers, the margin profile of projects in backlog, and the degree of project risks to which companies are exposed. This is relevant, for instance, for power equipment, rail infrastructure, or other companies that undertake engineering procurement and construction contracts. A capital goods company with a strong or strong/adequate operating efficiency assessment typically has a combination of the following characteristics: Profitability, as measured primarily by EBITDA margins, that is consistently higher than its 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, a low-cost footprint or sourcing, automation, customer proximity, vertical integration benefits, effective quality controls, overhead costs at competitive levels, or a combination thereof; A relatively flexible cost structure, often evidenced by lower operating leverage compared to its peers, a good ability to adjust labor costs in a downcycle or to limit labor cost inflation, or limited profit sensitivity to fluctuations in raw material prices; A track record of ongoing cost structure improvements, such as structural labor cost reductions, low-cost sourcing, footprint reduction, and debottlenecking, achieved during bad and good times; and Favorable cost management metrics compared to its peers over the business cycle, including in areas of working capital management, asset utilization (for instance, plant capacity or rental fleet), supply chain management, acquisition integration, or, where applicable, project work. A capital goods company with a weak or adequate/weak assessment of its operating efficiency typically has a combination of the following characteristics: Profitability, as measured primarily by EBITDA margins, that is below its peer group (after taking into account differences in sales mix that also affect profit margins); Some evidence of cost disadvantage, possibly from structural overcapacity; higher-than-average input costs for labor, components, and material; or noncompetitive levels of SG&A; A cost structure that's less flexible than average, for instance due to a high fixed or semi-fixed cost structure, labor inflexibilities, an outdated asset base or production technologies versus its peers, an inefficient degree of vertical integration; or high profit and margin sensitivity to fluctuations in raw material costs; A history of restructuring actions without tangible savings benefits or of operational missteps (for instance, quality or lead-time issues); and Unfavorable cost management metrics compared to its peers, including in areas of working capital, asset utilization, supply chain, acquisition integration, or, where applicable, project work. Supplemental ratios We generally use the following supplemental ratios for capital goods companies: FOCF/debt as the preferred supplemental ratio. Working capital and capex cycles can significantly shape capital goods companies' cash flow generation patterns. In the early stages of a downturn, capital released from liquidating inventories and trade receivables has historically helped companies achieve FOCF/debt ratios 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. However, if the core ratios are improving, we may choose not to use the supplementary ratio negative adjustment. For equipment rental companies, we also frequently adjust the cash flow and leverage assessment in the direction of the FOCF/debt ratio. These companies typically incur significant capex in an upturn to maintain and rejuvenate the rental fleet, but let the fleet age and often cut back capex spending to minimal levels in a downturn. 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 half of their FOCF to shareholders through

dividends, we may consider DCF to debt as the most relevant supplemental ratio. The Commodity Chemicals Industry Competitive position group profile The CPGP assigned to most commodity chemical issuers is commodity focus/cost driven. We may assign the commodity focus/scale driven CPGP to commodity chemical companies in industry segments where costs are comparable among peers and competitive advantage is achieved primarily through scale. Competitive advantage In assessing the competitive advantage of a commodity chemical company, we consider its: Market position and the robustness and sustainability of its business strategy, and Ability to maintain sufficient capital investment and execute projects successfully. Commodity chemical companies that are able to defend or grow market share are unlikely to gain a pricing advantage but might enjoy a more favorable cost position or better relationships with suppliers and customers. A company's ability to select and execute strategies aligned with its strengths in the markets it participates in is important to building competitive advantage. Such execution requires research and development (R&D;) and technology capabilities. In addition, because many capital projects take several years to complete, a track record of competent market forecasting and good project execution are imperative to maintaining long-term profitability. A subpar or limited track record of successful capital investment would limit competitive advantage and likely result in weaker profitability. A commodity chemical company with a strong or strong/adequate competitive advantage typically has a combination of: Leading or near-leading market position and successful strategic positioning 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; Some evidence of leverage with customers and recurring customers, achieved, for instance, through long-term supply contracts or long-standing relationships; Strong R&D; and technology capabilities; and Strong track record of identifying, funding, and executing well-timed capacity or product line expansions. A commodity chemical company with a weak or adequate/weak competitive advantage typically has a combination of: Meaningfully weaker or eroding market position and strategic positioning than leading competitors in the 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; Limited or no R&D; or technology capabilities; and Limited or lack of a track record of identifying, funding, or executing well-timed capacity or product line expansions. Scale, scope, and diversity In assessing the scale, scope, and diversity of a commodity chemical company, we consider: The relative size of its revenue base and that of its target markets; The depth and breadth of its products; The diversity of its raw material inputs and end markets; The geographic diversity of its sales, profits, and manufacturing; and Its level of supplier and customer concentration. We expect commodity chemical companies with greater scale, scope, and diversification in these areas to exhibit more stable earnings and cash flow, based on less exposure to event risk and/or fluctuations in the market. Many rated issuers in the commodity chemicals industry are relatively small niche players with limited product and geographic diversity and high dependence on relatively few customers or end markets. As a result, they tend to be highly sensitive to small changes in demand, market share loss, or other adverse market conditions. A commodity chemical company that has strong or strong/adequate scale, scope, and diversity typically has a combination of: Large revenue base and/or target markets relative to other participants in the industry; Well-diversified portfolio, in which all products are not subject to the same external factors such as raw material prices, regulations, or cyclicality; Products aimed at a wide array of not closely correlated end markets with an adequate balance of cyclical and noncyclical demand and favorable supply-demand fundamentals; Geographically diversified revenue base and production footprint in both developed and developing markets; and Well-diversified raw material supplier base and no significant dependency on any single raw material, and well-diversified customer base. A commodity chemical company with weak or adequate/weak scale, scope, and diversity typically has a combination of: Revenue base and/or target markets of limited size relative to other participants in the industry; Narrowly focused product portfolio, resulting from participation in a very small number of end markets, regions, or product categories that have limited growth prospects or that are closely correlated to one another; Reliance on a single raw material or single source thereof; Concentration of production at a single facility or a very small number of facilities; and Elevated customer or supplier concentration (for instance, 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 In assessing operating efficiency for a commodity chemical company, we consider: Its cost position relative to industry peers, The flexibility of its cost structure in absorbing volatility of demand or input costs, and Its flexibility of production. In evaluating a commodity chemical company's cost position compared with that of its peers, we primarily consider its EBITDA margin, as well as other indicators of cost efficiency and capital intensity, such as margin over raw material costs, capacity utilization rate, and capital spending to sales. Cost position relative to peers is particularly important for many commodity chemical companies. Because the cost of raw materials and production can vary by region, the relative costs and availability of raw materials, energy, and labor can significantly affect a company's cost of production and, thus, its profitability. In addition, proximity to key end markets can have a considerable impact on transportation costs for bulky or hard-to-ship chemicals. Companies that are able to reduce or use different inputs--whether entirely different inputs or different grades of the same material--can enhance profitability and improve their competitive positions relative to peers that do not benefit from the same flexibility. A commodity chemical company with a strong or strong/adequate operating efficiency assessment typically has a combination of: Profitability, as measured primarily by EBITDA margins, that is consistently higher than that of peers (after taking into account differences in sales mix that also affect profit margins); Evidence of a sustainable cost advantage, possibly from economies of scale, production efficiencies through low-cost footprint and sourcing, near-optimal operating rates, best-in-class production technology, or customer and end-market proximity; Internal sourcing of raw materials or beneficial long-term supply contracts for raw materials and energy inputs; Evidence of a flexible cost structure, including lower operating leverage than peers, good ability to adjust labor costs in down cycle, low-cost sourcing, good working capital management, ongoing measurable lean manufacturing practices, or limited profit sensitivity to raw material prices fluctuations; Flexibility to optimize global production by altering the balance of raw material inputs or shifting production to more favorable facilities; and High degree of vertical and/or horizontal integration of operations. A commodity chemical company with a weak or adequate/weak assessment of its operating efficiency typically has 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, high-cost footprint and sourcing, suboptimal operating rates, outdated production technology, or poorly situated production facilities; Somewhat constrained access to raw materials; Evidence of an inflexible cost structure, including higher operating leverage than that of peers, an inability to adjust labor costs, poor working capital management, limited ability to invest in ongoing efficiency improvements, or high sensitivity to raw material cost fluctuations; and Limited or lack of production flexibility. Supplemental ratios In addition to our analysis of a company's core ratios, we also consider supplemental ratios to develop a fuller understanding of its financial risk and refine our cash flow analysis in accordance with the global corporate criteria. We generally use for commodity chemical companies: FOCF to debt as the preferred supplemental ratio when the cash flow and leverage assessment indicated by the core ratios is intermediate or stronger. Working capital and capital expenditure cycles can significantly shape commodity chemical companies' cash flow generation patterns. Alternatively, in less common cases, we might use cash flow from operations to debt for highly working capital-intensive companies (i.e., a working capital-to-sales ratio greater than 25%) or DCF to debt for companies with unusually large dividend distributions (greater than 50% of FOCF). Debt service coverage ratio, EBITDA to interest, when the cash flow and leverage assessment indicated by the core ratios is significant or weaker. For such companies, the ability to service outstanding debt on a near-term basis is more important. In less common cases where non-cash interest represents a significant portion of interest expense, we might use a ratio of FFO plus cash interest paid to cash interest paid. The Consumer Durables Industry Competitive position group profile The CPGP assigned to the majority of consumer durables issuers is services and product focus. We may assign the capital or asset focus CPGP to consumer products companies that exhibit a sizable capital investment to sustain competitive position. Many consumer durables companies manufacture products that exhibit at least some degree of technical differentiation and require moderate capital investments to sustain their market position. But operating efficiency is the most significant determinant

of competitiveness for the more capital-intensive companies due to the operating leverage and cyclicality of demand. Competitive advantage In assessing the competitive advantage of a consumer durables company we consider its: Global market positions; Extensiveness of presence in consumer markets and in channels of distribution; Strategy regarding balancing volume growth and margins. Product range and differentiation versus competition; Brand equity, product innovation, and underlying price power; and Capital spending plans on production, innovation, sales and marketing. In reviewing a company's business strategy, we assess its ability to establish leadership positions in the markets in which it competes, and at protecting or growing market shares in a profitable manner. Companies need to adjust their strategy to evolving market conditions like demand growth prospects, industry supply capacities, and the level of promotional activity. We review the company's ability to reach customers for its products and look at its presence in the large consumer markets. We also consider the distribution strategy, notably the variety of channels and relationships with main retailers. Wide and fast-growing distribution channels can reach more prospective customers. The ability to participate in promotional activity can help support sales growth. We also consider manufacturers' support of their key retail accounts through favorable payment terms. We assess the number of product segments in which a company operates and the size of its product range in each of these segments. We review a company's track record in launching new and successful products. We consider the degree of product uniqueness against the competition. Consumer durables companies that are able to offer differentiated products or services or to capitalize on a strong brand name will generally benefit from greater pricing power, and often greater customer loyalty than those offering more commoditized products. Manufacturers need to constantly reinvest cash flows in modernizing production capacities to improve productivity; in research and development to support product innovation and differentiation; in sales infrastructure to increase the presence in all distribution channels and to reach consumers; and in marketing to promote the brand and support the pricing power. We think both large and smaller players are price-takers on raw materials sourcing, with limited ability to achieve procurement discounts. Strong brand equity can protect gross margin through the ability to raise prices without adversely affecting sales volumes. A consumer durables company with a strong or strong/adequate competitive advantage assessment typically is characterized by a combination of: Global or regional leading market positions, and a business strategy that supports profitable growth. A significant presence in the largest and in fast-growing consumer markets. Large product range and presence in the most dynamic product segments, and a superior track record of product innovation, and customer satisfaction. Strong brand equity that provides the product a clear price premium relative to most competitors. A demonstrated ability to reinvest in the manufacturing base and a track record of successful product launches. Ability to maintain volume growth and strong pricing power. A consumer durables company with a weak or adequate/weak assessment of its competitive advantage typically is characterized by a combination of: Business strategy that is inconsistent or not well adapted to marketplace conditions. The company is a small local manufacturer in a declining market. Most products are commoditized and could be replicated at lower cost by competitors. Weak brand power, no price premium relative to competing brands, and an inability to raise prices when raw materials prices rise without losing market share. Low level of investment on product innovation and production capacities. Scale, scope, and diversity In assessing the scale, scope, and diversity of a consumer durables company, we consider: The size of its revenues and earnings base in the context of the size and growth potential of its product segments and geographical markets; The depth and breadth of its product offering; The geographical diversity of its sales and earnings; The level and localization of the production capacities and presence in main distribution channels; The degree of supplier and customer concentration. We generally assume that presence in a number of markets will make for greater stability in market downturns, although some downturns are so extreme that one or several regions could be severely weakened. The relative attractiveness of the markets (in terms of size, expected growth, cyclicality, barriers to entry, intensity of competition, etc.) and how the company is positioned in those markets influence our assessments of scale, scope, diversity, and competitive advantage. A large product offering and a presence in several product segments generally supports revenue stability as it enables a company to offset a decline in sales in a particular segment. Consumers are more likely to turn to a brand that provides a large range of innovative options to a need. . We consider geographical diversity as important. A decline in

consumer demand for durable goods in a particular region or country can often be offset by more positive market dynamics in another region or country. Hence a worldwide manufacturer is generally better positioned to cope with drops in demand in one or several specific markets compared to a national player facing the same prospects. The size and location of production facilities will enable the company to meet demand levels. Usually companies have large production facilities near the large consumer markets. However, they need to adapt their production capacities to demand trends. The size and global reach to consumers is also important and we assess whether products are widely distributed through major retailers or only available in certain outlets, and whether companies use online retailing or rely on more traditional retail distribution networks. We see the concentration risk of suppliers and customer (generally retailers) as an important factor for a manufacturer. The default of a major supplier can severely disrupt the supply chain and lead to the stoppage of the production process. This in turn will mean lower volumes and problems supplying customers on time. The default of a major customer could lead to a large number of unsold products and, thus, loss of revenues and lower operating cash flow. To the extent the manufacturer can recover its merchandise, there would typically be additional inventory and transportation costs, and the products may ultimately be sold at a discount. A consumer products company that warrants a strong or strong/adequate assessment of scale, scope, and diversity typically is characterized by a combination of: Large size of production capacities, and large revenue and EBITDA base. A comprehensive range of products or service offerings, or a large portfolio of well-known brands. Geographically diverse earnings in markets with favorable growth prospects. Large and geographically diverse manufacturing base as well as sourcing. Diverse customer and distribution channels with no large single-name concentration. A consumer products company warranting a weak or adequate/weak assessment of scale, scope, and diversity typically is characterized by a combination of: Small industrial size, revenue, or earnings base. A single product or limited range of products. Presence only in a few markets. A small manufacturing base, or reliance on unique and/or declining distribution channel. Significant manufacturing and sourcing concentration, or high reliance on a single or few customers. Operating efficiency In assessing operating efficiency for a consumer durables company, we consider its: Flexibility of its cost structure in absorbing demand declines or input cost pressures. Cost management and working capital management. Relative cost position versus industry peers. In reviewing cost structure flexibility, we consider a company's ability to limit margin deterioration in a down cycle through cost reduction, and to pass on increases in input costs. Indicators of cost flexibility may include: proportion of fixed versus variable costs, degree of operating leverage, productivity and capacity rates, raw materials and components cost exposure, labor and pension costs, and flexibility of labor contracts. We consider a company's cost management by reviewing its record of cost reduction during good and bad times, the effectiveness of its restructuring programs and lean manufacturing programs, its track record at successfully integrating acquisitions, and its working capital management, especially regarding inventory and cash conversion. To the extent a 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, whatever the nature of the prevailing market conditions. Compared to peers, we primarily consider EBITDA margin level, gross margin, and/or SG&A; as percent of revenues. A consumer durables company with a strong or strong/adequate operating efficiency assessment typically is characterized by a combination of: Large size and scale that yield strong purchasing power on key input costs with ability to hedge raw materials price volatility. Strong ability to manage working capital swings and operate with high capacity utilization. A flexible operating cost structure: ability to rapidly adjust production and fixed costs (measured via SG&A; as percent of revenues) to market demand. A consumer durables company with a weak or adequate/weak assessment of its operating efficiency typically is characterized by a combination of: Inability to adequately source and hedge raw materials, which could be attributed to lack of size or procurement deficiency; low average capacity utilization of manufacturing facilities; high and rigid labor costs. Inability to control operating costs due to a rise in raw material prices and supply-chain deficiencies. Higher fixed cost structure than peers, leading to swings in profitability as soon as demand for the products drops. Supplemental ratios We view FOCF to debt as the preferred supplemental ratio. Working capital and capex spending cycles can significantly shape patterns of cash flow generation for consumer durables companies. In the early stages of a downturn, capital released

from working capital has historically helped companies achieve FOCF to debt ratios that are stronger than FFO to debt, and we may adjust the cash flow and leverage assessment accordingly. Conversely, during a business upturn, increased working capital needs can depress the FOCF to debt ratio, suggesting a lower cash flow 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. For companies that return a large portion of their FOCF to shareholders through dividends, we may consider DCF to debt as the most relevant supplemental ratio. If the preliminary cash flow leverage assessment indicated by the core ratios is significant or weaker, then two coverage ratios, FFO plus interest to cash interest and EBITDA to interest, will be given greater importance as supplemental ratios. These ratios become more important in our analysis of companies with significant intrayear working capital swings that are typically funded by debt. Volatility adjustment We typically classify furniture manufacturers as either volatile or highly volatile, depending on historical performance within various subsectors, and we generally classify high-growth companies as highly volatile. The Containers and Packaging ("Packaging") Industry Competitive position group profile The CPGP assigned to packaging issuers is capital or asset focus. Competitive advantage 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. 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 that may not be attractive to larger players. 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 relaunch 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. 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. 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) realize higher growth. We view participation in less stable markets, such as industrial and protective packaging applications, less favorably when we assess competitive position. 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. 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). A packaging company's demonstrated strong track record in executing capacity expansions, product launches, and proven product innovations 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, create 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. 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 products with 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, and maintaining new and existing customers supporting overall pricing power and profitability. 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, or of maintaining new and existing customers supporting overall pricing power and profitability. Scale, scope, and diversity 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. 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. 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. 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. 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 long-standing relationships with customers. 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 than another. End-market diversity limits the impact of seasonal- and weather-related factors for beverage and food packaging. We also review geographic diversity in the context of a company's ability to benefit from growth in emerging regions, which offsets mature demand in developed countries. 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. 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. 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 of (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 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. 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. 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. 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 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. 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 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. Glass is significantly more capital and energy intensive, and susceptible to raw material (e.g., 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. In the plastic packaging segment, we generally view film and flexible packaging producers less favorably than we view 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. 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. 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 SG&A; 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. Supplemental ratios We generally use for packaging companies: 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 DCF as the most relevant supplemental ratio. The Contract Drilling Industry Competitive position group profile The CPGP assigned to the majority of offshore contract drilling issuers that we rate is capital or asset focus. We apply it to businesses that

primarily compete on cost or require sizable capital investments and asset outlays to sustain market position. The CPGP assigned to the majority of onshore contract drilling issuers that we rate is commodity focus/scale driven because they largely depend on the spending levels of the exploration and production (E&P;) industry, which, in turn, depends on expectations for hydrocarbon prices, particularly crude oil and natural gas. Competitive advantage In assessing the competitive advantage of a contract drilling company, we consider: The degree of technological complexity of its equipment and sophistication of assets (asset quality); Its revenue visibility and the characteristics of its backlog of business; Its market position and customer relationships; and Its operating track record. Higher-quality assets, either in terms of lower average age or higher percentage of high-specification rigs in the fleet, can translate to higher margins and lower volatility over the course of a cycle. When considering a company's revenue visibility and backlog quality, we consider the length and terms of contracts and the ability to enhance stability and predictability of revenue and cash flow. We also take into account the seasonality of drilling activities when applicable. In reviewing the business strategy and market positioning of a contract driller, we consider the characteristics (such as growth prospects and supply/demand balance) of the specific industry subsegments/markets and regions the company participates in. Contract drilling companies with well-maintained equipment, exemplary safety and environmental records, and skilled crews are better positioned to have strong, lasting relationships with major oil companies and large independent companies. These customers are desirable because they typically plan sizable, multiyear drilling programs well in advance, their capital expenditures tend to be larger and less volatile than those of smaller upstream firms, and they have better credit quality. Safety and environmental controls are important because they lessen the risk of catastrophic operating failures. A contract drilling company with a strong or strong/adequate competitive advantage assessment typically has a combination of: A fleet of relatively new and high-specification drilling rigs (drillships, late-generation semisubmersibles, and heavy-duty jack-up rigs) well-suited for premium deep-water or harsh-environment drilling; A substantial amount of business being conducted under long-term contracts, which provide protection of future revenue and margins, providing companies with some protection against adverse changes in market day rates and competition from other companies through the duration of the contract; Participation in industry segment(s) with favorable medium- and long-term growth prospects and/or supply-demand balance characteristics; and A strong operating track record, including good safety and environmental records, well-maintained equipment, skilled crews, customer service excellence, and long-standing relationships with high-quality customers. A contract drilling company with a weak or adequate/weak assessment of its competitive advantage typically has a combination of: A fleet composition weighted toward lower-specification or commodity drilling rigs (low horsepower onshore rigs, standard jack-ups); The prevalence of short-term or spot contracts and/or high revenue seasonality; Participation in industry segment(s) with unfavorable medium-/long-term growth prospects and/or supply-demand balance characteristics; and A weak or short operating track record, a lack of established relationships with major oil companies, and/or high-risk customers. Scale, scope, and diversity In assessing the scale, scope, and diversity of a contract drilling company, we consider: The relative size of its fleet, The degree of geographic, product line diversity, and markets served; and Its degree of customer concentration. Contract drilling companies with well-diversified fleets tend to exhibit less performance volatility than those that have large concentrations in a few geographies. A driller's presence in multiple markets improves its geographic diversity and competitive position through an enhanced ability to serve larger customers. Major E&P; companies perceive a benefit of contracting with companies that have greater geographic reach and are better able to support global operations. Companies with stronger assessments of geographic diversity operate in five or more basins with no significant concentration of assets in a single basin. On the other hand, issuers with weak assessments of geographic diversity are those that focus on one or two regions accounting for the vast majority of assets employed. We note that offshore contract drillers have the ability to "follow the demand" and redeploy assets in other geographic regions, which we view as a positive rating factor. In considering the geographic mix of a company's operations, we consider exposure to particular country or jurisdiction risk factors that are relevant for the contract drilling industry to the extent that they are not sufficiently captured in the general country risk assessment in our view. These may include inferior local logistic support and infrastructure or the

nature and extent of oil and gas drilling specific regulation. In assessing customer diversity, we consider the percentage of revenues and profits generated by each of the top 10 customers. We take account of our own assessment of the competitive prospects of the major customers and their likely future exploration and development spending. We also take account of customers that have a history of paying their suppliers erratically at times, which is the case for certain national oil companies. A contract drilling company that warrants a strong or strong/adequate assessment of scale, scope, and diversity typically has a combination of: A sizable fleet composed of multiple classes of equipment; Participation in a variety of geographical markets, with relatively little country risk; Participation in several uncorrelated geographical markets and regions with generally favorable characteristics and long-term growth prospects; and No highly disproportionate unmitigated customer concentration. A contract drilling company warranting a weak or adequate/weak assessment of scale, scope, and diversity typically has a combination of: A small number of rigs; Participation in only a few geographic markets; Participation in one or a few correlated geographical markets, with unfavorable characteristics (such as high country risk or limited growth prospects); and Significant customer concentration. Operating efficiency In assessing operating efficiency for a contract drilling company, we consider the risks associated with operating strategy, including: The company's relative cost position compared with industry peers, The flexibility of the company's cost structure in absorbing demand declines or input cost pressures (operating leverage), and The company's cost-management practices. In reviewing the relative cost position of a contract drilling company compared with that of its peers, we primarily consider its EBITDA margin profile, supplemented by various indicators of cost efficiency and capital intensity, such as gross margin and the selling, general, and administrative costs to sales and capital expenditures to sales ratios. Both the overall cost and margin profile of a contract drilling company and that of its various reporting segments are important in our analysis. In reviewing cost structure flexibility, we consider a contract drilling company's ability to contain operating costs. Indicators of cost flexibility may include historical company asset utilization rates compared with industrywide asset utilization rates; relative cost position compared with industry peers, including gross margin and EBITDA to operating margin measures over the cycle; track record of cost reduction during good and bad times and profitability levels during trough conditions (cost escalation, labor cost characteristics, and cost-cutting actions); and track record of acquisition integrations, new rig construction/mobilization/start-ups, and improvement in technology. In reviewing cost-management practices, we may assess customer contracts based on their provisions; the extent to which they afford protection against increases in such inputs as raw materials costs; payment terms and the extent to which they pose counterparty credit risk; currency; and force majeure and other exit provisions. We also analyze the enforceability of contracts not just in a legal sense, but also in a pragmatic/commercial sense. In some cases, a contract may be legally enforceable, but it is unlikely the company would take legal action against a major customer, rather than agree to renegotiate contract provisions. A contract drilling company with a strong or strong/adequate operating efficiency assessment typically has a combination of: High asset utilization rates over the cycle compared with the industry average; Profitability measures above peers over the cycle; Success in achieving cost structure improvements (such as structural labor cost reductions, low cost sourcing, footprint reduction/debottlenecking) during bad and good times; Relatively flexible cost structure (including ability to adjust labor costs in down cycle); and Good execution track record in terms of acquisition or construction and mobilization of new rigs. A contract drilling company with a weak or adequate/weak assessment of its operating efficiency typically has a combination of: Low asset utilization compared with industry averages; Profitability measures below peers due to cost disadvantage; Less flexible than average cost structure (for instance due to: high fixed/semifixed cost structure; labor inflexibilities; outdated asset base/production technologies compared with peers; inefficient degree of vertical integration); and Poor track record of acquiring or building and mobilizing new rigs. Level of profitability Given the cyclical fluctuations that characterize the performance of contract drillers, there are no fixed ranges for these financial measures that are useful on a global basis as benchmarks over a whole cycle. We emphasize comparisons with peers within the contract drilling sector. We will consider the top 25% of the peer group as above average, the middle 50% of the peer group as average, and the bottom 25% of the peer group as below average. For some subsectors, there might be a bias for profitability above average or below average

based on the strengths and weaknesses of the subsector. 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 rankings to account for financial reporting differences. Supplemental ratios In addition to our analysis of a company's core ratios, we also consider supplemental ratios to develop a fuller understanding of a company's credit risk profile and refine our cash flow analysis in accordance with the global corporate criteria. We generally use these ratios for contract drilling companies: FOCF to debt as the preferred supplemental ratio. Capital spending cycles can significantly shape contract drilling companies' cash flow generation patterns. These companies typically incur significant capital expenditures in an upturn to maintain and upgrade their fleet, while in a downturn, they typically let their fleets age and often cut back investment to minimal levels. Therefore, we frequently adjust the cash flow and leverage assessment in the direction indicated by the FOCF-to-debt ratio. Debt service coverage ratios. We may alternatively use debt service coverage ratios (FFO plus interest to cash interest or EBITDA to interest) when the cash flow and leverage assessment indicated by the core ratios is significant or weaker. DCF to debt. We may use discretionary cash flow to debt for companies that pay dividends to shareholders, where such dividends are a material portion of cash flows. We would generally not consider extraordinary dividends or share repurchases in this ratio. Such shareholder returns are generally nonrecurring, and, if they exceed cash flow, are often captured as diminished liquidity and/or increased debt levels. Financial policy We typically view as negative the lack of a credible plan to finance a high-cost rig well ahead of the delivery date. We view speculative newbuilds (i.e., not tied to a multiyear presigned contract) as especially risky. The Engineering and Construction Industry Country risk With respect to engineering and construction (E&C;) companies, the aspects of country risk that are most directly relevant include the following: The state of the country's commercial banking system and the availability of project financing; The ease of the permit, license, or entitlement processes related to new construction; and The extent to which the government seeks to stimulate construction through means such as government infrastructure spending, tax credits and rebates, and programs that indirectly benefit the contractor by supporting liquidity in the project finance market. As part of our assessment of the government's role in a construction market, we consider the government's track record and the extent to which its actions have either stabilized or destabilized the market. Competitive position group profile We assign the services and product focus CPGP to most E&C; companies because service reputation (for project execution) is a key differentiating factor in the industry and capital intensity is typically low. Alternatively, for an E&C; company that requires elevated capital investments, we may assign the capital or asset focus CPGP Competitive advantage Market position can be a significant aspect of competitive advantage. Companies with sizable market shares and better sales effectiveness may garner some pricing advantage and maintain better sales performance amid adverse market conditions. In assessing an E&C; company, we consider: Its market share in its key markets or regions as an indicator of brand effectiveness or ability to execute, Its reputation and brand recognition, Its perceived financial stability, and Its technology offering. A strong reputation is beneficial for an E&C; company to secure contracts, particularly larger contracts, and it could enhance customer loyalty and pricing power. Companies that have a strong reputation are industry leaders, in our view. These companies are known to have the capacity to operate in various regions and are recognized for successfully executing projects around the world for their global clients on time and on budget, while complying with local and regional laws and regulations. These companies also have good safety records, with a lower-than-average safety incident rate. Conversely, clients are reluctant to award contracts to lesser known companies that may not have the experience to successfully execute a contract. We view an E&C; company as having a weak reputation if the company has little or no track record of successfully executing contracts, if it has a track record of frequent project execution challenges or numerous regulatory issues, or if it has a poor safety record. An E&C; company's perceived financial stability is an important factor in its ability to continue securing work. With large projects, which can sometimes extend for years, clients seek assurance that they will not have to change contractor mid-project due to a contractor's financial distress. A strong balance sheet, with low leverage, for example, and at least strong liquidity (according to our criteria) to withstand unexpected occurrences, such as large cost overruns, often provide the necessary assurance. Furthermore, bank letters of credit (LOCs) and surety bonding lines may be

necessary for companies to bid and secure work. LOC and surety bond providers are also more inclined to work with E&C; companies that demonstrate financial stability. We view a company as having strong perceived financial stability if it has the ability to win projects based on its perceived financial stability, and if it has ample surety bonding and LOC capacity for bidding purposes. Conversely, we believe that companies that exhibit a willingness to take on more leverage exhibit a lack of perceived financial stability. Companies that have little or no surety bonding and LOC capacity also fall into this category. In reviewing an E&C; company's competitive advantage, we consider its technology and engineering offerings. E&C; companies that are able to offer differentiated services will generally benefit from greater pricing power and, often, greater customer loyalty and stickiness than those offering more commoditized services. A company has a more specialized technology offering if it has proprietary technologies or designs that are in demand by customers, in our view. Conversely, we believe that companies that provide commoditized E&C; services without any proprietary technologies or designs exhibit less specialized technology offerings. These companies are vulnerable to new competitors entering their markets and increased pricing pressure from customers. An E&C; company with a strong or strong/adequate competitive advantage assessment typically has a combination of the following characteristics: A strong reputation; An ability to win projects based on perceived financial stability, including surety bonding or LOC capacity for bidding purposes; and A more specialized technology offering. An E&C; company with a weak or adequate/weak assessment of its competitive advantage typically has a combination of the following characteristics: A weak reputation; Lack of perceived financial stability, including little surety bonding or LOC capacity for bidding purposes; and Less specialized technology offering. Scale, scope, and diversity In assessing an E&C; company's scale, scope, and diversity, we consider: The size of its revenue base or sales volume; Its geographic footprint--end-markets location, diversity, and characteristics; Its participation in a variety of attractive end-markets; The diversity of its customers and contracts; and The range of services it provides. A larger revenue base relative to its target market indicates an E&C; company's strong market position, in our view. In our assessment, we may exclude any flow-through-type revenues that an E&C; company derives from purchasing for clients material or equipment that have no associated profit. We also take into account revenues that some E&C; companies may have attributed to joint ventures that are excluded from total sales. In general, a larger revenue base can be beneficial for securing contracts, particularly larger ones, since clients are reluctant to award contracts to smaller companies that may not have the scale or resource infrastructure to successfully execute a contract. This is particularly true for global contracts that may include work in more than one region. E&C; companies with larger revenue bases typically have the market share, reach, scale, and capacity to operate in various regions and can execute projects around the world for their global clients. Conversely, having a smaller revenue base may be a disadvantage for E&C; companies bidding for some larger contract work. We generally assume participation in a variety of attractive markets will make for greater stability of financial performance during market downturns, though some downturns are so extreme that all markets are severely affected. We measure a company's diversity by the number of contracts and the size of contracts by revenue and backlog across end-markets, geographies, and clients. Diversification helps E&C; companies limit inherit risks related to any single project, geography, end-market, or client. A company with diversification appropriate for a strong or strong/adequate assessment would not be significantly affected by difficulties with a single project or customer. In addition, an E&C; company's ability to win contracts in diverse, noncorrelated markets should provide more stable revenue, especially if the various end-markets operate on different cycles. We typically view a broader range of service offerings as favorable to a company's business risk profile. Due to increasing project complexity, we view favorably companies that are able to provide services that span the lifespan of a project. E&C; companies that offer a wide range of services tend to be more successful in securing repeat contracts, capitalizing on long-term relationships with customers. In some cases, the contracts involve cooperation between the client and the constructor throughout the entire construction process in order to minimize client construction costs. In the E&C; industry, engineering and design, construction, and maintenance work are the most typical types of services offered. Along this spectrum of work, we view construction as the riskiest. We consider large, complex, first-of-a-kind, and fixed-price construction projects as the riskiest offerings due to the increased potential for cost overruns. An E&C;

company that warrants a strong or strong/adequate assessment of scale, scope, and diversity typically has a combination of the following characteristics: A large revenue base and target market relative to those of other participants in the industry; Contracts and backlogs that are well diversified by geography, end-market, client, and contract size; and A wide range of services provided, including engineering and design, procurement, construction, and maintenance work. An E&C; company that warrants a weak or adequate/weak assessment of scale, scope, and diversity typically has combination of the following characteristics: A revenue base and target market of limited size relative those of other participants in the industry; Limited diversity of contracts and contract backlogs, dominated by one or a few geographic region(s), end-market(s), client(s), and or contract(s); and A limited range of services or a niche service provided. Operating efficiency To assess operating efficiency, we analyze the following: The company's rate of contract wins, changes in contract backlog value, and order cancellation rates by market and versus its peers; The size and frequency of its contract losses; and Its cost structure flexibility. Project execution risk inherent in the E&C; industry can cause high variability in reported results. E&C; companies face a number of challenges to execute a project profitably and on time. These challenges include client cancellations and delays, change orders, client litigation, labor or raw material availability and productivity, weather events, and subcontractor risk, to name a few. Effective internal risk management policies and procedures related to project selection, management of subcontractors, and pricing can significantly improve an E&C; company's operational performance by steering it away from projects that are exposed to more risks. Our ratings assume that even some of the companies we assess as strong will experience occasional cost overruns, since it is impossible to avoid all project risks all the time. However, we view companies that have experienced infrequent, smaller cost overruns as better operators than their peers that have more frequently incurred charges against projects or very large cost overruns. Most companies in the E&C; industry have a relatively low proportion of fixed costs. However, cost structure differences arise among companies based on varying levels of vertical integration. We view a low fixed-cost base favorably, since this allows companies to quickly scale back fixed overhead during a cyclical downturn. Companies that are deeply vertically integrated, with in-house building material sites and machinery fleets that perform a bulk of the service in-house, generally have a lower degree of cost flexibility in a cyclical downturn. Vertical integration can provide direct access to strategic raw materials at a low cost in some instances, creating an advantage in times of high capacity utilization or when raw materials are in short supply. However, it can be a burden when industry capacity utilization is low due to relatively high capital intensity. An E&C; company with a strong or strong/adequate operating efficiency assessment typically has a combination of the following characteristics: A track record of several years of successful project execution, with most projects delivered on time and on budget and are profitable for the contractor; and A relatively flexible cost structure, often evidenced by lower operating leverage compared to its peers and limited profit sensitivity to labor cost inflation and raw material price fluctuations. An E&C; company with a weak or adequate/weak assessment of its operating efficiency typically is characterized by a combination of: A track record of several years of poor project execution, with a number of project delays and cost overruns, resulting in losses for the contractor; and A less-flexible-than-average cost structure due to, for instance, factors such as a high fixed- or semi-fixed cost structure or a high profit and margin sensitivity to labor cost inflation or raw material cost fluctuations. Supplemental ratios We generally use the following supplemental ratios for E&C; companies: FOCF to debt as the preferred supplemental ratio. Given that many E&C; companies can face high working capital swings (frequently due to advanced payments on projects, delays in collecting accounts receivable in a downturn, or fast growth), EBITDA and FFO may overstate financial strength. FOCF, which is determined after changes in working capital and capital expenditures, may be a more accurate measure of a company's cash flow in relation to its financial risk profile. E&C; companies tend to have fairly low maintenance capital expenditures as a percentage of sales, which benefits FOCF generation. Alternatively, for companies that temporarily exhibit atypically high capital expenditures as a percentage of sales relative to those of its peers, we may consider cash flow from operations to debt as the most relevant supplemental ratio. For companies that return more than half of their FOCF to shareholders through dividends, we may consider DCF to debt as the most relevant supplemental ratio. Volatility adjustment Many E&C; companies demonstrate volatile DCF. This is often due to large working capital swings as well as

unexpected and often large cost overruns. Therefore, we make a volatility adjustment for some E&C; companies to determine the final cash flow leverage assessment. Liquidity We note that E&C; companies, especially general contractors with large fixed-price contracts, often have sizable advanced payments that will be worked off over a relatively short period of time as the project moves from the engineering phase to the procurement and construction stages. Thus, simply focusing on total cash balance does not present the full liquidity picture. We consider the potential for the working capital swings associated with advanced payments or contract-related liabilities in our liquidity assessment. Additionally, large LOCs, often required for E&C; companies to bid on and execute these contracts, generally reduce the amount available to borrow under revolving credit agreements on a dollar-for-dollar basis, the shift towards using this financing arrangement negatively affects the construction firm's overall liquidity. The Environmental Services Industry Competitive position group profile The CPGP assigned to most environmental services companies that we rate is services and product focus, as differentiation may be achieved through service capabilities and technology innovation when competing in the marketplace. In some cases, particularly for solid waste services companies, we may use a CPGP of capital or asset focus if the particular company requires sizable capital investments and asset outlays in order to sustain its market position in the industry. Competitive advantage In assessing the competitive advantage of an environmental services company, we consider its: Market position; Quality of service; and Asset base. Market position can be a significant aspect of an environmental services company's competitive advantage, because companies with sizable market shares relative to their peers may garner some pricing advantages and can maintain better sales performance amid adverse market environments. The assessment of an environmental services company's market position includes the size of its revenue base and its market share in the key markets and regions in which it competes. An effective marketing strategy and sales force can support good market position. In analyzing the market position of the company, we also consider the degree of competition in the market. All else equal, we would view a high degree of exposure to price-competitive markets as being less favorable relative to that of specialized markets, which may be contractually protected, resulting in greater pricing power and a more stable customer base for the environmental services provider. We also consider the companies' ability to generate sales based on demonstrably better service quality as measured by on-time service and few missed pick-ups. High contract renewal rates, a good reputation, and high brand recognition in the marketplace tend to indicate good service quality. A company's access to key fixed assets such as landfills, incinerators, or other waste stream disposal sites can also provide a competitive advantage, as these important and highly profitable assets benefit from high entry barriers. It is difficult to secure the government support and permits necessary to construct some of these facilities, and the construction or acquisition (if even available) could require significant commitments of capital and time. We view vertically integrated environmental services companies as being more likely to sustain solid profitability than other companies who only control one aspect of the process. An environmental services company with a strong or strong/adequate competitive advantage assessment typically is characterized by a combination of: Leading market share positions in the markets in which it competes; Participation in favorable markets, such as those that are contractually protected instead of those that are subject to greater price competition; High quality of services provided, measured by contract renewal rates, timeliness of collection, ease of billing, favorable brand recognition, and other factors; and Vertical integration benefits and control of multiple aspects of the value chain, supported by the possession of (or cost-effective access to) key fixed assets such as landfills, incinerators, or other plant and equipment with ample capacity and high entry barriers. An environmental services company with a weak or adequate/weak assessment of its competitive advantage typically is characterized by a combination of: Lack of leadership or near-leadership positions in the markets in which it participates; Participation in unfavorable and competitive markets in which pricing gains are difficult to achieve; Unexceptional or poor service quality; and A lack of vertically integrated operations, perhaps stemming from the inability to obtain (or cost-prohibitive expense of obtaining) proprietary disposal sites or other fixed assets, which exposes the company to supplier costs. Scale, scope, and diversity In assessing the scale, scope, and diversity of an environmental services company, we evaluate: Its geographic footprint, i.e., the location and diversity of markets in which it operates; The characteristics of those markets in terms

of supply/demand and service spectrum; and Its customer and supplier concentration. We generally assume that participation in a variety of attractive markets will make for greater stability of financial performance in market downturns, although some downturns are so extreme that all markets are severely affected. We also consider the relative attractiveness of the markets (in terms of size, demographics, expected growth, intensity of competition, etc.) in which the environmental services company participates; the diversity of those markets; how the company is positioned in those markets with respect to pricing and service offerings; and its customer and supplier relationships and concentration, all of which are key determinants of its profit potential and exposure to downside risks. An environmental services company that warrants a strong or strong/adequate assessment of scale, scope, and diversity typically is characterized by a combination of: Participation in a variety of markets with favorable supply/demand fundamentals, and those markets are not closely correlated; Multiple types of service offerings; and Broad diversity of customers and/or suppliers. An environmental services company warranting a weak or weak/adequate assessment of scale, scope, and diversity typically is characterized by a combination of: Participation in only a few markets, markets that have limited growth prospects, are characterized by intense competition, and/or are closely correlated to one another; A narrow focus on a particular customer segment or type of waste stream, especially a down-scale, more competitive segment; and High concentration of customers and/or suppliers. Operating efficiency In assessing the operating efficiency of an environmental services company, we consider: Its relative cost position versus peers and scale economies; The relative flexibility of its cost structure; The efficiency of its route network and related productivity; and Its workforce characteristics. Operating efficiency is an important aspect of an environmental services company's competitive position. To the extent an environmental services 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, whatever the nature of the prevailing market conditions. Environmental services companies that achieve these advantages typically produce better operating margins than their peers because they can command better pricing and operating leverage through scale. Scale and operating efficiency are interrelated. While scale may afford only a limited amount of demonstrable pricing power among environmental services companies in small local markets, it can contribute to operating efficiency, in that larger-scale environmental services companies are better able to: Compete for national account contracts with commercial customers. Obtain better prices from fleet and equipment suppliers, leveraging centralized purchasing functions. Negotiate lower interest rates and insurance costs. Invest in up-to-date information systems, routing software, and other new technologies. We also consider its relative cost position versus industry peers; the flexibility of its cost structure in absorbing declines in demand; the ability of the company to withstand input cost pressures, including those pertaining to labor, fuel, and commodities; and its working capital management characteristics. In reviewing the relative cost position of an environmental services company compared to that of its peers, we primarily consider its EBITDA margin profile, supplemented by various indicators of cost efficiency and capital intensity such as gross margin; SG&A; costs to sales; and capital expenditures to sales ratios. Both the overall cost and margin profile of the company and that of its various reporting segments are important in our analysis. In reviewing cost structure flexibility, we consider an environmental services company's ability to limit margin deterioration in a downcycle through cost reduction, and to pass on increases in input costs. Indicators of cost flexibility may include the proportion of fixed and variable costs, degree of operating leverage, degree of vertical integration and outsourcing, labor cost characteristics including unionized/nonunionized workforce profile and pension cost considerations, fuel or third-party disposal cost exposure, and related pass-through profile. Route efficiency is important for transportation-intensive services such as solid waste collection. Advantaged companies ensure that their collection routes are optimized with regard to route length, the number of customers served, the types of waste collected, the time it takes to service a given route, and other productivity factors. An environmental services company with a strong or strong/adequate operating efficiency assessment typically is characterized by a combination of: Good economies of scale and other efficiencies that over time lead to consistently better profit margins (as measured by gross margin and EBITDA margin) than peers. Demonstrated ability to maintain overhead costs at competitive levels (shown by SG&A; costs as a percent of revenues), while maintaining effective staff functions. Highly efficient routing execution

and continuous monitoring of route efficiency in order to improve productivity. Good relations with its labor force, which may include organized labor. An environmental services company with a weak or adequate/weak assessment of its operating efficiency typically is characterized by a combination of: Consistently weak profitability, as measured primarily by EBITDA margin, relative to its peer group. The inability to maintain overhead costs at competitive levels (shown by SG&A; costs as a percent of revenues), while maintaining effective staff functions. A poor record of timely and efficient waste collection, which may be indicative of sub-optimal route efficiency and inadequate planning. A history of workforce disruptions and delays in negotiating amenable bargaining agreements with organized labor. Supplemental ratios We generally use the following supplemental ratios for environmental services companies: FOCF to debt as the preferred supplemental ratio. This statistic includes the effects from working capital and capital expenditure cycles, which can significantly shape environmental services companies' cash flow generation patterns. We may alternatively use debt service coverage ratios (FFO plus interest to cash interest, or EBITDA to interest), when the cash flow and leverage assessment indicated by the core ratios is significant or weaker. Volatility table We will infrequently use the medial or low volatility tables in certain circumstances. We apply the low volatility table to an environmental services company when it meets all of the following conditions: Its CICRA is '2' (low) or better; A majority of its revenues or EBITDA are derived from its participation in certain segments of the industry that we view as less cyclical and not particularly exposed to volatility in commodities prices, such as franchise-protected markets in municipal waste or medical waste; Its preliminary competitive position assessment is '2' (strong) or better, and; It has demonstrated a historical track record of very low volatility of profitability, characterized by a comparative SER ranking in the lowest volatility percentile (SER resulting in a volatility of assessment of '1') compared to the overall environmental services industry group, and we expect such very low volatility to continue. We apply the medial volatility table to an environmental services company when it doesn't meet all the requirements for low volatility, but meets the following conditions: It meets the first two conditions listed in above; Its preliminary competitive position assessment is '3' (satisfactory) or better; and It has demonstrated a historical track record of low volatility of profitability, characterized by a comparative SER ranking in the first or second-lowest volatility percentiles (SER resulting in a volatility assessment of '1' or '2') compared to the overall environmental services industry group (see global corporate criteria), and we expect such low volatility to continue. Financial Market Infrastructure (FMI) Companies Competitive position group profile The CPGP we assign to FMIs is national industries and utilities. Competitive advantage We assess competitive advantage as outlined in table 8 in the corporate methodology, except for these industry-specific refinements. When we assess an FMI's competitive advantage, we also consider its importance to the functioning of the markets it serves, as well as its reputation among the members and the switching costs they may face. In addition, we consider its regulatory track record. Some exchanges, clearinghouses, and central security depositories (CSDs) enjoy special privileges and/or official monopoly protection in their home markets. We call these institutions "national champions" because of their special standing in the domestic financial markets. National champions tend to have a strong competitive advantage assessment. An FMI that is not a national champion can still achieve a strong (1) competitive advantage assessment if it has both of the following characteristics: It is critical to the functioning of the financial markets and/or national economy, and It provides fast, reliable, secure, and efficient services that contribute to a valuable brand and good reputation among the members who face high switching costs. An FMI with a weak (5) competitive advantage assessment has all of the three following characteristics: It is not important to the functioning of the markets it serves, It provides subpar services that lead to an inferior brand and poor reputation among the members who face low switching costs, and It has a checkered regulatory record. Scale, scope, and diversity We assess scale, scope, and diversity as outlined in table 9 in the corporate methodology, except for these industry-specific measurements. We focus our analysis on the trends in volumes because they directly contribute to top-line revenues. Volumes can be measured in terms of the number of contracts traded (futures and option exchanges), number/value of shares traded (stock exchanges), settlement activity (CSDs), or cash/payment volumes (payment networks). For stock exchanges, we also consider the total number of listed companies and their aggregate market capitalization. For clearinghouses, we also consider open interest. For payment networks, we also consider the number of processed transactions,

accounts, and cards. For CSDs, we assess the amount of assets under custody. Our focus on diversity is to assess the relative stability of an FMI's earnings generated by its principal business activities. We measure the diversity or concentration of three key variables: products, customers, and geography. We consider the volume/revenue mix of listed instruments at derivative exchanges and listed companies at stock exchanges. For stock exchanges, we also consider the diversity of industries represented by listed companies, as well as the mix of listed domestic and foreign companies. We also consider the diversity of transaction volumes and revenue contribution by members. For payment networks, we also look at the diversity or concentration of transaction volumes and revenues by merchants. Operating efficiency We assess operating efficiency as outlined in table 10 in the corporate methodology, and also incorporate one industry-specific characteristic. The FMI industry is characterized by a high degree of operating leverage because revenues are mostly transaction (i.e., volume) based, and the expense structure contains a large fixed component, at least in the short term. Therefore, our analysis of operating efficiency focuses on these subfactors: economies of scale, expense structure, and technology. These subfactors support each other because FMI companies require large upfront investments in processing platforms and telecommunications networks. Large economies of scale can help lower overall costs. A key ratio that we monitor is operating expenses to operating revenues ("overhead ratio"). With respect to independent member-owned (utility-like) FMI companies, we deemphasize the overhead ratio (see Profitability section). Our analysis of operating efficiency does not consider manufacturing processes and working capital management (e.g., inventory turnover) because these subfactors are more relevant for industrial companies. Profitability Our profitability analysis is geared towards profit-maximizing institutions, typically corporations whose shares are publicly listed and traded. But we also recognize the FMI industry contains a number of independent member-owned (utility-like) institutions that return most, if not all, excess revenues to the members. These FMI companies tend to operate at or near breakeven (and therefore exhibit high overhead ratios) because they exclusively serve their member-owners (not third-party shareholders seeking a return on their investments). Consequently, traditional profitability metrics become less meaningful. We look favorably on independent member-owned institutions that have considerable flexibility to adjust fees or reduce rebates to changing market conditions and, by extension, exhibit strong member support. We typically assess profitability of independent member-owned (utility-like) FMI companies as either strong (1) or strong/adequate (2). We generally calculate profitability ratios based on a three-year average: previous one year's results, our current-year forecast (incorporating any reported year-to-date results and our estimates for the remainder of the fiscal year), and our forecast for the next fiscal year. It is often impractical to make projections for most FMI companies beyond the next fiscal year because of the lack of visibility of top-line revenues. Trading/clearing fees are largely determined by exchange volumes, which, like stock prices, cannot be forecasted with a high degree of accuracy. For FMIs, we use the SER calibration based on EBITDA (table 4) and EBITDA margin (table 5) for the regulated utilities industry to assign a volatility of profitability assessment between 1 and 6. Core ratios For the global FMI industry, we employ two core debt payback metrics: FFO-to-debt ratio and debt-to-EBITDA multiple. When these two ratios diverge, we typically give priority to the FFO-to-debt ratio. Supplemental ratios In addition to the two core ratios, we also consider two supplemental ratios to develop a fuller understanding of a company's credit risk profile and refine our cash flow analysis. These two supplement ratios are: Adjusted EBITDA to interest, and FOCF to debt. In the case of an independent member-owned (utility-like) FMI with zero or nominal adjusted debt, we assign a (1) minimal financial risk profile assessment, regardless of the CICRA, because we concentrate our analysis on clearing and settlement (C&S;) risk, not financial risk metrics, which may not be meaningful. We generally calculate core and supplemental ratios based on a three-year average: trailing one year's results, plus our current-year forecast (incorporating any reported year-to-date results and our estimates for the remainder of the fiscal year), plus our forecast for the next fiscal year. It is often impractical to make projections for most FMI companies beyond the next fiscal period because of the lack of visibility of top-line revenues. Trading/clearing fees are largely driven by exchange volumes, which, like stock prices, cannot be forecasted with a high degree of accuracy. We place greater emphasis on forward-looking estimates, which incorporate upcoming debt maturities and expected debt issuance/refinancing, than on the historical ratios. We generally weight the previous year, the current

year, and the forecasted year as 20%, 40%, and 40%, respectively. Financial ratio benchmarks We benchmark an FMI's indicative financial risk metrics by referring to the cash flow/leverage analysis ratios (tables 17-19 in the corporate methodology). In certain cases, we undertake an FMI-specific application of paragraph 123 of the corporate methodology to identify the relevant financial ratio benchmark table. We may use the low volatility table 19 when the CICRA is '2' and the medial volatility table 18 when the CICRA is '3'. We may use these benchmark tables when an FMI exhibits or is expected to exhibit low levels of volatility. If the CICRA is '4' or higher then we apply the standard volatility table 17. When two preliminary anchor outcomes are listed in table 3 of the corporate methodology, we generally apply paragraph 30 of the corporate methodology. For independent member-owned (utility-like) FMI companies, we may apply the lower of the two anchor outcomes if their relatively weaker EBITDA margins and overhead ratios are not fully reflected in their business risk profiles. Clearing and settlement risk C&S; risk is a prominent factor in the analysis and ultimate creditworthiness of FMI companies. For this reason, we have placed C&S; risk as a company-specific component of the anchor. C&S; risk consists of an assessment of either: A clearinghouse's ability to protect itself from loss in the event of member default, where it acts as central counterparty (CCP) or guarantor of the trade, or A CSD's ability to protect itself from loss if the selling counterparty to a transaction does not deliver securities, or if the buying counterparty to a transaction does not make payment, according to the terms to which the two counterparties previously agreed. Settlement failure may or may not be the result of a counterparty default. Our C&S; risk assessment starts with an analysis of the diversity and creditworthiness of the membership. Then we assess the extent to which the clearinghouse's or CSD's risk management policies and procedures follow the standards prescribed in the Principles for Financial Market Infrastructures (PFMI), published in April 2012 by the Committee on Payments and Market Infrastructures and the International Organization of Securities Commissions (CPMI-IOSCO). We expect most FMI companies will at least broadly observe the relevant PFMI standards, as described in the CMPI-IOSCO Assessment Methodology for the PFMIs and the Responsibilities of Authorities consultative report. We then combine our assessments of membership and risk management to establish the preliminary C&S; risk assessment. The preliminary C&S; risk assessment can be lowered by up to three more notches if there are additional identifiable risks. The C&S; risk assessment could raise (by one notch), lower (by one to eight notches), or leave unchanged the preliminary anchor in determining the anchor. Only if the FMI greatly exceeds the PFMI standards could we add one notch. Alternatively, we could subtract up to eight notches if the FMI does not observe the global industry standards, if specific components of the financial safeguard package are notably weak, or if there are identifiable risks within the national banking system that could inhibit a clearinghouse's ability to meet its clearing obligations or a CSD's ability to meet its settlement obligations in a timely manner. We apply the same assessment of C&S; risk to clearinghouses and CSDs whether they are independent entities or operate as subsidiaries or divisions of larger organizations. We apply a similar approach to payment networks that guarantee payments to members. If the exchange company does not clear any trades (i.e., the clearing function is outsourced, on an arms-length basis, to an independent third party), then we do not assess C&S; risk and the anchor is the same as the preliminary anchor. Diversity and creditworthiness of the membership We consider the creditworthiness and diversity of the clearinghouse or CSD membership to be the first line of defense against clearing or settlement loss. We view favorably FMI companies that have high admission standards. We measure membership diversity not just by the number of members, but more importantly, by their relative contribution to the FMI's aggregate risk exposure. For a clearinghouse, creditworthiness may be measured by the average issuer credit rating of the members, weighted by their initial margin requirements. Our assessment of membership is strong (1), adequate (2), or weak (3). Table 11 Membership--Diversity And Creditworthiness SCORE DESCRIPTOR MEMBERSHIP 1 Strong High credit quality ('A' to 'AAA') Highly diversified 2 Adequate Average credit quality ('BBB-' to 'A-') Sufficiently diversified 3 Weak Low credit quality (below 'BBB-') Concentrated In our view, it is important that FMI companies monitor the financial health of their members on a regular and ongoing basis. This includes the FMI companies' risk departments reviewing the financial status of each member, surveiling their members' trading activities and clearing risk exposures throughout the day (preferably on a real-time basis), and generating risk exposure reports and disseminating these reports

to management that has the authority to quickly take appropriate action if risk exposures become too large or breach pre-established limits. Unless there is demonstrable evidence of deficiencies, these subfactors are neutral to the membership assessment. If there is demonstrable evidence of deficiencies in an FMI's ongoing membership surveillance, then the membership assessment is weak (3). Risk management policies and procedures We assess an FMI's risk management policies and procedures based on CPMI-IOSCO's PFMIs. Our assessment of risk management policies and procedures is on a four-point scale. We assign a strong (1) assessment if the institution greatly exceeds relevant PFMIs, adequate (2) if the institution fully or at least broadly observes relevant PFMIs or has a credible plan to do so within a short period of time, less than adequate (3) if the institution partly observes relevant PFMIs, or weak (4) if the institution does not observe relevant PFMIs (see table 12). Table 12 Risk Management Policies And Procedures SCORE DESCRIPTOR RISK MANAGEMENT 1 Strong Greatly exceeds relevant PFMI standards. 2 Adequate Fully or broadly observes relevant PFMI standards. 3 Less than adequate Partly observes relevant PFMI standards. 4 Weak Does not observe relevant PFMI standards. We use information provided by the clearinghouse and/or official sources to assess the extent to which it observes the relevant PFMIs, notably including credit risk (PFMI principle no. 4), collateral (no. 5), margin (no. 6), liquidity (no. 7), and business risk (no. 15). We use information provided by the CSD and/or official sources to assess the extent to which it observes the relevant PFMIs, notably including liquidity (PFMI no. 7), settlement finality (no. 8), money settlements (no. 9), physical deliveries (no. 10), CSDs (no. 11), exchange-of-value settlement systems (no. 12), and business risk (no. 15). Some FMI companies may not be subject to PFMIs because they are not traditional clearinghouses or CSDs. Such firms include card payment networks. If an FMI is not subject to the PFMIs, then paragraphs 96-97 do not apply. Instead, our risk management policies and procedures assessment focuses on effective monitoring of counterparty credit risk exposure, appropriate levels of high-quality collateral, and sufficient liquidity, in the form of cash and/or lines of credit, to cover settlement exposure. If the payment network meets these three factors, then we assign an assessment of adequate (2). If it does not meet these standards, then we assign an assessment of less than adequate (3) or weak (4). Preliminary and final C&S; risk assessments We combine the membership assessment with the risk management policies and procedures assessment to arrive at a preliminary C&S; risk assessment. The preliminary C&S; risk assessment can range from plus one notch to the preliminary anchor if the membership and risk management assessments are both strong (1), to minus five notches if the membership assessment is weak (3) and the risk management assessment is weak (4). Table 13 C&S; Risk Assessment* --RISK MANAGEMENT POLICIES AND PROCEDURES-- --MEMBERSHIP-- 1 2 3 4 1 1 0 -1 -3 2 0 0 -2 -4 3 -1 -2 -3 -5 *An FMI's preliminary C&S; risk assessment can be lowered by up to an additional three notches if there are serious deficiencies in specific components of its financial safeguard package, or if there are identifiable weaknesses in the banking system that could inhibit its ability to meet its obligations in a timely manner. Before we arrive at a clearinghouse's final C&S; risk assessment, we analyze in detail its financial safeguard package (and associated default waterfall) to determine whether there are any deficiencies within any of its components. If we determine there are deficiencies, we would subtract up to three notches from the preliminary C&S; risk assessment to arrive at the final C&S; risk assessment. We could also subtract up to three notches from the preliminary C&S; risk assessment if there are identifiable risks within the national banking system that could inhibit a clearinghouse from meeting its clearing obligations or a CSD from meeting its settlement obligations in a timely manner. The financial safeguard package is the readily available liquid resources that a clearinghouse can use, if necessary, to fulfill its clearing obligations. It is most commonly used for covering losses stemming from a member default. The most common components of the financial safeguard package are margin, guarantee funds, clearinghouse's own liquid capital, and assessment powers. The guarantee fund and assessment powers introduce the concept of "mutualization of risk" among the members, which we view as a positive factor. We believe mutualization of risk gives the members an incentive to self-police each other's trading activities because their own contributions to the guarantee fund (plus calls to replenish the guarantee fund should it be tapped) are at risk if another member defaults. Alternatively, if there is no mutualization of risk and a clearinghouse were to entirely rely on its own capital to cover member defaults, we would view that as a negative factor. In our view, there is no optimal structure of

the financial safeguard package or default waterfall. Some clearinghouses may rely more on individual member margin requirements while others may rely more on the mutualized guarantee fund. For this reason, the overall protection afforded by the financial safeguard package (i.e., the sum of the parts) is more important than the individual components of the financial safeguard package. For example, very strong guarantee fund contributions can offset weakness in the margin calculation. Although our assessment of the financial safeguard package considers the overall protection that it affords, we still assess the various components (i.e., margin, guarantee fund, and assessment powers) to understand the degree of protection that each provides to the clearinghouse. This assessment of the components of the financial safeguard package is more qualitative and comparative than quantitative. It is also, in some respects, absolute, in that we may consider certain practices to be a deficiency at any CCP, and relative, in that we compare a CCP's practices with those that we see elsewhere in the market. Notably, financial safeguard deficiencies include: Weak assumptions underlying the margin calculation; Concentrations of margin deposits by member; Aggressive margin offsets or portfolio margining; Illiquid, risky, or otherwise inferior forms of collateral; Margin exceptions; Inability to impose extra or super margin requirements, as needed; Infrequent margin or guarantee fund calculations; Fixed or otherwise non-risk-based guarantee fund; Low minimum or maximum individual guarantee fund requirements; Weak assessment powers; Overreliance on the CCP's own resources, such as its equity, within default waterfall (as opposed to member collateral posting and/or default funds); Insufficient back-up lines or other sources of settlement liquidity; and History of losses stemming from member defaults. We do not make additional adjustments to the preliminary C&S; risk assessment of CSDs, unless: There are identifiable weaknesses in the national banking system that could inhibit it from meeting its settlement obligations in a timely manner; Where relevant, the collateral management practices appear imprudent, exposing the CSD to significant credit risk in the event of member default; or There are insufficient back-up lines or other sources of settlement liquidity. Financial Services Finance Companies Subsectors of financial services finance companies (FSFCs) include: Consumer finance companies: Companies that provide small-dollar loans, check cashing services, and other related consumer services, generally to consumers with little or no access to traditional commercial banks. Originators and servicers: Companies that originate and service loans (such as residential mortgage, commercial mortgage, and student loans) but retain minimal credit risk in terms of on-balance-sheet investments in mortgages or loans. Auto fleet services companies: Companies that provide fleet management services, including vehicle inventory management, fuel monitoring, vehicle maintenance, fuel card payments solutions, and other related services. Real estate services: Companies that provide financial and professional real estate services, such as investment management, property services, brokerage, and research. Money transaction processors: Companies that facilitate money management transactions, including money transfer, bill payment, and other related money transaction services. Other FSFC: Companies that provide various commercial and consumer finance products. For companies whose greatest credit risks, we believe, relate to asset quality, funding and liquidity, and tangible capital--some of the primary risks that banks face--we apply our NBFI criteria (see "Nonbank Financial Institutions Rating Methodology," published Dec. 9, 2014). We apply a different framework for NBFI because we believe that NBFI are more likely to default as a result of weaknesses in their balance sheets--rather than from an inability to service their debt obligations with operating cash flows. For instance, companies that we rate under the NBFI criteria often come under credit stress when a decline in the credit quality of their assets weakens their capital bases, their access to funding, and ultimately their liquidity. FSFC may be prone to some of the same risks as NBFI--but to a lesser degree. As a result, we incorporate an analysis of funding, credit quality, and tangible capital. However, we place a greater emphasis on the analysis of cash flow--relative to debt and interest expense--than the NBFI criteria do. Competitive position group profile The CPGP we assign to FSFC is services and product focus because typically these companies are consumer-facing and are service providers. Level of profitability Given the diversity of business models and revenue sources of FSFC, some assessments of profitability are made relative to direct peers--a subset of FSFC--and in those cases, the (level of) profitability thresholds will reflect below average, average, and above average for that subsector of FSFC. Specifically, we may view level of profitability as average (and not below average) despite lower margin when volume of business (transactions) is high and

profits are expected to be stable. We generally calculate the level of profitability based on a three-year average: previous one year's results, our current-year forecast (incorporating any reported year-to-date results and our estimates for the remainder of the fiscal year), and our forecast for the next fiscal year. Cash Flow/Leverage Supplemental ratiosIn addition to our analysis of a company's core ratios, we consider two supplemental ratios--EBITDA to interest expense and debt to tangible equity--to develop a fuller understanding of a company's credit risk profile and to refine our cash flow analysis in accordance with the corporate criteria. (We define tangible equity as total equity less goodwill and nonservicing intangibles.) We generally use debt to tangible equity for FSFC that have positive tangible equity and whose balance sheets contain a substantive portion of financial assets. We view the traditional measure of debt to tangible equity as reflective of how some FSFC fund their business and how much cushion they have to sustain unexpected losses. We determine the debt to tangible equity assessment using table 14. Table 14 Assessing Debt-To-Tangible Equity Ratio ASSESSMENT DEBT-TO-TANGIBLE EQUITY RATIO (X) Minimal <1.0 Modest 1.0-2.0 Intermediate 2.0-3.0 Significant 3.0-4.0 Aggressive 4.0-5.0 Highly leveraged >5.0 In certain circumstances, our calculation of debt allows for netting of funding with the assets associated with the funding (asset-specific funding). This netting is typically restricted to debt specifically used to finance high-quality and generally liquid assets. Importantly, we apply this netting to debt when a company uses it to fund assets that expose it to minimal credit risk, and generally for a short duration. As a result, we also treat interest expense associated with such funding sources as an operating expense and do not subtract it in our calculation of EBITDA. One example of netting debt facilities with assets financed with the facilities is when a U.S. mortgage company originates loans that conform to government-sponsored enterprise (GSE) guidelines. The loans are guaranteed to be purchased from the finance company within a short period of time, typically 20 days. We net as long as we believe that the GSE has no incentive to reject the pool of assets (rejection of conforming assets would signal a shift in market practice). Individual nonconforming assets that are rejected are not netted against debt when and if they are placed back on the balance sheet of the mortgage originator. We also net debt used to finance mortgage servicer advances when the advances have a first-priority lien against an entire pool of mortgage properties and we believe the residential mortgage-backed security will not decline below the value of the collateral against which the finance company has advanced money (these advances are typically supported by significant overcollateralization). When we believe there is some possibility, such as in stressed market conditions, that a GSE will stop purchasing assets (or abruptly change its criteria) or that a warehouse provider has the option of requiring significant additional margin with little notice to the finance company, we do not net the debt (asset-specific funding) with the assets funded by the debt. We generally calculate core and supplementary ratios based on a three-year average: trailing one year's results, our current-year forecast (incorporating any reported year-to-date results and our estimates for the remainder of the fiscal year), and our forecast for the next fiscal year. It is often impractical to make projections for FSFC beyond the next fiscal period because of the lack of visibility of top-line revenues. We place greater emphasis on the forward-looking estimates, which incorporate upcoming debt maturities and expected debt issuance/refinancing, than on the historical ratios. We generally weight the previous year, the current year, and the next fiscal-year forecast as 20%, 40%, and 40%, respectively. The Forest and Paper Products Industry Competitive position group profile The CPGP assigned to the majority of forest and paper products issuers that we rate is commodity focus/cost driven. Competition for most forest and paper products is intense and price-based, with little product differentiation or brand identity except in a few value-added consumer products. The ability to keep prices at competitive levels depends in large part on a company's ability to control costs, operate efficiently, and achieve scale and scope. While brand identity and meaningful product differentiation are generally difficult to achieve, in some cases--such as the tissue papers segment--issuers may be able to build up significant barriers to entry through branding. In these instances, we may assign the services and product focus CPGP. Competitive advantage In assessing competitive advantage for a forest and paper products company, we consider: Its business strategy and market position based on market share within attractiveness of product end markets; The proportion of revenue or earnings derived from value-added products; The existence or lack of barriers to entry within its key segments; and Its commitment and ability to sustain re-investment in production assets. When evaluating

business strategy and market position, we view market share and the relative attractiveness of the end-markets as important factors. We measure the assessment of a forest and paper products company's market share by sales or production capacity in the key markets and regions in which it competes. We assess the attractiveness of a company's product mix in this mostly commodity industry based upon product-line maturity; growth potential; substitution risks; and value-added versus commodity-grade products. Some of the more attractive product markets (like tissue paper) typically exhibit good secular demand growth potential and limited technological displacement and substitution risks compared to some printing papers that are in long-term decline because of new technologies. Relatively less attractive product markets are subject to long-term declines, such as demand for paper in mature markets because of competing technologies or materials. The ability of a forest and paper products company to achieve higher-value products through quality, service, and brand recognition is relatively modest compared with other industry sectors, but in certain instances--such as tissue papers or specialty pulp--may be an important consideration. Barriers to entry result from high capital intensity and high transportation costs relative to value of most forest and paper products. In addition, close proximity to key raw materials, such as wood fiber, or vertical integration can provide a strong barrier to entry. A forest and paper products company with a strong or strong/adequate competitive advantage assessment is characterized by a combination of: A strategy that is well-aligned with industry trends and is expected to result in a sustained market position within relatively attractive product markets; A higher-than-average proportion of value-added products and resulting ability to influence pricing; Capital investments and proximity and access to low-cost raw materials, energy sources, and customers; and A demonstrated commitment to reinvesting in its production assets throughout the cycle. A forest and paper products company with a weak or adequate/weak assessment of its competitive advantage typically is characterized by a combination of: A low market share position or revenue within product markets that are fragmented or in sustained decline; A high degree of exposure to product markets facing technological displacement or substitution risks; Typically being a price follower; Low barriers to entry in its key product segments; and An inability to sustain the required investment levels in its production assets throughout the cycle. Scale, scope, and diversity In evaluating scale, scope, and diversity for a forest and paper products company, we include an assessment of: The size of its revenue base and unit sales volumes; The extent to which a company's cash flows are derived from products or geographic regions that are independent or that have low correlation; The number of producing assets for a company; and Customer or supplier concentration A forest and paper products company's size typically brings competitive advantages from greater breadth and scope of operations and economies of scale, contributing to better profitability. A forest and paper products company with a portfolio of product offerings sold across different geographic regions typically benefits from less volatility in its operating and financial performance due to changes in regional economic prospects and demand or pricing for a particular product. Globally diverse forest and paper products companies with exposure to growing forest and paper products markets in emerging economies are typically better able to mitigate demand risks within mature or declining product markets, such as in North America and Western Europe. Diversity of manufacturing operations is important to the extent that a company with a greater number of producing assets in multiple locations is typically better able to mitigate risks to its operating performance associated with unforeseen or required maintenance shutdowns of its plants or mills. Forest and paper products that have a concentrated customer or supplier base could be susceptible to operational or financial challenges if a key customer or supplier faces its own business or financial challenges. When customer concentration exists, our analysis incorporates an assessment of the financial health of key customers and suppliers. Levels of interdependence between forest and paper products suppliers and customers vary, which could somewhat offset risks associated with a dependence on a few customers. Sole-supplier arrangements with customers are favorable (i.e., long-term wood fiber supply agreements), and product development and proprietary technologies often result in long-standing relationships with customers. A strong or strong/adequate assessment of scale, scope, and diversity typically is characterized by a combination of: Large size relative to peers; A broad range of products serving different end-use markets, typically with numerous product offerings subject to different economic cycles and product end-markets across several geographic areas; Multiple producing assets; No significant unmitigated

customer concentration; and Raw material supplies that are readily available from multiple sources or secured through long-term arrangements with well-capitalized suppliers. A weak or adequate/weak assessment of scale, scope, and diversity typically is characterized by a combination of: Small size relative to peers; A narrow range of product offerings serving a single end-use market; Loss of a key customer could result in a significant decline in forecast sales or EBITDA; An overreliance on one supplier, that is not easily replaced, for raw materials; Locations limited to a small geographic region; and A single production facility or a limited number of operating assets. Operating efficiency Operating efficiency is an important aspect of a forest and paper products company's competitive position, because most forest and paper products are commodities with no price differentiation, so that profitability is ultimately determined by efficiency. A high degree of operating efficiency achieved by minimizing manufacturing and other operational costs results in higher and more stable profitability and cash flow over the course of the business cycle. To assess operating efficiency we evaluate: Age, size, and location of production assets; Degree of access to raw materials and energy supplies at a competitive cost; Degree of vertical integration; and Flexibility of labor costs. Age, size, and location of production assets: newer and larger machines can be more efficient, with lower-energy costs and lower staff levels per production units. Locations closer to customers have lower logistical costs, but this needs to be balanced with labor cost flexibility and energy and fiber supply costs. Degree of access to raw materials and energy supplies at a competitive cost: Because fiber costs are a meaningful component of total operating costs for most paper, paper-based packaging, tissue papers, and wood products manufacturers, access to low-cost fiber is a competitive strength. Energy-cost advantages come from favorable market or contract conditions in specific countries or regions, by integrated pulp and paper or tissue production that is generally more energy and cost efficient than stand-alone production, or direct ownership of energy generation. The ability to hedge costs can also be a competitive advantage. Degree of vertical integration: vertical integration, while capital-intensive, provides the benefit of sourcing a company's own raw materials (wood fiber, recycled fiber, and pulp) or energy at a production cost, rather than paying a supplier the cost of production, logistics, and the applicable margin. A high degree of forward integration into converted and finished products, such as a containerboard manufacturer also producing boxes, is usually positive because box prices are higher and more stable than containerboard prices, and the manufacturer is less exposed to volatile open-market sales. Flexibility of labor costs: Labor legislation and agreements can directly affect operational set-ups and cost flexibility. This can include relations with unions, because a good relationship between a company and its workforce can minimize the risk of costly strikes. A strong or strong/adequate assessment of operating efficiency is characterized by a combination of: Low-cost production assets, measured relative to peers; Demonstrated ability to achieve cost reductions and manage fixed and variable costs in cyclical downturns; Vertically integrated operations as determined by a high degree of self-sufficiency the company has regarding its key input costs; A relatively flexible labor cost structure compared to peers; and Greater-than-industry average EBITDA margins, measured relative to peers in similar product markets. A weak or adequate/weak assessment of operating efficiency is characterized by a combination of: High-cost production assets, measured relative to peers; Limited ability to pass along increases in raw materials and energy input costs; A substantial portion of raw materials and energy needs are met via third-party providers; A labor cost structure that is less flexible than its peers; and Lower-than-industry average EBITDA margins, measured relative to peers in similar product markets. Volatility adjustment We expect pulp, paper, and wood products producers to experience a high degree of cash flow volatility over an economic cycle. For those companies, we typically adjust cash flow/leverage assessments by up to two categories worse at estimated cyclical peaks to account for expected volatility. Supplemental ratios For forest and paper products companies: We typically use FOCF to debt or cash flow from operations (CFO) to debt as a supplemental ratio when the cash flow and leverage assessment indicated by the core ratios is intermediate or stronger. When divergences between FOCF to debt and CFO to debt occur, we may rely on CFO to debt if we believe there is discretion about the timing or size of company's forecast capital expenditures or working capital growth. We typically use debt service coverage ratios (EBITDA to interest or FFO plus interest to cash interest) when the preliminary cash flow and leverage assessment indicated by the core ratios is significant or weaker. In the case of timber REITs, we use

debt to debt-plus-equity as the preferred supplemental ratio. The benchmarks for debt to debt-plus-equity (adjusted for the market value of timberlands where applicable) are shown in the table below. Table 15 Supplemental Ratios--Timber REITs DEBT/DEBT + EQUITY (%)* 1. Minimal Less than 25 2. Modest 25-35 3. Intermediate 35-45 4. Significant 45-50 5. Aggressive 50-60 6. Highly leveraged Greater than 60 *Adjusted for the market value of timberland where applicable The Health Care Equipment Industry Country Risk We primarily measure a company's exposure to country risk based on the percent of its revenues generated in each significant country or region, unless the percent of EBITDA is available, in which case we use the percent of EBITDA. Competitive position group profile The CPGP generally assigned to makers of high-tech health care equipment is product focus/scale driven, reflecting the importance of product and geographic diversity, as well as the market positions of participants. In some cases we may use this CPGP for manufacturers of products that are purchased directly by consumers for which a brand name and product differentiation are important (for example, a contact lens manufacturer). The CPGP generally assigned to makers of low tech health care equipment is Commodity Focus/Scale Driven because product differentiation is minimal and competition is often based on price. We also use this CPGP for contract manufacturers, for which scale, scope, diversity, and operating efficiency are more important than competitive advantage. Companies in the health care equipment industry span a range of technology sophistication, from patent-protected, high-technology-intensive products to more generic, commodity-like products. High-tech products are complex to design and produce, and are often protected by patents. Producers generally employ cutting-edge science to address highly specific therapeutic and diagnostic applications. This subsector benefits from high barriers to entry (both technological and regulatory) and has better pricing flexibility than conventional supplies. Items in this category include technologically advanced products that often command premium prices and attractive margins if they demonstrate clinical utility, and benefit from limited competition. Implantable cardiovascular and orthopedic devices, and some surgical instruments, fall into this category. Competitive advantage When we analyze the competitive advantage of a company in the health care equipment industry, we generally focus on the size and nature of the market in which it competes, the bases of competition, and the ways it distinguishes itself from competitors. A health care equipment company with a strong or strong/adequate competitive advantage assessment typically has some of the following characteristics: It participates in a sizable global market (subsector) and has an established position; The market (subsector) is growing at an above-average rate; Its products have a relatively high medical necessity, and are therefore recession-resistant; Its products are positively differentiated with proven benefits (e.g., higher treatment rates, fewer adverse events, faster or less invasive treatment), have more sophisticated and superior technology than competing products, and have favorable brand recognition; Complex technology and patents deter competition; nearly all sales are in countries with strong patent protection laws (more relevant for high-tech products); The company has a strong pipeline of new or enhanced products; new products typically command higher prices than aging products, in addition to sustaining or improving a company's competitive position; Products engender a high degree of customer loyalty (for example, consumers are reluctant to switch contact lens brands and physicians are reluctant to switch orthopedic implants and the related surgical tools with which they have had good experience); Consumables, especially those used with proprietary products, account for a significant percent of sales; Its R&D; spending (absolute and as a percent of revenue) is at least comparable to peers'; the company's R&D; strategy is consistent with its capabilities and market conditions, and it is willing and able to buy desired technology; The company uses direct distribution channels in local and key foreign markets, and its sales force has a strong relationship with customers; and Special manufacturing expertise gives a competitive advantage to a contract manufacturer. A health care equipment company with a weak or adequate/weak assessment of its competitive advantage has some of the following characteristics: It operates in a mature market (subsector) with stagnant or declining prospects; faltering consumer demand; It is more sensitive to economic conditions than the overall industry; products are used in discretionary procedures, have relatively low medical necessity of use; or the company produces costly capital equipment; It participates in a fragmented market (subsector) with many competitors; It participates in a young and unproven market; It participates in a small market; It operates in commodity-like markets; products are low-tech and not differentiated, and volume and market share

are potentially volatile; Its products are vulnerable to substitution (from within or outside the industry); Its products are subject to rapid obsolescence and the company is likely to fall behind technologically; Purchase decisions for its products are made by hospital administrators; Its R&D; spending is low relative to peers' (absolute and as a percent of revenue); its R&D; efforts are overly ambitious, spread too thin, or inadequate; Sparse product pipeline creates a lack of future growth drivers; Reputation and sales have been hurt by a history of material or repeated product recalls, regulatory sanctions for marketing practices, or manufacturing problems; The company sells a significant percent of its products through distributors in its home market; and The company lacks clout with distributors, physicians, and hospitals. Contract manufacturers generally have a weak or adequate/weak competitive advantage because this market is extremely fragmented, highly competitive, and price-sensitive. These market dynamics give much more bargaining power to health care equipment companies that outsource manufacturing relative to the contract manufacturers. Scale, scope, and diversity Our assessment of a health care equipment company's scale and scope focuses on its market position relative to competitors'. We analyze diversity by number of product categories and lines, medical specialty and end use, and geography. Product diversity reduces exposure to recalls and permanent product withdrawals, new competition, patent challenges, recognition of adverse side-effects or events, and manufacturing problems. Diversity of end uses reduces exposure to changing therapeutic techniques. Geographic diversity can reduce profit declines that may result from unfavorable economic, reimbursement, regulatory or other developments in a specific country or region. We believe diversity is generally more important than scale and scope. In determining a medical device company's market share and scale, we assess: The company's market share and performance relative to the market; Market share stability, i.e., the reliability of sales and customer loyalty; The number and strength of competitors, and their respective market shares; and The scale or size of the company (generally defined by revenues). Our analysis of market share and scale considers a company's absolute market share, and the respective market shares of its competitors. Markets may not be clearly defined: medical devices can sometimes compete head-on with pharmaceuticals for treatment of a particular medical condition. We typically view more favorably companies that are gaining market share. Many factors can drive market share improvement. A first-mover advantage can establish a leading market position and customer loyalty. Certain products sold directly to consumers can have historically low switching patterns (e.g., contact lenses). Low switching patterns can also be a byproduct of device complexity and physician training, as with many orthopedic implants and ancillary surgical tools. We view less favorably companies with lower-technology, commodity-like products or those operating in more fragmented and competitive markets, which are at greater risk for losing market share. For these markets, price can have a greater influence on sales. In many countries with single-payor government systems, tenders are often put out for product purchases, and price is a key factor in contract awards. The market positions of companies with larger revenue bases are viewed favorably. Greater scale provides resources to develop new products (and maintain a robust product pipeline), and to conduct clinical trials to establish product efficacy and superiority. Scale also means greater resources to discover and acquire cutting-edge technologies. Given the high fixed costs for medical device manufacturers, economies of scale can lead to higher margins and act as an offset to pricing pressures. In addition, a small revenue base can limit a company's ability to invest in R&D;, sales force, information technology (IT), and other avenues to expand the business, so is viewed unfavorably. A health care equipment company that warrants a strong or strong/adequate assessment of scale, scope and diversity has some of the following characteristics: Its products have varied end uses in multiple medical specialties; multiple physician call points; life sciences products are sold to diverse end markets (e.g., pharmaceuticals, education, health care, energy, chemicals, food, etc.); A broad range of specific products within each category or line; Its sales are balanced between the large U.S. and other markets; it participates in favorable emerging markets, with no concentration in one country; Within its subsector(s), it has a leading market share with few formidable competitors; It has a growing or stable market share; and It is large relative to competitors, better able to develop new products, with economies of scale in manufacturing and marketing. A health care equipment company warranting a weak or adequate/weak assessment of scale, scope, and diversity has some of the following characteristics: It offers a single product or narrow product line; this is especially relevant for contract

manufacturers; It has a narrow end user or customer base, or a single medical specialty; It's a life science company reliant on sales to governments or entities dependent on government funding; It competes against larger more dominant players with greater resources; All sales are in one country, or concentrated in a small region; Its market share is declining; and It has a small revenue base and limited resources for R&D;, sales force, IT, etc. We incorporate the factors discussed above in our view of scale, scope, and diversity of contract manufacturers. In addition, these companies are especially exposed to risks of customer and product concentration. A customer could cancel a product line and select a different contract manufacturer for the next-generation product or choose to manufacture it in-house. There is also a low-probability risk that the customer would shift production of a current product or sever its relationship with a specific contract manufacturer, perhaps in the wake of quality problems or as a result of the customer's financial distress. We evaluate this exposure as follows. A contract manufacturer with strong or strong/adequate customer and product diversity has the following characteristics: Its top customer or product accounts for less than 10% of revenue; Its top ten customers or products account for less than 50% of revenue; and Nearly all of the 25 largest health care equipment companies are clients. A contract manufacturer with weak or adequate/weak customer and product diversity has the following characteristics: One customer or product accounts for 30% or more of revenue; or Its top five customers or products account for 80% or more of revenue. Operating efficiency A health care equipment company with strong or strong/adequate operating efficiency has the following characteristics: Its superior cost position or ability to pass through cost increases contributes to profit margins or returns on capital that are better than peers' in the same subsector (comparing high-tech to high-tech, low-tech to low-tech, contract manufacturers to contract manufacturers, life science to life science); improving profitability; Its margins are fairly stable even when revenues fall or growth slows; It is skilled in navigating patent and regulatory approval processes; It has multiple manufacturing and distribution facilities; and It has good working capital management, measured, in part, by inventory turnover and receivables days' sales outstanding (DSOs) better than industry (subsector and national) norms. A health care equipment company with adequate operating efficiency has the following characteristics: Its profit margins or returns on capital are comparable to peers' in the same subsector (compare high-tech to high-tech, low-tech to low-tech, contract manufacturers to contract manufacturers, life science to life science); fairly stable profitability; Only moderate margin slippage when revenues fall or growth slows; and Sound working capital management, such that inventory turnover and receivables DSOs are similar to norms. A health care equipment company with weak or adequate/weak operating efficiency has some of the following characteristics: Its high cost structure or inability to pass through cost increases contributes to profit margins or returns on capital that are below peers' in same subsector (compare high-tech to high-tech, low-tech to low-tech, contract manufacturers to contract manufacturers, life science to life science); declining profitability; A pronounced decline in profitability when revenues fall or growth slows; Reliance on one or a few manufacturing facilities (including those of suppliers), or dependent on problematic supplier(s); Limited experience or a poor track record in the patenting or regulatory approval processes; History of material or repeated quality problems; regulatory sanctions for marketing practices or manufacturing problems; product recalls; inability to quickly remedy problems; Excess physical capacity or constrained capacity (especially relevant for contract manufacturers); excess staffing (R&D;, sales and marketing, etc.); and Poor working capital management; inventory turnover or receivables DSOs worse than norms. Core And Supplemental Ratios We usually use debt to EBITDA as the primary leverage measure for health care equipment companies. 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 fine tune our cash flow analysis. Among the five supplemental cash flow and leverage ratios, we place somewhat more emphasis on EBITDA interest coverage if the preliminary cash flow and leverage assessment indicated by the core ratios is significant or weaker. FFO plus interest to cash interest coverage and EBITDA interest coverage are especially important when the company has payment-in-kind (PIK) debt, PIK preferred stock, or low-coupon convertible debt. These coverage ratios recognize the lack of or low mandatory cash expense on an ongoing basis. We use the supplemental debt payback ratios (cash flow from operations to debt, FOCF to debt, and DCF to debt) infrequently. These measures usually do not provide additional insight, in part, because

health care equipment companies generally have moderate fixed and working capital requirements relative to all other industries. The Health Care Services Industry Country Risk We primarily measure a company's exposure to country risk based on the percent of its revenues generated in each significant country or region, unless the percent of EBITDA is available, in which case we use the percent of EBITDA. Competitive position group profile The CPGP assigned to health care services providers is Commodity Focus/Scale Driven. Competitive advantage When we analyze the competitive advantage of a health care services provider, we consider: The subsector/market's competitive environment and the company's position in it; Payment and reimbursement mechanisms, including the company's relationships with private payors; and Service differentiation, including demonstrated quality. When we analyze a company's competitive environment (recognizing that it operates in numerous local markets), we pay special attention to the number of competitors and the degree of consolidation. Our assessment of the competitive landscape in a specific market includes government-owned and other not-for-profit facilities that often compete with for-profit health care providers. Not-for-profit facilities may enjoy tax advantages, subsidies, or other benefits that give them competitive advantages. Government-owned facilities may provide services to a larger number of people who are insured by government programs, which require little or no direct cost to patients. We compare the company's growth rate to growth of its subsector/market, including "same-store" volume and revenue growth trends. We assess its track record of winning and retaining contracts (where relevant). At the subsector/market level, we evaluate the regulatory framework that specifically applies to a company (e.g., renal dialysis in Germany or ambulatory surgery in the U.S.). The transparency and predictability of government payments, including those under contracts, can bolster or limit a company's competitive advantage. We also review whether the payments it receives from private insurers compare favorably or unfavorably with those of other providers in its subsector/market. We consider how effectively the company differentiates itself in its market, including indicators of service quality (e.g., readmission rates, rates of hospital-acquired infections, patient satisfaction scores, star ratings for Medicare managed care) and location of its facilities. Demonstrated quality can affect both a company's competitive advantage and operating efficiency. Given the pervasive government influence, limited price flexibility, and often insignificant market shares in fragmented local markets, we believe few providers would merit a strong assessment of competitive advantage. A health care services company with a strong/adequate (or more rarely strong) competitive advantage assessment typically has some of the following characteristics: It competes in markets with few participants; It operates in a regulatory environment and government payment regime that is transparent and predictable; It has a dominant share of its local markets, which gives it a strong bargaining position with private insurers or other private third-party payors (e.g., employers) and facilitates attraction and retention of professional staff; Its payment/reimbursement mechanism is stipulated under long-term government contracts that include upward adjustments for external economic factors (e.g., inflation) or upward-only adjustments; It obtains favorable payments from private insurers, compared with those of other providers in its subsector/market; Its volume and revenues grow faster than its subsector/markets; it has a favorable trend of same-store volume and revenue growth; It has a good track record of winning and retaining contracts (for companies in markets that use contracts); It has above-average quality measures and is able to positively differentiate itself in the eyes of the consumer, professionals, and government agencies that provide referrals, those who award contracts to provide services, or other third-party payors; Its patient loyalty has been demonstrated (e.g., repeat visits, which are relevant in some subsectors); and If it chooses to compete for payors/patients on the basis of price, it is a low-cost provider. A health care services company with an adequate competitive advantage has some of the following characteristics: Its markets are moderately competitive; The regulatory environment and government payment regime are somewhat transparent, but may be unpredictable; There is limited opportunity for service differentiation; It grows at the subsector/market rate; Its payments from private third-party payors are similar to those of other service providers in its subsector/market; and Its quality measures are in line with subsector/market norms. A health care services company with a weak or adequate/weak assessment of its competitive advantage has some of the following characteristics: It competes in a subsector/market with numerous competitors and low entry barriers; The regulatory framework or national health care system is volatile or underdeveloped; government policies could result in material "stranded assets;" It is exposed to

competitive bidding; Its volume and revenues grow more slowly than its subsector/market's; or its revenues are subject to meaningfully higher-than-average volatility, compared with the overall health care services industry or its subsector/market; It receives unfavorable payments from private insurers, compared with those of other providers in its subsector/market; Its facilities are poorly located; it has a reputation for low quality or its quality metrics are weak; It uses a population health management business model, but its cost structure, operating practices, or quality are poorly suited for this approach. Scale, scope, and diversity Our assessment of a health care services company's scale, scope, and diversity focuses on: Diversity of services offered, including diversity of subsectors served; Diversity and stability of revenue sources (payor profile); and Geographic diversity. Breadth or narrowness of services offered is important because a significant reduction in government reimbursement rates for a particular service can cause a sharp drop in earnings and cash flow of a provider that concentrates in that service ("stroke-of-the-pen" risk). A narrowly focused provider is also exposed to changes in medical practice in a single field. In most countries, prices paid by private sources (insurers and patients) generally are higher than prices paid by government sources, and therefore we often view private revenue more favorably than government revenue. We also consider whether a company participates in multiple subsectors (e.g., psychiatric hospitals and nursing homes). A company's payor profile is a key credit factor. Governments, private insurers, and patients are the main sources of revenue for health care services providers. Some health care services companies also receive a material percent of revenue from employers and other health care services providers, such as hospitals and doctors, and they typically have some flexibility in negotiating prices with these customers. In evaluating the diversity and stability of revenue sources, we consider the percent of revenue from any one government source (e.g., Medicare, Texas Medicaid, U.K. local authority, Spanish central government, U.K. National Health Service; by country or state if relevant). For companies that provide services under contracts, we evaluate the percent of revenue from its largest contracts. We also look at revenue concentration from private insurers. Geographic diversity can reduce profit declines that may result from unfavorable economic, reimbursement, regulatory, or other developments in a specific country or region. We have a favorable view of companies that operate in geographically diverse markets that have different demographic trends, economic environments, payment regimes, and payors. Payment rates (and other criteria) for Medicaid, a government program in the U.S. that pays for health care of the poor, are established by each state. Therefore, we consider state-by-state concentrations for health care service companies with significant Medicaid revenues. Geographic concentration by state is also meaningful for providers of workers' compensation care. Although the payor is typically an employer or insurer, payment rates for this care are established by each state. Market share is usually a relatively small credit factor because many health care services markets are fragmented, data is often unavailable (one company may serve dozens or more distinct local markets), and health care services providers generally lack pricing power, particularly for patients insured by government programs. However, we may consider market share, and view it favorably, for companies that are typically the sole or a leading provider in markets with very few competitors. These circumstances would also be incorporated into our competitive advantage assessment. Scale is generally a less important subfactor, although large scale can provide a platform for good operating efficiency. Due to payor concentration (which results in revenue and profit concentration), we expect very few health care services companies to merit a strong assessment of scale, scope, and diversity. A health care services provider with a strong/adequate (or more rarely strong) assessment of scale, scope, and diversity has most of the following characteristics: It offers a wide range of services; it treats or monitors patients with a wide variety of medical conditions (e.g., acute care/general hospital, clinical lab with extensive test menu); It operates in several subsectors; It has a low dependence on government revenue (or higher dependence that is mitigated because the payment mechanism provides multiyear revenue and profit stability, as in some contracts); No more than 35% of revenue from any one government source; No more than 25% of revenue (or EBITDA if available) from a single government contract; No more than 10% of revenue from Medicaid (combining all U.S. states); No more than 15% of revenue comes from any one private insurer; No more than 5% of revenue comes from any other customer (excluding governments and insurers); It operates in many geographic markets and meets at least one of the following: It has operations in two or more countries and at least

two each contribute 30% or more of revenue (or EBITDA if available); it operates in 20 or more local markets (catchment areas, if data available); and it operates in more than 10 states/regions. The top state/region accounts for less than 20% of revenue; the top five for less than 50%; If the company is paid (by employers) under state-regulated workers' compensation rates, no state accounts for more than 10% of revenue; and The company has the flexibility to set prices for 20% or more of its revenue. A health care services provider with an adequate assessment of scale, scope, and diversity does not meet conditions for strong or weak and has some of the following characteristics: It treats or monitors patients in somewhat limited medical specialties (e.g., only psychiatric hospitals, pediatric hospitals, cancer centers); Its payor mix is similar to the average for its subsector/market; 85% or more of its revenue (or EBITDA if available) is derived from one country; and It operates in more than 10 local markets/states; the top three account for less than 50% of revenue. A health care services company that warrants a weak or adequate/weak assessment of scale, scope, and diversity has at least one of the following characteristics: It treats or monitors patients with only a few narrowly defined medical conditions (e.g., end-stage renal disease, substance abuse, anatomic pathology laboratory services); It has a high dependence on government revenue (not mitigated by a payment mechanism that provides multiyear revenue and profit stability) or a small number of contracts; More than 50% of revenue comes from one government source or a single government contract; More than 80% of revenue comes from its top two contracts; More than 25% of revenue comes from Medicaid (all U.S. states combined); One commercial insurer accounts for more than 30% of revenue; Another customer (excluding governments and insurers) accounts for more than 25% of revenue; It operates in fewer than 10 local markets/states; its top two account for 80% of revenue or more; and If the company is paid (by employers) under state-regulated workers' compensation rates, one state accounts for more than 25% of revenue. Operating efficiency When we assess a health care services company's operating efficiency we generally compare its profitability and cost structure to those of its peers in the same subsector and country, which provide similar services and receive similar payment rates. Operating efficiency is especially important for companies that use a population health management business model. They may have more opportunity than fee-for-service providers to garner a favorable assessment or to fall short in this subfactor. Accurately estimating utilization and costs (good underwriting) and skilled price negotiation are indicators of strong operating efficiency. When we analyze the operating efficiency of a health care services provider, we consider its: Profitability (EBITDA margins or return on capital) compared with subsector peers; Supplier terms; Economies of scale (centralized billing, sophisticated revenue cycle management, inbound/outbound call centers, sophisticated electronic health records, etc.); Labor costs and flexibility; professional staff turnover; Capacity utilization relative to its subsector; Bad debt management; Uncompensated care (if relevant in subsector); Service quality (readmission rates, hospital-acquired infection rates, patient satisfaction scores, star ratings for Medicare managed care, etc.; if aggregated data available) relative to peers in its subsector; Ability to estimate utilization and costs (most relevant for population health managers); and Lease terms (if relevant). A health care services company with strong or strong/adequate operating efficiency has many of the following characteristics: It has higher EBITDA margins or returns on capital than peers in its subsector; It obtains favorable terms from suppliers; It benefits from other economies of scale; It has less costly or more flexible labor compared with peers in its subsector or direct competitors; it adjusts staffing to reflect volume changes while maintaining quality; It has above-average capacity utilization for its subsector; it sustains solid profitability when capacity utilization is subpar; If it uses a population health management business model, it has a track record of accurately estimating costs; It accurately estimates bad debt losses; it has had fairly stable bad debt expenses without significant adjustments; Relative to peers in its subsector it has well-above-average quality measures; and It has below-average professional staff turnover for its subsector. A health care services company with weak or adequate/weak operating efficiency typically has several of the following characteristics or one that is an especially severe shortcoming: It has lower EBITDA margins or returns on capital than its peers in its subsector; It has inflexible labor with rigid union or government work rules; it is unable to adjust staffing for volume changes; it has burdensome pension costs; It has below-average capacity utilization for its subsector; It is less efficient than peers and other direct competitors in its subsector; it has a limited ability to reduce variable or fixed costs; it has a history of unsuccessful cost reduction programs;

It has higher-than-average uncompensated care (with no mitigants) for its subsector; It has higher-than-average professional staff turnover for its sub-sector; It has onerous lease terms (e.g., steep rent escalation) for its core facilities; Its reimbursement has been meaningfully reduced because of its substandard quality; and It has had erratic bad debt expenses. Core And Supplemental Ratios We usually use debt to EBITDA as the primary leverage measure for health care services companies, but we also consider the FFO-to-debt ratio. 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 fine tune our cash flow analysis. If the preliminary cash flow and leverage assessment indicated by the core ratios is significant or weaker, we place more emphasis on EBITDA interest coverage as a supplemental ratio. We may also consider FFO plus interest to cash interest coverage when a company has payment-in-kind (PIK) debt, PIK preferred stock, or low-coupon convertible debt. These ratios recognize the low or lack of cash expense on an ongoing basis. Health care services companies often carry a high adjusted debt burden and their ability to meet cash interest and lease payments is critical. Therefore, when rent expense is large, and to take account of a company's ability to cover all fixed charges, we may use, as a supplemental ratio, EBITDAR (lease-adjusted EBITDA) coverage of interest plus rent expense (sometimes called fixed charge coverage). This ratio is especially important for companies at the lower end of the credit spectrum with only marginal coverage of interest and rent. It also helps us compare companies with higher property ownership (which may be financed with debt) with companies that lease most of their properties. When calculating this ratio we use reported rent expense for historical periods and our estimate of actual rent expense for future periods. Table 16 EBITDAR Coverage Of Interest And Rent Scale Minimal >8.0x Modest >5.0x-8.0x Intermediate >3.0x-5.0x Significant >2.5x-3.0x Aggressive =>2.2x-2.5x Highly leveraged <2.2x We use the supplemental debt payback ratios (cash flow from operations to debt, FOCF to debt, and DCF to debt) infrequently. These measures are more meaningful for the few health care services companies that have a preliminary cash flow/leverage assessment of intermediate or stronger, but usually do not provide additional insight, in part, because health care services companies generally have moderate fixed and working capital requirements relative to all other industries. The Media and Entertainment Industry Competitive position group profile The CPGP assigned to most companies in the media and entertainment industry is services or product focus. For companies in the printing sector, we typically use the commodity focus/scale driven CPGP. For film and TV programming production, we typically use the capital or asset focus CPGP. Competitive advantage In assessing the competitive advantage of a media and entertainment company, we consider: Brand strength; Market position; Revenue stability, especially in light of industry-wide migration to digital technology; Asset quality; Other subsector-specific factors, and The extent to which these factors support pricing leadership. Although we assess competitive advantage of a media and entertainment company in the context of the overall industry and not just within the company's subsector specifically, we consider how the above factors manifest themselves across the various subsectors of media and entertainment as follows: a) Ad agencies and marketing services companies An assessment of strong or strong/adequate typically results from: Strong ad agency networks and marketing services brands; Stable client base and established added value that supports fee stability or increase; Consistent net new account or existing client business generation, resulting in steady positive organic revenue growth; Multiple service offerings across different geographic regions; Strong creative ability in traditional and digital formats; and Ability to adapt to technology shifts. An assessment of weak or adequate/weak typically results from: Lack of business diversity and brand recognition; High client turnover; Low net new business wins or net client losses; Limited presence in emerging markets and in digital services; and Inability to adapt to technology shifts. b) Ad-supported online content platforms An assessment of strong or strong/adequate typically results from: Strong and stable market share; Strong targeting and demographic reporting capability; Strong brand recognition; Sizable audience and demographic mix that is attractive to advertisers; Proprietary technology that is difficult or very costly to duplicate; A critical mass of content that makes the company's services highly valuable to users and imposes high switching costs; Method and ability to monetize content and audience traffic; and High customer engagement and usage frequency. An assessment of weak or adequate/weak typically results from: Weak analytic reporting capabilities; Heavy dependence on ad exchanges; Dependence on external

search engine traffic such that Google search engine changes could have a significant effect on audience reach; Limited product appeal (e.g., focusing on a highly specialized market or niche); Lack of valuable content or technology to generate good cost per thousand impressions (CPMs); Other pricing measures (e.g. "cost per click"); and Limited global presence. c) Broadcast networks An assessment of strong or strong/adequate typically results from: More favorable national TV market structure, including supportive regulation (Germany, France, Brazil, Mexico, U.S.), and limited circle of direct competitors for programming/audience/advertising money by other private free-to-air broadcasters or public broadcasters; Audience rating leadership and below average declines in ratings; High retransmission consent fees from affiliate stations; Track record of generating programming successes; and Industry-leading CPMs and CPM growth. An assessment of weak or adequate/weak typically results from: Less favorable or adverse national TV market structure, including unfavorable regulation (Poland, Russia) and tough competition for programming/audience/advertising by public broadcasters or a large number of over-the-air private broadcasters; More severe declines in audience ratings; Second-tier networks; Dependence on few shows for successes; Limited track record of generating programming successes; and Inability to drive CPM growth. d) Cable TV and OTT networks An assessment of strong or strong/adequate typically results from: High distribution across TV homes with scale to distribute content digitally or direct to consumer; Above-average affiliate/subscriber fees; Leadership in premium programming categories (sports, news, general entertainment, or specialized programming); and Audience ratings leadership and either growth or less-than-average declines in ratings. An assessment of weak or adequate/weak typically results from: Lower reach among TV homes; Low audience ratings, whether for general interest networks or high interest, niche-based networks; and More severe declines in audience ratings. e) Data publishing An assessment of strong or strong/adequate typically results from: Exclusive data or expertise that confer pricing power, high barriers to entry, high client retention, lack of substitutes, and technological expertise to migrate platforms successfully; Track record of minimal service delays/downtime; Low proportion of revenues from print products; and History of continuous product and service innovation. An assessment of weak or adequate/weak typically results from: Niche content or narrow scope of exclusive content; Limited or no pricing power; Lack of consistent success migrating technology with client needs; and Poor system service with frequent downtime. f) E-commerce services An assessment of strong or strong/adequate typically results from: Strong and stable market share; Brand recognition; Good conversion rate (i.e. conversion of online user traffic to revenues); Consumer-friendly interface feedback; and High repeat purchases or usage. An assessment of weak or adequate/weak typically results from: Dependence on external search engines or third-party traffic; Absence of exclusive products or notable distinctions versus competitors; Overly complicated purchase path; and Poor customer service. g) Educational publishing An assessment of strong or strong/adequate typically results from: Commanding elementary through high school market shares in key U.S. "adoption" states (e.g. California, Florida, and Texas) as well as "open" states; Positions in key junior and senior year subjects, which are less susceptible to used book sales/rentals; College/university backlist with numerous important titles; Low percentage of textbook sales derived from first editions; Ability to raise college textbook pricing and revise editions with minimal impact on volume; and Significant presence in digital learning solutions that complement textbooks. An assessment of weak or adequate/weak typically results from: Low market shares; Minor positions in more stable junior and senior year subjects; Concentration in freshman and sophomore textbooks (more sensitive to competition from used book rentals and sales, and less able to raise prices); Dependence on for-profit sector (weakest sector due to continued enrollment declines); and Weak presence in digital learning. h) Film and TV programming production An assessment of strong or strong/adequate typically results from: Top-tier studios with well-established ability to develop, market, finance, and distribute profitable films and television shows globally. An assessment of weak or adequate/weak typically results from: Track record of minimal success developing film and television hits. i) Local TV stations An assessment of strong or strong/adequate typically results from: No. 1 or No. 2 in local market audience ratings (news and full-day) resulting in greater share of in-market advertising sales; Large percentage of market duopolies; Diversified affiliations with strongest broadcast networks; High percentage of retransmission revenues (over 30% of broadcast revenues); and Strong brand recognition and ownership of valuable content. An assessment of weak or

adequate/weak typically results from: Low news and full-day audience ratings versus peers resulting in a lower share of in-market advertising sales; Lack of market duopolies; Exposure to few broadcast networks or weaker ones; and Low percentage of retransmission revenues (less than 15% of broadcast revenues) j) Motion picture exhibitors We do not assess motion picture exhibitors as strong or strong/adequate because of production studios' incentives and business initiatives to distribute directly to the consumer via digital platforms, and exhibitors' inflexible cost structures. An assessment of adequate may result from: Modern theater amenities (recliner seating, IMAX theaters, etc.); Good locations relative to local traffic; and Lack of in-zone competition that leads to product-splitting. An assessment of weak or adequate/weak typically results from: Chronic underperformance due to weak locations; Alternatively, theaters may lack modern amenities or upkeep, or compete with alternative entertainment and theaters in the area; and Comparison with peers based on attendance per screen and concessions per screen metrics. k) Music publishing and recording An assessment of strong or strong/adequate typically results from: Catalog of leading, well-known artists/bands that are "must-have" content for venues and media including streaming services; Proven successful A&R; development capabilities that support a strong artist roster and catalogue or recordings; and Negotiating clout to vary rights fees to writers/artists according to marketability. An assessment of weak or adequate/weak typically results from: Smaller catalog with few key artists/bands; Less successful A&R; efforts, leading to a lack of demonstrated history of consistently strong album sales and/or new artist development; and Limited or no flexibility to alter rights fees. l) Newspapers/magazines We typically do not assess newspaper/magazine publishers as strong or strong/adequate because of the persistent structural decline underway in the industry, fueling steady revenue and EBITDA declines. An assessment of adequate may result from: Content leadership in a niche, or category, or geography that supports growth in circulation revenue and steady or growing, ad rates amid secular decline; and Well-developed online or multimedia presence that represents a sizable percentage of total sales and supports digital subscription and advertising revenue growth. An assessment of weak or adequate/weak typically results from: Lack of category leadership, resulting in higher-than-average declines in newsstand sales, subscriptions, and ad rates amid secular decline; and Inability to monetize online or multimedia traction. m) Outdoor advertising An assessment of strong or strong/adequate typically results from: Above-industry-average revenue per display levels (yield); and Large percentage of digital displays when compared with the relevant average regional market levels. An assessment of weak or adequate/weak typically results from: Below-industry-average yields; and Low proportion of digital displays compared with the relevant average regional market levels. n) Printing We typically do not assess printers as strong or adequate/strong because of the persistent structural decline underway in the industry, often fueling steady modest revenue and EBITDA declines. An assessment of adequate may result from: Significant consumer focused online presence or ancillary marketing/consulting solutions; Footprint that allows for mass customization and ability to earn premium pricing; and Minimal focus on end markets with the weakest fundamentals and margins. An assessment of weak or adequate/weak typically results from: Minimal consumer-focused online presence; Less ability to compete on quality and service without heavy discounting to retain clients; and More exposure to weakest end markets and commodity-like print jobs. o) Radio stations We do not assess radio broadcasters as strong or strong/adequate because of the structural decline underway in the sector. An assessment of adequate may result from: Leading audience ratings during key day parts (i.e. morning drive); Ability to leverage ratings to capture and maintain appropriate share of advertising spending relative to its local audience; Significant presence in large markets that typically attract greater pools of advertising dollars; and Comprehensive digital strategy that provides data analytics and marketing services to advertisers. An assessment of weak or adequate/weak typically results from: Limited presence in top 25 markets; Lack of clear digital strategy that can offset declines in broadcast revenues; Low audience ratings versus peers; and Weaker ad sales as a percent of share of local audience than peers. Scale, scope and diversity In assessing the scale, scope, and diversity of a media and entertainment company, we consider the extent to which these factors support revenue, profit, and cash flow stability: Degree of profitable diversification across a range of products and services, content, audience, titles, or market segment; Geographic diversity; and Critical mass of operation (viewed in the context of the industry subsector's degree of consolidation or fragmentation). A media and

entertainment company with a strong or strong/adequate assessment of scale, scope, and diversity is typically characterized by: Profitable diversification across a variety of market segments; Good international presence or distribution capabilities, or broad domestic presence where applicable (e.g. local TV stations); Good presence in digital or mobile market where relevant; and Broad customer base, audience, or distribution channels. We do not typically assess companies in the following subsectors as strong or strong/adequate for scale, scope, and diversity because of the structural decline underway in the sector. Newspapers/magazines: An assessment of adequate may be warranted if the company has numerous titles with leadership positions; a sizable and profitable internet and mobile presence; international distribution; vertical integration with other, more stable media and content; limited revenue concentration; a variety of multimedia relationships and ongoing development of new ones; and distribution across multiple platforms. Radio stations: An assessment of adequate may be supported by a large number of geographically diversified stations in markets of all sizes and an ability to diversify broadcast revenue with digital and live event revenue. Printing: An assessment of adequate may be supported by a national/international scale of operation and broad offering of profitable products/services. A media and entertainment company with a weak or adequate/weak assessment of scale, scope, and diversity is typically characterized by: Heavy dependence on a small number of brands, products, services, talent, or titles; niche player in brands, products, services, or end-market clients with questionable long-term staying power; or more limited scope of products and services than direct competitors; Lack of convincing leadership in stable or growing categories; Lack of presence in digital or mobile markets and a lack of multimedia relationships that support business reinvention and technology migration, or revenue decline in online businesses, where applicable; Lack of international presence; or Declining customer base, concentration in business segments where competition hampers pricing integrity, or dependence on a small number of distributors. Operating efficiency In assessing the operating efficiency of a media and entertainment company, we consider: Cost structure, which vary widely by subsector. This includes, where applicable, the ability/inability to convert from defined-benefit to defined-contribution plans, and dependence on union workforce; The extent to which a company can pare costs in response to client or competitive pressure; and The resulting EBITDA margin or subsector-specific operating profit metric. A media and entertainment company with a strong or strong/adequate assessment of operating efficiency is typically characterized by: Economies of scale and efficiencies that lead to above-average EBITDA margins; Operationally critical costs at competitive levels (programming, marketing, distribution, content, labor, or overhead costs); and Ability to reduce cost without sacrificing content quality or losing the ability to pass on cost increases. We do not typically assess companies in the below subsectors as strong or strong/adequate for operating efficiency because of the structural decline underway in the sector. Newspapers/magazines: An assessment of adequate may be supported by economies of scale or effective outsourcing that leads to an above-average EBITDA margin; ability to cut costs or establish cost-sharing ventures as revenues decline under secular pressure; and absence of money-losing titles. Radio stations: An assessment of adequate may be supported by a low level of fixed costs with willingness and ability to reduce broadcast expenses at a rate that keeps pace with secular declines in broadcast revenues; and ability to target programming costs to highest-margin format. Motion picture exhibitors: An assessment of adequate may be supported by a balance of screens per theater, staffing flexibility to accommodate peak versus trough attendance, by season; the ability to reduce some variable costs during slower times; minimal money-losing locations; and/or staggered theater lease expirations that confer flexibility in closing money-losing theaters. Printing: An assessment of adequate may be supported by investment in leading technology to maximize margins; ability to downsize capacity to moderate pace of margin erosion from secular decline; and EBITDA margin above 15%. A media and entertainment company with a weak or adequate/weak assessment of operating efficiency is typically characterized by: Lack of economies of scale advantage or efficiencies, potentially aggravated by intense price competition, which lead to below average EBITDA margins; Dependence on costly marketing and promotions, as a result of severe competitive pressure; Key costs at uncompetitive levels (programming, marketing, distribution, content, labor, or overhead costs); Limited ability to reduce cost without sacrificing content quality, losing efficiency; limited ability to pass on cost increases; and Below-average EBITDA margins because of unsatisfactory audience ratings or

unsuccessful programming format changes, and inability to quickly improve EBITDA margins. Level of profitability We use EBITDA margin as the primary metric to evaluate the level of profitability of media and entertainment companies. We may also complement our analysis by using sector-specific measures and return on capital. For U.S. and European TV broadcasters, we may use only four years of EBITDA margin data to avoid skewing toward an election/Olympic, or nonelection/non-Olympic year. For European broadcasters, using four years prevents having two World Cup years in a five-year period. The four years would consist of one historical year, the current year, and two forecast years. In addition to EBITDA margin, we consider certain subsector-specific supplemental measures. Ad agencies: We may include such metrics as staff costs to revenue. Motion picture exhibitors: We supplement the standard lease-adjusted EBITDA margin with companies' non-lease-adjusted margin, providing an assessment of management's skill in selecting high-potential theater sites and negotiating advantageous terms with landlords. Local TV stations: We may use a supplemental measure of EBITDA margin based on trailing-eight-quarter average EBITDA margin (calculated as the sum of trailing-eight-quarter EBITDA divided by two), to avoid skewing assessments based on elections (in the U.S) and Olympic versus nonelection, non-Olympic years. This metric is most relevant for U.S. local TV stations, but we may use an analogous adjustment for some European broadcasters that broadcast high-profile sports events such as the football World Cup and European Football Championship--both held every four years. Supplemental ratios If the preliminary cash flow-to-leverage ratio indicated by the core ratios is intermediate or better, we frequently use: FOCF/debt (e.g. for capital intensive companies); CFO/debt (e.g. for working capital intensive companies); and DCF/debt (e.g. for companies that pay a significant dividend or follow diverging revenue or cost recognition practices). If the preliminary cash flow-to-leverage ratio indicated by the core ratios is significant or weaker, interest coverage ratios will frequently be given greater weight. Specifically for U.S. local TV stations (to avoid skewing ratio results toward either an election/Olympic or nonelection/non-Olympic year) we may consider an additional supplemental ratio: Debt to average trailing eight quarters' average EBITDA. We use the same thresholds as for the core ratio of debt/EBITDA for our assessment of this supplemental ratio. We often rely on FOCF to debt as our supplemental cash flow to leverage ratio for media and entertainment companies, especially when there are mismatches in when revenue and expenses are recognized and cash is received/paid. For instance: Media and entertainment companies generally follow the practice of recognizing revenue when services are performed. By contrast, cash collections related to the sale may span three-to-four years. Profitability metrics may not reflect the variability of these issuers' underlying cash flows. Moreover, we believe that the timing of revenue recognition may vary between U.S. GAAP and IFRS, hampering comparability of entertainment producers across regions. The majority of programming is expensed on the first airing of repeatable entertainment, or accelerated if audience or revenue expectations are not materializing. We track audience ratings to develop a view of situations in which failing shows will require accelerated cash expenditures for replacement shows, and in which write-offs likely are warranted. Given the diversity in practice around expense recognition, we often consider FOCF to debt. Volatility adjustment In accordance with the corporate criteria, we may adjust our cash flow leverage assessment based on the volatility adjustment. We regard major (top 10 global) ad agencies, most cable networks (except very small players with low penetration of cable systems), motion picture exhibitors, most radio and local TV station groups (except those with extremely weak EBITDA margins), major TV networks (top national networks, generally integrated with production), major film production studios (those that are vertically integrated, self-distribute globally, have a lengthy history of steady production, and have significant library cash flow), and most data publishers (largest players focused on content that clients need irrespective of economic cycles) as warranting an assessment of relative cash flow stability. Generally, low barriers to entry in e-commerce and ad-supported online content result in situation-specific assessments of these companies as volatile or highly volatile. Cash flow volatility varies by company and subsector. We typically classify marketing services, newspapers/magazines, and printing companies as volatile and pure-play feature film producers as highly volatile. The Metals Production And Processing Industry Competitive position group profile The CPGP assigned to most companies in the metals industry is commodity focus/cost driven. This assessment reflects that metals, for the most part, have standard specifications, most players are price takers, and profitability would be determined by the cost position

and efficiency of production of a given company's operations. We may assign the commodity focus/scale driven CPGP to distributors and processors or, in certain minority cases, to metals companies that compete on price and availability. Such companies do not differentiate greatly in terms of costs. In rare cases, we may assign the capital or asset focus CPGP when the company produces specialized metals (such as specialty steels) with more binding contracts, long-standing and sometimes exclusive relationships with clients, and where investments in fixed assets is a key factor. Competitive advantage In assessing the competitive advantage of a metals company, we consider: Product value added; Price and volume visibility, including contracts and some product differentiation or specialization; and Relationship with customers. We view competitive advantage as a secondary factor for most metals companies. We consider the mix of metals produced, how attractive the various segments are, and whether the company's market share provides additional benefits. In reviewing the added value in metal products, we assess the degree to which a metals producer differentiates itself from its peers by producing niche or specialty products, as opposed to commodity products that can be obtained from other producers or imported. Typically, specialty value-added products translate into higher or more stable selling prices or volumes. In reviewing the market dynamics, we observe that a company can obtain a competitive advantage in a segment with more rational pricing behavior, such as where the market is dominated by a handful of producers. Strong market positions also allow for reinvestment in fixed assets and R&D;, helping to maintain product leadership. Metals companies with a strong or strong/adequate competitive advantage assessment would typically have the following features: They produce tailor-made or higher-margin specialty value-added products that convey some pricing power; Their products are among commodities or more specialized uses; and They have strong customer relationships. Metals companies with weak or adequate/weak competitive advantage assessment are typically characterized by a combination of the following features: They produce common-grade materials, such as hot-rolled coil steel, rebar, or primary aluminum; They have short-term contracts or rely on independent distributors, with poor visibility on pricing and volumes; and Their market is highly competitive, lacks protective barriers, and is more vulnerable to imports. Scale, scope, and diversity In assessing the scale, scope, and diversity of a metals company, we consider: Production capacity, and number and location of plants; Product breadth; and Scale and diversity from integrated activities such as mining and material outsourcing. We typically consider the scale of a metals company in terms of its ability to translate its greater breadth and scope of operations into economies of scale, contributing to better profitability. We believe the key to product diversity is the ability to mitigate some of the volatility of metals prices, although the prices for many metals are correlated, or even based on a common benchmark. For diversity to provide significant credit protection, it must broaden exposure across end markets into products or geographic regions with more independent cycles. Dependence on one producing asset or numerous products that all are exposed to the same external factors can also increase operating risks. In addition, we assess the extent to which a company has fixed sales prices or volumes, or whether it is more exposed to the volatile spot market. We also consider whether a company's earnings stability benefits from upstream integration into mining or captive downstream businesses, or strong customer relationships. A metals company with a strong or strong/adequate assessment of scale, scope, and diversity typically has a combination of: A relatively high number of large plants and significant product range, notably higher added-value products, as well as end-market diversity; Exposure to different regions; and Diversity and scale provided by integration in mining activities or other raw material sources such as own scrap operations or captive external operations. A weak or adequate/weak assessment could result from the following factors: Dependence on a single plant, a single product, or only a few clients in a particular sector; Low geographic diversity--the company is limited to one region, or to regions where competition is particularly intense or undisciplined; and Concentration in markets with low growth or prolonged overcapacity. Operating efficiency In assessing the operating efficiency of a metals company, we consider: Cost profile with respect to raw material, energy, and labor; Capacity utilization, cost flexibility, and the state of its asset base; and Returns on investments in this capital-intensive sector. In assessing a metals company's cost profile, we evaluate its ability to source its raw materials at a competitive cost and its exposure to price fluctuations of these raw material and electricity. Producers with a high degree of vertical integration and good access to their own low-cost raw materials benefit from a more stable

cost base than less-integrated competitors. In our view, in-house sourcing of materials is not necessarily an advantage. It's only an advantage if it's at a competitive cost and supports a good margin. Otherwise, maintenance capital expenditure requirements may make it a negative. Proximity to an adequate supply is important if an input has a high weight-to-value ratio that makes transportation costs prohibitive. In reviewing capacity utilization, we assess how flexible a company is in terms of production level versus its fixed cost structure. In times of low demand, the ability to reduce production and costs is an important competitive factor. A metals company with a strong or strong/adequate operating efficiency assessment typically has a combination of: Low-cost production, notably with access to cheap raw material, energy inputs, and low-cost or flexible labor; High capacity utilization; Modern and well-invested production facilities; and Flexible manufacturing systems, with multiple finishing lines. A metals company with a weak or adequate/weak operating efficiency assessment typically has a combination of: Low capacity utilization resulting in high fixed costs; Dated technology or limited ability to adjust operations to market conditions; and High-cost production, potentially from high energy costs, poor availability to raw materials, or an inflexible labor market. Profitability We use EBITDA margin as the primary indicator of a metals company's level of profitability, based on thresholds identified. The metals sector is not homogenous, and various metals and technologies have different capital intensity, so we complement the analysis of overall EBITDA margin with absolute dollar EBITDA per ton of metal produced, return on capital, the ability to generate cash through the cycle, and the ability to adapt operations and recover quickly from industry downturns. Those are measured relative to peers. We may put more emphasis on forecast years if historical data is not deemed representative, or if we believe it doesn't take into account deteriorating or improving profiles where prospective ratios meaningfully differ from average ratios. In some cases, the application of local accounting rules may warrant using different thresholds to account for financial reporting differences. Financial risk profile and supplemental ratios Our assessment of the financial risk profile takes into account historical ratios for the last two years and forecasts for current and two subsequent years based on S&P; Global Ratings' price assumptions for metals (see "How S&P; Global Ratings Formulates, Uses, And Reviews Commodity Price Assumptions," published Sept. 28, 2018). In addition to our analysis of core ratios, we consider supplemental ratios to develop a fuller understanding of a company's credit risk profile and refine our cash flow analysis in accordance with the corporate methodology. Given the high capital intensity of the sector, with high investments and working capital needs, FOCF to debt and cash flow from operations (CFO) debt are typically the most relevant supplemental ratios. When the cash flow and leverage assessment indicated by the core ratios is significant or weaker, we also consider coverage ratios of FFO plus interest to cash interest and EBITDA to interest. Financial policy Given the importance of capital expenditures for the cash flow profile of the company, we pay particular attention to willingness and ability to reduce capital expenditures in weaker market conditions. This is assessed on the basis of both a company's current statements and incentives, such as potential ownership dilution, and its track record during the previous downturns in the industry. The Mining Industry Country risk To measure country risk exposure for a geographically diversified company, we generally look at the EBITDA breakdown by the countries where fixed assets are based. If information on EBITDA is not available, we may also look at operating profit, EBIT, pretax profit, or fixed assets. When taxation is different across countries, we focus on after-tax measures such as net profit and FFO, if the information is available. We also focus on where assets are located, despite that revenues are often derived from diverse export markets, which partly mitigates the country risk. Only in rare cases, when fixed assets are based in a low-risk country but export sales are made to a high-risk country and cannot be easily redirected elsewhere, would we measure risk exposure to the high-risk country by determining the share of EBITDA or revenue from that country. Competitive position group profile The CPGP assigned to most mining issuers we rate is commodity focus/cost driven. This assessment reflects that mining companies that have a low cost position are best able to resist the cyclical price swings inherent to the sector. Metals and bulk commodities have standard specifications, competition is based almost exclusively on price, and even the strongest mining companies cannot differentiate their products to get better or more stable pricing. However, concentration risk becomes an overriding factor for companies that depend on a small asset base, such as a single mine or a cluster of mines in a single region. We assign these companies the

commodity focus/scale driven CPGP. That said, if a company has a concentrated asset base but represents a large-scale, well-established mining operation with a long reserve life, we could still use the commodity focus/cost driven approach. Competitive advantage In assessing a mining company's competitive advantage, we consider: The ability to increase production and reserves through internal development; Growth potential and strategy; and Market access, sales contracts, and pricing power, if those are relevant. In assessing a company's ability to increase production and reserves through internal development, we consider the pipeline of projects over an extended period. For a competitive advantage assessment of adequate or better, we would typically expect the company to have a robust pipeline over the next five to 10 years. We also consider the company's technical resources and capabilities, the track record in bringing projects into production, and the riskiness of its growth strategy, which should be demonstrated by converting nonproducing reserves and resources into output at an attractive operating cost and return on capital. The absence of growth or declining production indicates poor prospects for meeting medium- to long-term debt-service requirements. In addition, we believe an aggressive growth strategy, such as the construction of a single project that is bigger than the company's existing operations or acquisitions into unfamiliar jurisdictions in this socially sensitive industry, could stretch management resources, entail high execution risks, and strain funding sources. In assessing access to market, sales contracts, and pricing power, if relevant, we consider the existence of captive infrastructure, which is especially relevant for bulk commodity producers. We also consider long-term contracts, if any, preferred-supplier locations, and industry concentration that translate into higher or more stable pricing. A mining company with a strong or strong/adequate competitive advantage assessment typically has a combination of the following factors: Good growth potential demonstrated by availability of projects and a strong track record; No dependence on the success of one project; A moderate, achievable growth strategy that preserves management resources and funding capacity; and An advantage over its peers in access to market, contract profile, or pricing power, if applicable. A mining company with a weak or adequate/weak competitive advantage assessment typically has a combination of the following factors: Limited growth potential or a risk of declining production; Dependence on the success of one big project; An aggressive growth strategy; and A disadvantage over its peers in access to market, contracts, or pricing. Scale, scope and diversity In assessing the scale, scope, and diversity of a mining company, we consider: Asset diversity (the number and size of operations); Reserve life of the assets; Diversity of operations by commodity produced; and Geographic diversity of operations and mining-specific jurisdiction risk exposure. We expect mining companies with greater asset and commodity diversification to exhibit more stable earnings and cash flow, based on reduced exposure to events or fluctuations in the commodity and end-use markets. For instance, a company with meaningful EBITDA contribution from three or four commodities with demonstrably independent price and volume drivers could be viewed as well-diversified. We view longer reserve lives more favorably and generally measure them by dividing proved ore reserves by the expected production volumes (based on current rates or future production rates, if the company expects significant increased production in the next few years). That said, we also incorporate the prospective capital required to extract proven reserves. Reserves proven up through drilling could lack mining infrastructure, meaning that this source of reserve life would consume significant cash over several years for mine construction before generating any meaningful revenue. In assessing geographic diversity and mining-specific jurisdiction risk exposure, we evaluate a company's exposure to particular country or jurisdiction risk factors that are relevant to mining but not necessarily to other industries, and to the extent that the factors are not sufficiently captured in the general country risk score. These factors may include environmental protection pressures, inferior infrastructure that is critical for mining, labor relations, mining-specific environmental regulations, taxes, and export regulations, and government policies that ensure predictability of future taxation and regulations. Finally, we evaluate offsetting factors, such as ownership of the company and the extent to which it may lower the likelihood of negative changes in regulation or taxation, a track record of managing these risks, or a unique position such as reliance on captive infrastructure. A mining company with a strong or strong/adequate scale, scope, and diversity assessment typically has a combination of: A number of large-scale assets; Long-reserve-life assets (typically with proved reserve lives of at least 10 years in major operations); Meaningful product diversity; and Limited or well-diversified exposure to countries

with high mining-specific country risks. A mining company with a weak or adequate/weak scale, scope, and diversity assessment typically has a combination of: Dependence on one or a small number of small to medium-size assets (for instance, dependence on output from a regional cluster of mines); Short-reserve-life assets (typically with proved reserve lives of one to three years); Limited product diversity; and Significant exposure to a country with high mining-specific country risks. We may assess a single-commodity producer from a single region as adequate in its scale, scope, and diversity if it meets the following characteristics: Large-scale production; A low-risk operation with multiple operating faces in the same pit, or with several different independent production streams; and Assets with a reserve life of well above 10 years. Operating efficiency In assessing operating efficiency for a mining company, we consider cash cost positions on the global cost curve, as influenced by the quality of its reserves, the nature of its mining operations, the quality of its infrastructure, its energy and labor cost profiles, and its currency profile. We also consider the profile of off-take contracts, where relevant. A company's cash cost positions on the global cost curve (the curve that plots all mining operations for a given commodity in ascending order) is the primary consideration. We aim to evaluate the position of each asset because the cost position is not merely a question of the commodity's average cost. A company with some first-quartile and some fourth-quartile assets may have a stronger position than a company with concentrated third-quartile assets because high-cost mines may be closed in a downturn. Cash costs can be influenced by a number of factors, including costs of mining and delivery to end markets; risks that could lead to higher expenses or stoppages; quality of commodity, byproducts and infrastructure; the skill level and flexibility of the work force; and exposure to currency fluctuations. For some companies, usually small ones, off-take contracts may be an important consideration in assessing operating efficiency to the extent the companies contractually fix volumes and prices for the produced commodity and the counterparty is sufficiently creditworthy. A mining company with a strong or strong/adequate operating efficiency assessment typically has a combination of: Is in the first or second quartile of the industry cash cost curve; Has high and stable ore grades; and Has modern concentrating, refining, and smelting equipment. A mining company with a weak or adequate/weak operating efficiency assessment typically has combination of: Is in the third or fourth quartile of the industry cash cost curve; Has low or unstable ore grades; and Has outdated or old equipment. Profitability We use EBITDA margin as the primary indicator of profitability for mining companies. Because the mining sector is not homogenous, and various metals and technologies have different levels of capital intensity, we may complement the analysis of overall EBITDA margin with two supplementary measures that we assess relative to those of peers: Absolute-dollar EBITDA per ton of primary metal produced (this is particularly relevant for a company with a high share of low-margin/low-risk refining or smelting or trading operations); and Return on capital. We may calculate a longer period if we believe the five years of data we typically use reflect only the trough or the peak of the commodity cycle and are, therefore, not representative. Also, we could be more demanding than the through-the-cycle reference margins shown in tables 2-3 if persisting capital expenditure requirements are high, and vice versa. Volatility of profitability Even when using historical data, we frequently adjust the assessment by one or two grades--for instance, because of elevated country risk, the company's small size compared with peers, concentrated cash flows and event risks, rapid growth in production volumes from start-up operations, possible change in the volatility pattern of a specific commodity, or technology exposure. Therefore, we expect only a few companies to have a volatility of profitability assessment of '1' or '2'. Most mining companies would be assigned a '3' or '4'. Similarly, for smaller, less diversified companies, an assessment of '5' or '6' may be warranted, even if the SER (in tables 4-6) is indicative of a profitability assessment that is less volatile. Financial risk profile and supplemental ratios Our assessment of the financial risk profile takes into account historical ratios for the last two years and forecasts for the current and two subsequent years based on S&P; Global Ratings' price assumptions for metals. For a company with significant exposure to a metal or bulk commodity for which we do not have price assumptions, we develop a set of prices for the next three years based on forward curves for the commodity, if available, and our expectations for demand/supply balance in the industry. We complement the analysis of the cash flow coverage ratios with our view of the company-specific volatility of cash flow and the capital expenditure program, both of which tend to be significant in the industry. We also consider supplemental ratios to develop a fuller understanding of

a company's credit risk profile and to refine our cash flow analysis in accordance with our global corporate criteria. Given the high capital intensity of the industry, we generally consider FOCF to debt, if the core ratios are intermediate or better. When the cash flow/leverage assessment indicated by the core ratios is significant or weaker, we consider: FFO plus cash interest divided by cash interest; EBITDA to interest; and FOCF to debt if a company with limited debt embarks on an ambitious capital expenditure program that would be difficult to curtail significantly in case of an economic downturn. Working capital funding fluctuations and cash flow from operations to debt are of limited importance in the mining industry because margins are fairly high and the cash conversion cycle is short, and because working capital outlays usually coincide with a strong industry environment and high FFO, and vice versa. Volatility adjustment Given the significant cyclicality in the mining industry, we expect to classify many mining companies' cash flow/leverage assessments as volatile or highly volatile, meaning we expect their cash flow/leverage ratios to move one to three categories worse during a market downturn. The Oil And Gas Exploration And Production Industry Competitive position group profile For E&P; companies, we typically use the commodity focus/scale driven CPGP. We apply the national industries and utilities CPGP when the government policy or control, regulation, taxation, and tariff policies significantly affect the industry's competitive dynamics. For integrated and E&P; companies, we consider this to be the case when at least one of the following conditions applies: Heavy taxes influence net profits more than other purely operating factors (such as lifting and transportation costs). When tax rates change in proportion to the oil price, they act as a natural hedge and make profits more resilient to potential price shifts. There is price regulation or quasi regulation, when the regulator sets domestic prices, which can be materially different from international or local benchmark prices. National hydrocarbon companies enjoy monopoly rights, or have a preestablished preferential access to significant reserves, which effectively creates high barriers to entry. The assessment of competitive advantage, scale, scope, diversity, and operating efficiency in these cases reflects advantages or disadvantages based on these national industry-specific factors: To what extent heavy taxes or domestic price regulations affect profitability through the cycle; To what extent regulations have a stabilizing effect on profits (that is, whether taxes act as a natural hedge); Whether the company has any advantages due to barriers to entry created by the regulatory framework in the hydrocarbon industry; and How stable the regulatory regime is and how resilient it is to potential changes in international oil prices. Competitive advantage In our opinion, an upstream company's ability to manage the risks associated with replacing and increasing reserves largely determines its overall competitive advantage. For integrated and E&P; companies, we assess the following to determine a company's competitive advantage: The growth prospects inherent in its acreage; The mix of liquids and gas produced; The unit revenues realized at each producing region; and The extent of vertical integration, if any, among operating segments. We assess a company's ability to increase production and reserves through internal development, taking account of such factors as: Its exploration and development track record, plans, technical resources and capabilities, and budget; Its acreage position (which is particularly important for tight oil producers); and Its project queue (which we assess based on reserve life index [RLI] over an extended period--as long as five to 10 years for companies with satisfactory business risk profiles). Absence of growth can indicate poor prospects for continuing to meet debt service requirements. As a result, companies with business risk profiles below satisfactory tend to have an RLI of fewer than five years. On the other hand, sustained high growth can strain funding sources. In our view, a balance between liquids and natural gas production is credit positive in markets where there is a low price correlation between the two. Also, the type and quality of hydrocarbons produced affect revenues. For example, light, sweet crudes receive a premium over heavy, sour crudes, because the former require less refining treatment and produce a slate of products with a greater percentage of high-priced, light refined products (such as gasoline, kerosene, and jet fuel), rather than heavy, refined products (residual fuel oil). Wet gas (containing natural gas liquids) also commands a premium over dry gas because of its higher energy content. Price and quality differentials on produced hydrocarbons can affect prices and resulting cash flows. Another factor affecting E&P; companies' revenues is the basis differentials--the difference between a particular regional price and the benchmark price. Differentials usually result from transportation costs and the production area's supply and demand characteristics. A company producing in a region with high transportation cost to market or limited capacity to transport

hydrocarbons away from the region will sell at a discount to the benchmark price--which is an adverse factor. On the other hand, if it is supplying hydrocarbons to a region with low transportation cost or high demand, hydrocarbons might sell at a premium, leading to higher unit revenue, cash flow, and earnings for the company. Integration and diversification can be a significant aspect of an E&P; company's competitive position, to the extent that they enhance and add stability to financial performance, taking account of the capital employed. It is common for larger E&P; companies to operate a cluster of ancillary, related businesses. Although, strategies regarding these have varied considerably, as have financial results. Examples of integration and diversification include: Natural gas processing plants; Oil and gas common long-haul or gathering pipelines; and Oilfield services operations and assets, such as drilling rigs and pressure pumping equipment. Participation in pipeline operations with third-party volumes, in particular, can sometimes afford an E&P; company a highly stable source of earnings not closely correlated with its base earnings. Vertical integration, in the form of ownership of oilfield services operations and assets, can facilitate cost-effective growth in reserves and production during periods when third-party suppliers are capacity-constrained. However, it also adds to fixed costs and can exacerbate a downturn's adverse effects. An E&P; company warranting a strong or strong/adequate competitive advantage assessment typically has a combination of the following: A strong track record of project execution, with production and costs that compare favorably with adjacent operators; A track record of allocating capital to basins with favorable internal rates of return (typically exceeding 30%); Business segments that extend E&P; operations to enable demonstrably better profitability, or more stable financial performance throughout the business cycle; Some integration of transportation and services, such as drilling rigs, that result in lower unit costs than if the operator sourced via a third party; and Some degree of leverage with customers and suppliers. An E&P; company with a weak or adequate/weak assessment of its competitive advantage typically has a combination of the following: A poor track record of project execution, with production and costs inferior to operators with adjacent acreage; A lack of a track record of allocating capital to basins featuring favorable internal rates of return; Operations with inferior profitability or more volatile financial performance throughout the business cycle; A lack of leverage with customers and suppliers; and A lack of integration with transportation and equipment and services. Scale, scope, and diversity E&P; companies can develop meaningful scale, scope, and diversification in their operations by effectively adapting changing technologies to exploit newly discovered reservoirs. Hydrocarbon reserves are the key asset of an E&P; company, and their characteristics are a critical aspect of our assessment of its scale, scope, and diversity. We assess the characteristics of the reserves, including: The size of the reserves (larger reservoirs leads to economies of scale); The makeup in terms of liquids (such as crude oil and natural gas liquids) rather than natural gas; The operational risk inherent in the exploitation of the reserves (for example, deep water production being much riskier than onshore operations); The geographic diversity of production sources; and The company's current production and future growth prospects. Consistent with the industry standard, we generally assess reserves and production on either a barrel of oil equivalent (boe) or thousand cubic feet (mcf) of natural gas equivalent basis, which we determine by using the energy content equivalency ratio of six mcf of natural gas to one barrel of crude oil, or natural gas liquids. We also consider the composition of ongoing revenues because the energy equivalent can be significantly out of synch with market prices. A large reserve base relative to that of peers implies better operating flexibility, geographic diversity, and economies of scale. A large E&P; company operating in many geographically diverse fields is insulated from dependence on the operational performance of a small cluster of wells or fields and less susceptible to regional price volatility. A geographically diversified portfolio can also provide avenues for cost-effective investment if regional factors affect production or reinvestment in a particular area. Furthermore, the size and type of individual reservoirs is important for a company. A large reservoir (whether onshore or offshore) provides economies of scale because the company can spread its overhead and capital investment across more production. Large companies also might have access to more favorable financing terms--a significant competitive advantage when developing or buying properties--and added financial flexibility during industry downturns. However, if it operates in several basins, of which only a few typically account for the dominant share of its earnings, that limits the extent to which we view its production as diversified. Nevertheless, in our view, a company operating in one major basin (for instance, the

Western Canada Sedimentary Basin) could warrant a strong/adequate scale, scope, and diversity assessment, as long as we expect it to generate above-average profitability and if its acreage position is extensive and provides visibility to a production profile of at least 10 years. When assessing reserve quality, we consider the following key measures: the proved developed producing (PDP) ratio, RLI, and the reserve replacement ratio (RRR). Proved developed reserves. In general, companies with a high PDP ratio (the percentage of PDP reserves relative to total proven reserves) have better business risks because proved developed reserves have lower future development costs and production risks (both in terms of potential for cost overruns and for shortfalls in production compared with expectations) than undeveloped reserves. However, a very high percentage of proved developed reserves might indicate potential for deterioration in reserve replacement if we believe a company might have difficulty developing its undeveloped or probable reserves. Where we believe there is little risk associated with developing reserves (for instance, mining-type oil sands operations, which are akin to strip mining operations where the reserves are close to the surface), we do not place much emphasis on the distinction between proved developed and undeveloped reserves. The reason is that there is little geological risk associated with converting proved undeveloped reserves (PUD) and probable reserves into proved reserves. We could extend this analysis to other forms of unconventional oil and gas reserves. The U.S. SEC and equivalent authorities in other areas define the standards for categories of reported reserves, but there is still a measure of management discretion in the application of these standards. Proved developed reserves (rather than PUDs or probable or possible resources) are the most direct source of current production and cash flow. PUDs require capital investments to convert them into proved developed reserves. RLI. We define this as reserves divided by annual production. An RLI indicates the timeframe over which a company will deplete its existing reserves at current production rates. We assess RLI in the context of a company's total reserve base, prospects for organic or acquisition reserve growth, capital position, and operating team. A short RLI (for instance, of less than five years) might indicate a lack of success in reserve replacement or limited capital investment focused on organic and acquisition-related growth. A long RLI (that is, 10 years or more) might indicate a company's low-risk reserve base and relative stability of its production outlook (this is generally the case for oil sands- or shale-focused companies). On the other hand, a long RLI can also imply possibly overstated reserves or a company's inability to ramp up production. In assessing reserves, we also consider the underlying, assumed depletion rate. If the depletion curve is steep, that implies there is a risk of a significant decline in production beyond the next few years if reserves are not replaced. RRR. This indicates how much of the produced hydrocarbons a company has replaced, either through organic growth (through the drill bit) or acquisitions. The size of the company's reserves or stage of development largely influences the measure, which we view together with unit finding, development, and acquisition (FD&A;) costs (see "Operating Efficiency"). For an E&P; company with a small reserve base in a rapid growth mode, it is not uncommon for reserve replacement to be a multiple of annual production. In this case, an RRR of at least 100% is a critical benchmark. On the other hand, an extremely large E&P; company might not be able to replace 100% of its production organically, instead using a combination of development and acquisitions. We might view the more-than-100% RRR as excellent for a major E&P; company but mediocre for a small, formative company. Companies with an RRR of more than 100% for several years could see an improving business risk profile, given the potential for future production growth. E&P; companies frequently buy assets to enter new areas or consolidate their interest in existing properties, while divesting noncore or high-cost assets to streamline their portfolios or to raise funds. In considering acquisitions, we focus on how much the company paid for the assets, the opportunities the assets afford for yielding reserves and production, whether there are economies of scale for the company, and whether it has the ability to manage the new properties. Usually, E&P; companies operating projects have a better control of the cash outlay compared with those that rely on third-party operators. E&P; companies that acquire assets and increase reserve size and production, manage costs, and obtain higher rates of returns on their investments should be able to strengthen their scale, scope, and diversity. An E&P; company that warrants a strong or strong/adequate assessment of scale, scope, and diversity typically has a combination of the following: Large scale, with reserves typically exceeding 1.5 billion barrels of oil equivalent, and production typically exceeding 500,000 boe per day; An RLI of 10 years or greater; An

RRR greater than 100% on average across at least three years, and prospects for production growth given its drilling inventory and queue of planned investment projects; Allocation to liquids (crude oil and natural gas liquids) along with natural gas in its reserve mix; Geographic diversity, with the majority of fields or projects having well-established track records of development activity and in relatively low-risk countries (that is, those with a country risk score of '3' or lower); and Exceptionally low risk to production and reserve replacement, even if the company has a concentration in a relatively small number of fields (as is typical of certain Canadian oil sands projects). An E&P; company that warrants a weak or adequate/weak assessment of scale, scope, and diversity typically has a combination of: Small scale, based on total reserve base usually less than 50 million boe, on a proved developed basis, and a production base usually less than 30,000 boe per day; An RLI of five years or less; Geographical concentration, with the majority of cash flows from one basin; Significant uncertainty with respect to sustainability of production and reserve replacement; and An RRR of less than 100% in the past three years, with limited prospects for growth in production. Operating efficiency In assessing operating efficiency for an E&P; company, we consider its operating and production costs and its reserve replacement costs, as well as related capital efficiency measures such as: Unit cash costs and unit FD&A; costs relative to those of peers; Unit cash margin (or netback), which is equivalent to an operating margin, relative to FD&A; costs; and Revenue per unit of production relative to unleveraged costs. We evaluate capital efficiency by comparing an E&P; company's finding and development costs, which we view as the best measure of organic growth capabilities. We also assess the unit FD&A; (also known as all-sources finding and development) cost to its unit cash margin (or netback). An upstream company's netback is synonymous with an operating margin per unit. The ability to replace reserves is critical because a company will eventually fail if it cannot economically replace its reserves. In addition, the cost of replacing reserves (unit FD&A; costs usually are 50% or more of a company's total unit cost base) significantly affects financial performance. An E&P; company's unit netback relative to its unit F&D; (or FD&A;) is its recycle ratio. At a minimum, the recycle ratio should be at least 1x to ensure a company's continued viability. A recycle ratio of less than 1x would indicate continued viability is at risk and would typically contribute to an assessment of weak for operating efficiency. The unit FD&A; cost indicates how much capital a company spends in all forms to replace a unit of hydrocarbon produced. Unit FD&A; cost can vary from year to year. E&P; companies generally need to spend large amounts on exploration and development of offshore fields over many years before recognizing reserves, so they will show poor unit FD&A; cost until then. Comparisons of F&D; costs and FD&A; costs can be distorted if there is a significant increase in PUDs or unproved resources. FD&A; costs and reserve recognition can be uneven year to year. Therefore, we typically focus on unit FD&A; costs over a three-year period. This removes some of the volatility while still being sensitive to underlying trends. A company that generates unit cash margin significantly above its unit FD&A; cost should be capable of generating annual increases in reserves and production--or at least maintain constant levels in the case of the largest players--without any external funding requirements. We also assess the upfront costs related to develop basins. Capital spending for some projects can be sizable (for example, Canadian oil sands or tertiary projects that can require very costly pipeline infrastructure) even before E&P; operators can begin to produce. Depending on the balance of fixed costs versus variable costs, E&P; companies have varying degrees of financial performance volatility. Broadly, an E&P; company's cost base consists of its operating and production costs and its reserve replacement costs. Operating costs and investment requirements largely are a function of the specific hydrocarbons the company produces. Generally, crude oil has a relatively higher operating cost associated with it than natural gas. As well, based on the producing region, operating costs (which generally support current production) can be more or less competitive than those of peers. A company's capital expenditure must support its exploration and development program to maintain and increase reserves and production. In some cases, there is a lag between periods of peak capital spending requirements and the subsequent production. This is often the case with offshore production projects. Therefore, we compare cash operating costs against capital costs. E&P; companies produce commodities and have no control over selling prices (except through hedging), so cost control is an important aspect of their credit profiles. In particular, it's an important determinant of long-range operating strength since managing costs might allow companies to expand and generate cash flow. However, most E&P; companies depend on

third-party companies for certain critical services (for instance, drilling and pressure pumping and fracking), so they have little control over the related costs. Apart from the case of mature fields, companies that are start-ups or are developing new production typically have high cash operating costs, largely with high early-stage lease operating expenses and general and administrative costs, which heighten risks by dampening financial performance. Subsequently, as the company increases its production, overall lease operating expenses and general and administrative costs in the same area do not increase proportionally because the expenses are spread over a larger production base. In contrast, companies with a large stable production base and sustainable growth prospects should have a competitive advantage over less mature peers. Those that experience production shutdowns, either because of maintenance requirements, pipeline outages, or weather, will see cash operating costs rise per unit of production. The combination of unit cash operating cost (excluding interest expense) and unit FD&A; costs is what we define as the unleveraged cost. In assessing an E&P; company's operating efficiency within its competitive position, we use the unleveraged full-cycle costs in ranking operating efficiency because our assessment of a company's financial risk profile captures the financing burden associated with leverage. An E&P; company warranting a strong or strong/adequate operating efficiency assessment typically has a combination of: Unit cash operating and unit FD&A; costs that are consistently lower than peers with a similar hydrocarbon mix; and Revenues per unit of production that are consistently higher and that we expect to remain consistently higher than unit unleveraged costs under our pricing assumptions, with unit cash margins that can fund unit FD&A; costs internally. An E&P; company warranting a weak or adequate/weak operating efficiency assessment typically has a combination of: Consistently higher unit cash costs (for instance, costs to extract oil and gas) and consistently higher FD&A; costs than peers with a similar hydrocarbon mix; and Revenues per unit of production that are consistently lower than unit unleveraged costs (and that we expect to remain so) under our pricing assumptions, with unit cash margins that cannot fund unit FD&A; costs internally (external financing is essential for the company's growth). Level of profitability The primary metrics we use to evaluate profitability for E&P; companies are: Adjusted unit earnings before interest (unhedged earnings before interest and after taxes of each unit of production, factoring in S&P; Global Ratings' off-balance-sheet adjustments); Return on capital; and Earnings before interest margin; we may also include EBIT margin (for instance, pretax) as a proxy metric, depending on availability of data and relevance in the peer group used to benchmark a company. Each year, we rank companies based on these profitability measures. Companies with above-average profitability typically have metrics that fall in the top quartile of the ranking. Those with average profitability typically have metrics in the middle 50%. Those with below-average profitability typically have metrics in the bottom 25%. The thresholds for each of these categories will likely change from year to year because of natural hydrocarbon price volatility and possible changes in company operating efficiency metrics. So, we expect the benchmark thresholds for above-average, average, and below-average profitability could vary from year to year. Reserve disclosures In most countries, E&P; companies are required to disclose their reserves at the end of each year; we require these disclosures to rate an E&P; company. There are differences in definitions used and level of disclosure required, which can complicate cross-country comparisons. Moreover, we believe there is some management discretion over such matters as the categorization of reserves and resources--that is, between proved developed, proved undeveloped, and probable. We view reserve reports prepared and audited by internationally recognized third-party engineers as having the greatest credibility, compared with companies that prepare their reserve reports internally and only audited by third-party engineers, or that use less-well-recognized engineering firms. To assess the reliability of reserve disclosures, we also evaluate whether a company has historically posted substantial or frequent negative performance reserve revisions, which can indicate an aggressive policy of reserve bookings. In this instance, we may hold these companies to a higher standard for reserve size and quality (based on a higher proportion of proved developed reserves) relative to similarly rated peers. However, in our analysis of reserve bookings, we typically have a greater tolerance for negative price-related revisions. These generally occur in periods of declining oil and gas prices, and reverse when prices improve. Financial risk profile and supplemental ratios Our assessment of the financial risk profile takes into account historical ratios for the previous two years and notable forecasts for the current and two subsequent years based on our price

assumptions for oil and natural gas prices. In addition to our analysis of a company's core ratios, we consider supplemental ratios to develop a fuller understanding of its credit risk profile and refine our cash flow analysis. In our view, an E&P; company's inability to fund its minimum ongoing investment requirements (or maintenance capital spending) would be the most likely source of financial stress, since reserve replacement and, therefore, production stability rely on substantial access to capital. Therefore, we consider as supplemental ratios: FOCF to debt (after considering, at a minimum, maintenance capital spending requirements); and DCF to debt (most relevant for issuers that pay out a portion of excess cash flow to shareholders as dividends). The Oilfield Services And Equipment Industry Competitive position group profile The CPGP assigned to most oilfield services and equipment issuers that we rate is commodity focus/scale driven. However, for equipment manufacturers and large, diversified oilfield services companies that operate in a segment where proprietary technology is an important differentiator of competitive advantage and are less exposed to hydrocarbon price swings, we assign a CPGP of capital or asset focus. Competitive advantage In assessing the competitive advantage of an oilfield services and equipment company, we consider: The technological complexity of its services and equipment, The product's value or importance to customers, Ability to quickly service or replace equipment, The services and equipment pricing power or susceptibility to price competition, and Relative market position in its market segment. Leading technology adds value by improving on existing services and/or equipment or enhancing the recovery of reserves. A product's or service's value to a customer is key to its demand and pricing power. Given the significant cost of downtime, the ability to service equipment in a timely manner is a key determinant of market acceptance and brand reputation. Price competition can become a significant source of pressure on profitability during cyclical downturns or when there's excess equipment supply, especially for companies with lower complexity, commodity-like services and equipment. Market-leading companies often have greater global reputations, product demand, and pricing power, as well as the ability to quickly respond to customer demands. An oilfield services and equipment company that warrants a strong or strong/adequate competitive advantage assessment typically has a combination of: High-technology-content services and equipment, enabling it to assist customers to tackle more challenging projects, while affording barriers to entry and pricing power; Track record of developing successful new services and equipment through R&D; that maintain some level of technological leadership and favorable industry reputation; Ability to offer a suite of services and equipment to add customer value and limit competition from single product providers; and Leading positions in its market segments. An oilfield services and equipment company that warrants an adequate/weak or weak assessment of its competitive advantage typically has a combination of: Provider of low-value-added or commodity-type services and equipment that limit differentiation from peers and can limit a company's ability to maintain market share; Services and equipment that do not contribute materially to improving E&P; producers' success rates and production costs, resulting in low utilization during weak market conditions; High susceptibility to price competition, especially at low points in the business cycle, that adds to profitability volatility; and Second-tier position in key market segment. Scale, scope, and diversity In assessing the scale, scope, and diversity of an oilfield services and equipment company, we consider: The relative size of its revenue and EBITDA, The depth and breadth of its product offerings, The geographic balance of its sales and EBITDA, and Its degree of customer concentration. We expect oilfield services companies with greater scale, scope, and diversification in these areas to exhibit more stable earnings and cash flow. The larger oilfield services and equipment companies are generally leaders in technological innovations due to their ability to invest in significant R&D; and bring new services and equipment to market on time. This, in turn, helps maintain their market position and some pricing power. We generally believe that a diverse array of product offerings should provide greater flexibility and financial stability during downturns by lessening dependence on any one product. But, some downturns are so extreme that all markets are severely affected. A balance of production-driven and exploration- or development-driven services and equipment is often an advantage for a company. The relative attractiveness of the markets (in terms of size, expected growth, cyclicality, barriers to entry, and intensity of competition, etc.) and how the company is positioned in those markets, influence our assessments of scale, scope, diversity, and competitive advantage. Furthermore, we generally view diversity among hydrocarbon markets, notably natural gas and crude oil, as supporting ratings,

particularly in North America. Large, established E&P; companies with broader geographic and customer diversification are usually less prone to wide swings in capital spending and resulting demand for services and equipment through most price environments than smaller customers. Slow collections can be a particular problem for small companies given their generally limited ability to command more favorable terms, particularly for commodity-like services and equipment. Occasionally, companies in the oilfield services and equipment sectors might have long-term contracts with clients, in which case we analyze to what extent such contract base contributes to cash flow predictability. An oilfield services and equipment company that warrants a strong or strong/adequate assessment of scale, scope, and diversity typically has a combination of: Top-tier revenue base in the industry reflective of leading market share across three or more broad product and service segments; Participation in multiple product lines mitigating a firm's exposure to the risks of a single market or commodity; Geographic diversity of operations and cash flows, with most services being of significant scale and in relatively low-risk countries/regions (country risk score of '3' or better) or diversified across multiple countries/regions; Strong, long-term customer relationships from a diversified customer base; and A significant amount of business conducted under contracts with favorable provisions, including protective clauses that reduce the risk of cancelation of orders. An oilfield services and equipment company that warrants an adequate/weak or weak assessment of scale, scope, and diversity typically has a combination of: Limited scale and breadth of operations; Limited product offerings, often with low-value-added product offerings, and subject to very high competition; High exposure to the E&P; industry's more cyclical exploration spending; High geographical concentration and/or significant exposure to high-risk countries; and Limited customer diversification and dependence on smaller, more cyclical customers. Operating efficiency When assessing the operating efficiency of an oilfield services and equipment company, we consider: The flexibility of the cost structure; Working capital needs during times of weak market conditions; and Efficiency and quality of equipment manufacturing. Given the potential volatility of product or service demand, a flexible cost structure and working capital requirements are key to performance through a business cycle. It is a generally accepted practice that if equipment is not in use, the associated crew can be released and later rehired or replaced when demand improves. Equipment manufacturers generally have order backlogs that buffer the immediate effect of weakening market conditions as equipment construction continues. Our analysis of equipment manufacturing includes assessing a company's manufacturing efficiency, operating margin, and reputation for quality. Given increasing regulatory requirements and scrutiny of operations across the energy industry, an inability to manufacture high-quality services and equipment will generally put a manufacturer at a great disadvantage. An oilfield services and equipment company that warrants a strong or strong/adequate assessment of operating efficiency typically has a combination of: A flexible cost structure and ability to quickly reduce operating costs, especially labor, in weakening markets; An ability to limit working capital needs when growth is low; and A long track record of timely and on-budget equipment construction for proprietary needs and third-party customers. An oilfield services and equipment company that warrants an adequate/weak or weak assessment of operating efficiency typically has a combination of: Limited flexibility in cost structure and inability to quickly adjust to market conditions; High working capital requirements even during low-growth periods; and Weak track record of on time and budget equipment deliveries. Supplemental ratios In addition to our analysis of a company's core ratios, we consider supplemental ratios to develop a fuller understanding of its credit risk profile and refine our cash flow analysis in accordance with the global corporate criteria. FOCF to debt. For oilfield services and equipment companies, we generally use FOCF to debt as the preferred supplemental ratio. Working capital and capital spending cycles can significantly shape oilfield services and equipment companies' cash flow generation patterns. During a business upturn, funding needs for working capital and capital spending can often limit the benefit to cash flows (negative FOCF in many cases) as companies meet elevated demand for equipment and services. However, in the early stages of a downturn, capital released from the liquidation of inventories and trade receivables, as well as lower capital spending, can benefit free cash flow. Operating cash flow to debt. Where an oilfield services and equipment company has a CPGP of capital/asset focus or generally stable capital spending needs, we may choose to use operating cash flow to debt given the company's generally higher R&D; spending and lower cyclicality of capital spending requirements. DCF to debt. We may

alternatively use discretionary cash flow to debt for companies that pay dividends to shareholders, where we assess such dividends as a material portion of cash flows. We would generally not consider extraordinary dividends or share repurchases in this ratio. Such shareholder returns are generally nonrecurring, and if they exceed cash flow are often captured as diminished liquidity and/or increased debt levels. The Railroad and Package Express Industry Country risk Our primary measure to determine exposure to country risk is revenues. This is because we believe revenues provide a more consistent measure of participation in a market than earnings or cash flow, which will vary depending on number of factors. The distribution of assets is not a useful indicator because transportation assets may not remain consistently within one country or region. Also, data on the distribution of assets are less consistently available than are revenue data. Competitive position group profile The competitive position group profile assigned to most railroads is capital or asset focus, as they require sizable capital investments and asset outlays to sustain market position. In rare cases, we could assign a services and products focus or national industry and utilities CPGP to a railroad, particularly in cases where the railroad has a virtual monopoly. We apply the services or products focus CPGP to package express companies and to most logistics companies. We may apply capital or asset focus CPGP to logistics companies that are particularly capital intensive. Competitive advantage In order to evaluate competitive advantage in this industry, we focus on: Overall route network for railroads and package express companies (coverage area, position of hubs, and major infrastructure investments); Strength of position within markets served (market share in key markets/regions that generate large and growing potential revenues, range of service offerings, length of key customer relationships, barriers to entry in key markets); Service standards (speed, timeliness of delivery, low rate of damage or loss, ability to track shipments easily) and reputation; Size of revenue base and unit sales, an advantage given the economies of scale for these companies; and Effectiveness of the marketing strategy and sales force, particularly for package express companies but increasingly also for logistics companies and railroads. In order to evaluate competitive advantage for railroads, our assessment also considers: Direct access to factories, utilities, mines, and ports that generate substantial freight traffic and for which rail transportation offers a good transportation option; and Safety standards and reputation, particularly in the transportation of hazardous materials--such as chemicals. In order to evaluate competitive advantage for package express companies, our assessment also considers: New products and complementary offerings, which technological capabilities often trigger and companies can use to deepen customer relationships by meeting specific customer needs. This can lower costs, improve service, and increase efficiency--thus raising barriers to switching to a competitor. In order to evaluate competitive advantage for logistics companies, our assessment also considers: Degree of involvement in a major customer's supply chain management, including contractual provisions, that can impose material switching costs on customers; Degree to which services provided are more value-added rather than commodity; and Pricing and contract terms, which can determine profit potential and exposure to downside risks. A railroad, package express, or logistics company with a strong or strong/adequate competitive advantage assessment is characterized by several or all of the following: A leading or very substantial market share in the markets where the company competes; Control of scarce infrastructure or long-term contracts that can establish barriers to entry and thereby generate superior pricing or stable revenues; Strong technological capabilities that allow a company to build and maintain complex transportation networks and information systems; Varied service offerings that, from a consumer perspective, enable differentiation from peers; Better-than-average service (as measured by on-time performance, computerized billing, and tracking services, etc.); and Strong name/brand recognition, particularly for package express companies. A railroad, package express, or logistics company with a weak or adequate/weak assessment of its competitive advantage typically is characterized by several or all of: Has a relatively modest market share; Lacks infrastructure, long-term contracts, or clearly differentiated service, leaving the company to compete mostly on price; Lacks leverage with key product manufacturers, vendors, and suppliers; Lacks well-developed information technology resources; Typically is a price follower; Provides a very limited service offering; Lacks customer and geographic diversity; May face operational or service challenges; and Lacks a differentiated brand. Scale, scope, and diversity In order to evaluate scale, scope, and diversity for railroads, our assessment includes: Scale, which we measure by freight revenues, volumes, track miles, diversity of

customers and end markets served, and types of services provided; and Coverage by the track network, which is a factor for both competitive advantage and scale, scope and diversity. In order to evaluate scale, scope, and diversity for package express companies, our assessment includes: The route network and position of hubs (to create an integrated network that can handle various products, has access to major markets, and provides national and global coverage); Diversity of regions served, which we measure by revenues and operating profits; and Diversity of customers and industries served. In order to evaluate scale, scope, and diversity for logistics companies, our assessment includes: Scale, which we measure by revenues, diversity and size of customers and end markets, and number and specialization of services provided; and Geographic footprint--location, plus the diversity and characteristics of markets. A strong or strong/adequate assessment of scale, scope and diversity typically is characterized by a combination of: Participation in a variety of markets with favorable supply/demand fundamentals and that are not closely correlated; Scale of equipment fleet, IT resources, and service offerings that support above-average revenue generation and profit due to better utilization, economies of scale, or a wide range of services that are attractive to customers; Diversification of service offerings; and Good customer diversity. A weak or adequate/weak assessment of scale, scope and diversity typically is characterized by a combination of: Small market share that leaves the company vulnerable to larger competitors and may force it to compete mainly on price; Participation in only a few markets, especially if those markets have unfavorable growth prospects or are intensely competitive; and Concentration in terms of customers, service offerings, and end markets served. Operating efficiency To assess railroads' operating efficiency we may use: Operating ratio (operating expenses, including depreciation, as a percent of operating revenues; lower is better); Revenue per unit (carload or, for intermodal traffic, per container); and Measures related to service quality, such as on-time delivery. To assess package express companies' operating efficiency we may use: Revenue per unit of delivery (e.g. package); Operating margins, in particular EBIT margins; and Measures related to service quality, such as on-time delivery statistics. When assessing these operating statistics, we take into consideration geographic concentrations, as market characteristics can vary greatly among countries and regions. To assess logistics companies' operating efficiency we may use: EBIT margins; Working capital management (e.g. days' receivables); and Percentage of idle real estate properties, such as warehouses (to the extent such information is available). We compare these items against what we deem to be the closest peers, although logistics companies vary in the types of services they provide, and this can cause differences beyond what is truly a difference in operating efficiency. We characterize strong or strong/adequate operating efficiency by several or all of the following: Sustainable material operating cost advantage created by economies of scale, lower labor costs, more fuel efficient equipment, or process efficiencies (see below for the operating statistics we use to measure these characteristics among the segments); Sustainable superior revenue generation reflecting efficient management of route networks, equipment, and employees--so long as that business model does not result in noncompetitive operating costs (measured by operating statistics that vary among segments); Revenue equipment or IT resources whose age or suitability is superior to those of competitors; Relatively stable and positive labor relations and good access to labor and terms of whatever labor contracts may be in place; Regulations that do not impose a competitive disadvantage; Good working capital management, particularly for logistics companies; and Effective management of capacity additions. weak or adequate/weak operating efficiency is characterized by several or all of: Operating costs that are higher than those of competitors and which are not offset by sustainable superior revenue generation, resulting in below-average operating profitability; Below-average revenue generation due to the way a company manages its assets and employees, and that is not offset by consistently lower costs, resulting in below-average operating profitability; Poor working capital management; and Poor management of capacity additions. Profitability For railroad and package express companies, we focus on EBIT margins. Because of the pronounced differences in capital intensity between segments (e.g. railroads are much more capital intensive than many logistics companies), we believe that EBITDA margins, which add back depreciation, do not give a representative comparison. We assess the level of profitability as: EBIT margin above 24% is above average, EBIT margin between 6% and 24% is average, and EBIT margin under 6% is below average. Volatility Table We apply our medial volatility table to companies with a

majority of revenues generated from the movement of freight on a railroad with a CICRA of '2', business risk profile assessments of fair or better, and for which we use a CPGP other than national industries and utilities when we are analyzing their competitive positions. We apply the standard volatility table in the corporate criteria to freight railroads with a business risk profile assessment of weak or worse. We also apply the standard volatility table for package express and logistics companies. Supplemental Ratios 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 fine tune our cash flow analysis. In our view, a railroad or package express company's inability to meet cash interest payments or a debt maturity would be the most likely cause of a cash default during an industry downturn. Therefore, we consider as supplemental ratios: Coverage ratios (FFO + cash interest)/cash interest and EBITDA/interest; and FOCF to debt (this captures the capital intensity of railroads in particular). The Retail and Restaurants Industry Competitive position group profile The CPGP assigned to retailers is services and product focus as retailing is consumer facing and operates based on reputations for its products and services. While the industry is also somewhat capital intensive, most retailers lease their stores and therefore do not need to commit substantial amount of capital. Competitive advantage Our assessment of a retailer's competitive advantage is based on the following subfactors: Merchandising strategy. Whether the strategy is focused on a niche or on a category, successful merchandising is clear, focused, and consistent enough to maintain customer loyalty. Differentiation of concept/product/shopping experience, and positioning versus competitors can effectively target a specific customer segment. Brand reputation and marketing. Strong private or exclusive brands can command price premiums and allow for above-average margins while building customer loyalty. Product/service-level quality. Retailers that offer the right balance of quality and price provide a compelling value proposition. Whether the strategy is broad or narrow, a retailer's merchandising strategy and brand management are critical aspects of the business risk analysis as these can set the foundation for overall competitive position. A retailer with a strong or strong/adequate competitive advantage assessment has a combination of: Consistently successful merchandising strategy; Compelling value proposition of its products or services; Highly differentiated concept or products; Successful product/brand positioning; A strong consumer franchise; Successful online strategy and a platform to support future channels; Strong store development with attractive store locations; For auto retailers, operation of a variety of desirable franchises with diverse brand exposure; and Increasing the penetration of the private-label programs. A retailer with a weak or adequate/weak assessment of its competitive advantage typically has a combination of: Little concept/product differentiation; Weak brand positioning relative to peers; Low value proposition of its products/services with merchandise and assortments that differ from customers' expectations or image of the store; Weak track record of store development, outdated and/or poorly maintained stores or exits from certain markets due to failed expansions; Lack of significant online presence to supplement its retail operations; and For auto retailers, concentration of franchises and brand exposure. A strong consumer franchise is the result of long-term merchandising success and brand management that create high consumer acceptance and loyalty. From a credit analysis perspective, a strong consumer franchise supports consistent healthy sales and profit growth. The merchandising strategy needs to be clear, focused, and consistent because deviations can lose customer loyalty and market share to competitors. Successful retailers provide a compelling value proposition. Retailers that offer the right balance of product quality and price provide a convincing reason to shop at their stores. Selecting appealing products and effectively displaying and marketing them will attract high customer traffic while introducing new items and moving into new categories and price points can invigorate sales and image. Retailers differentiate themselves by offering unique product design, quality products, good service, compelling assortment, and appealing presentation. Differentiation is often the key to success in a crowded market. Given the intense competition from big-box players in almost every product category, a small regional or niche retailer that is unable to compete based on price will need a high degree of differentiation to receive an assessment of strong or strong/adequate. To prevent discounters from gaining market share or to improve price-perception among customers, retailers have been expanding their private-label and exclusive offerings. These products, when successful, typically boost volume growth as customers can afford to purchase more. In addition, private-label goods carry higher margins than branded products

as they are tailor-made for the retailer, produced in lower stock-keeping units (SKUs), and carry lower marketing costs. Specialty retailers have also developed private brands targeting a niche market that competes against national brands. Some specialty retailers have also achieved a highly differentiated product mix and store experience targeting specific customer segments. We view these developments favorably, as they represent a competitive advantage that allows for above-average gross margins while building customer loyalty. Retail companies must regularly reinvest in their properties, or build new properties to increase sales and maintain the relevance of the store concept. Investment beyond normal maintenance spending is often required to invigorate a property, especially in more competitive markets. Store remodeling programs are critical to attract customers and maintain competitiveness. Online sales remain a small percentage of overall retail sales, but are growing at a much faster pace. In response, retailers have increased their investments in the online channel. In our business risk assessment, we view investment in the online channel favorably, especially for more mature sectors, such as department stores. We do not necessarily view a lack of online investment unfavorably as long as overall operating prospects remain healthy. Scale, scope, and diversity Retailing is generally fragmented, but in certain subsectors, such as supermarkets and drugstores, large retailers can command a very significant share of the overall market. Other sectors, such as specialty apparel or hard goods are highly fragmented and even the largest players only account for a very small portion of the overall market. Size alone does not ensure profitability and growth; however, large scale allows companies to spread out costs and enjoy more economies of scale than their competitors. Size can provide economies of scale in distribution, advertising, overhead, and information systems. Important market share leadership also creates clout with suppliers to obtain purchasing discounts. Our scale, scope, and diversity assessment incorporates: Diversity of product or service range. Geographic footprint of store base and prospects of core markets. Volumes, size, market share, or niche position in chosen segment. Relative attractiveness of the markets (i.e., size, demographics, expected growth, and intensity of competition). A strong or strong/adequate assessment of scale, scope, and diversity typically combines: Sizable market share leadership in the retailer's core markets or industry subsector. Large scale that commands strong bargaining power with suppliers. Ability to leverage marketing and other operating costs. A successful niche position within a subsector; a category leader. Geographic diversity with presence in international markets if the domestic market is small, or exposure to different regions with different consumption trends, helping to mitigate volatility. For large auto retailers, growth through successful acquisitions, with the scope and scale for technology that enables more efficient operations. In the restaurant industry, company-operated and franchised restaurants generally contribute a significant percentage of revenue to advertising funds. As a result, large brands tend to have large advertising budgets and can market their products and promotions more aggressively than smaller brands. A weak or weak/adequate assessment of scale, scope, and diversity typically is characterized by: Weak market position in a crowded sector. Lack of scale and low bargaining power with suppliers. Presence of significantly stronger players in core markets. Market share loss to stronger players in its core markets. Lack of geographic diversity, little or no presence in international markets, or little or no diversity in different regions with different consumption trends to mitigate volatility. For auto retailers, lack of growth through acquisitions and lack of scale and scope for technology to enable more efficient operations. For restaurants, smaller or regional brands lack scale and scope that could result in small advertising budgets that hinders the ability to promote products. Geographic diversity that lacks good profitability is not meaningful, and well diversified retailers can struggle because of poor store or merchandising execution. Likewise, significant concentration in one state or region can be viewed as unfavorable; however, numerous regional retailers have achieved strong regional market share despite limited geographic diversity. Generally, brand diversity does not play an important role in our ratings process. A retail company may operate or manage multiple concepts, and these may be in different subsectors or have quite divergent product offerings and price points. But in fact, development and management of smaller brands can occupy management's time and resources so that the primary brand operations may suffer. Still, we would view a singular concept that is weakly positioned as unfavorable. In terms of concept diversification, we believe the retailer should have brands that have dominant positions in the niche segments they serve and account for a significant portion of operating income. Ideally, the multiple concepts target distinct customer or product segments and the growth of

one does not cannibalize on the sales of another. Operating efficiency Retail comprises diverse sectors, and operating metrics for each sector can vary widely. Therefore, comparison should be made with peers in the same subsector with similar product mix, cost structure, and geographical operations. To assess operating efficiency we typically track: Same-store sales or like-for-like sales; Gross margin; SG&A; to sales; Sales per square foot; EBITDA margin; Inventory turnover; Accounts payable days; Cash conversion cycles; and For auto retailers, we look at the ratio of SG&A; to gross profits. Strong or strong/adequate operating efficiency is characterized by: A consistent positive trend of same-store sales growth that leverages a growing fixed cost base. Higher-than-average unit-level productivity compared to peers, such as sales per square foot for retailers and average unit volume (AUV) for restaurants. A consistent trend of gross margin indicates strong working capital management. This is particularly important for seasonal retailers. A competitive cost structure (SG&A; as a percent of sales) and ability to adjust cost structure in periods of falling sales. Above-average profit margin (EBITDA margin) from consistent sales growth to leverage a highly fixed expense base. Efficient working capital management leading to higher inventory turns and limited markdown risk. For auto retailers, a high degree of automation integrating operations and sales, providing current market data to the sales floor for better pricing, and gathering customer information to drive sales for the parts and service segment of the business. Also for auto retailers, excellent relationships with profitable automakers, knowing that these automakers typically provide floor plan financing for the vehicle inventory and have veto power over the awarding of franchises to operators. For restaurants, a higher mix of franchised units results in less exposure to commodity cost fluctuations and packaging and labor costs, and thus offers a more predictable cost structure. Weak or adequate/weak operating efficiency combines: Same-store sales trends that lag peers or are declining consistently, indicating market share loss. Profitability consistently below peers due to subpar sales trends or less competitive cost structure. Less competitive ratio of SG&A; to sales because of higher rent or labor expenses. High volatility of gross margin, indicating poor inventory management. Lower-than-average sales/sq. ft. indicating underutilized assets. Lack of a comprehensive online strategy or little presence in this growth channel. Weak working capital management resulting in greater inventory investment, lower inventory turns, and a higher-than-expected level of markdowns. For auto retailers, volatile same-store sale growth trend, less variable cost structure, and inconsistent inventory control due to less sophisticated systems automation. For restaurants, inconsistent sales and greater exposure to cost fluctuations due to the larger portion of company operated units versus franchised units. Store productivity is an important measure of a retailer's overall operating efficiency. In our analysis of store productivity, we generally look at the following key metrics: Same-store sales (also referred to as comparable-store sales or like-for-like sales). We view a consistent trend of same-store sales growth favorably in our assessment and believe it indicates the company is using its assets efficiently to leverage its largely fixed cost base, which primarily consists of rent expense and labor cost. Furthermore, same-store sales trends that rank ahead of peers may indicate the retailer is gaining share. Conversely, same-store sales trends that lag peers or are declining consistently may indicate market share loss versus its peers or to other retail formats. Sales per square foot or sales density. Retailers can demonstrate above-average store productivity by selling more per square foot than peers, which we view favorably in our assessment. Lower sales per square foot than peers may indicate underutilized assets and subpar operating performance. However, retailing is a very diverse sector and this measure can vary widely depending on the product mix or store format. Therefore, the comparison should be made with peers in the same subsector with a similar product mix, cost structure, and geographical operation. Gross margin trends can provide insights into how well a retailer is managing its inventory purchases, cost increases, and pricing strategies. Inventory planning is critical in retailing as too much excess inventory usually leads to steep markdowns, hurting overall profitability. In periods of high inflation, retailers able to pass on cost increases can maintain gross margins. We view favorably a retailer that outperforms its peers in maintaining or growing its gross margin. We view unfavorably a retailer that underperforms its peers with a steady decline in gross margin or highly volatile gross margin trends. These trends heavily depend on global commodity prices (both food and nonfood) and labor cost inflation levels, due to the heavy dependence on Asian manufacturing (Chinese manufacturing in particular). EBITDA margin. While sales metrics are useful, we also consider the operating margin as another measure of operating

efficiency. We look at a retailer's SG&A; expenses as a percentage of sales and compare it to its peers. SG&A; expenses are typically fixed costs that a retailer needs in order to grow profitability. Depending on the degree of operating leverage, a retailer may need to increase same-store sales at a different pace than its peers. Therefore, we view favorably the ability of a retailer to turn fixed costs into sales growth to drive margin expansion. Generally, mall-based operators have higher rent expenses than off-mall operators in lifestyle centers. Working capital management is important in our evaluation of operating efficiency because of the use of liquidity to fund inventory investments ahead of sales, particularly in the important holiday season. In general, a retailer with strong working capital management skills exhibits lower levels of working capital investment compared to its peers, and often has fewer markdowns. Growing companies need to invest in inventory to support store growth, resulting in a use of cash, while mature companies can reduce inventory investments, resulting in a source of cash. Given that inventory typically represents the bulk of a retailer's current assets, achieving higher inventory turnovers generally results in lower levels of inventory investment and reduces financing costs. On the other hand, poor working capital management can stress a retailer's liquidity if the company's inventory position is too high while vendors demand shorter payable terms. Characteristics of successful working capital management include: Higher level of inventory turnover than peers. This reflects the retailer's ability to stock sufficient types and quantities of inventory in order to meet customer demand on a timely basis without tying up excess capital; Account payable levels that minimize net inventory investment, such as extending the number of account payable days; and Lower cash conversion cycles. These demonstrate a company's stronger position in the supply chain (for example, requiring suppliers or dealers to hold more of its inventory). Relative to peers, this allows a company to direct more capital to other areas of investment. Many retailers, and particularly speculative-grade issuers, rely on revolving credit facilities to fund seasonal inventory purchases during the months leading to the critical selling period. High seasonality leaves little room for error in the important selling quarters. An unfavorable assessment of seasonality risk could manifest from the inability to lower the impact of seasonal risk factors on business performance (say, a DIY retailer that is unable to arrest sales decline due to a poor summer). Underperforming peers in achieving sales targets and managing inventory investments during seasonal peaks could lead to heavy markdowns, hurting profitability. Supplemental ratios We generally include EBITDA to interest coverage, FOCF to debt, and DCF to debt in our analysis. Retailers often carry a high adjusted debt burden and their ability to meet cash interest and lease payments is critical. For retailers with core cash flow and leverage ratios indicative of a financial profile of intermediate or better, the ability to generate free cash flow after investing in their business enables them to lower leverage or fund shareholder returns, such as share repurchases or dividend payments. Therefore, we generally use DCF to debt or FOCF to debt as the supplemental ratios. However, for retailers whose FOCF generation is constrained by significant capital expenditures, we will use CFO to debt as the preferred supplemental ratio. For retailers whose core cash flow and leverage ratios are indicative of a financial profile that is significant or weaker, we generally use EBITDA to interest coverage as the supplemental ratio as we focus more on their ability to service their interest and lease burden. In some cases where we believe lease-adjusted EBITDA interest coverage or other cash flow coverage ratios (because of our lease adjustment) overstate the company's ability to cover fixed costs, including rent, we may use an unadjusted EBITDAR to cash interest plus rent ratio instead. We believe this ratio more accurately reflects the lease-related obligation by capturing actual rent versus minimum contractual rent. This ratio also helps distinguish companies with higher property ownership versus companies that lease most of their properties. Table 17 EBITDAR Coverage Ratio Scale Minimal >8.0x Modest >5.0x-8.0x Intermediate >3.0x-5.0x Significant >2.5x-3.0x Aggressive =>2.2x-2.5x Highly leveraged <2.2x The Specialty Chemicals Industry Competitive advantage In assessing a specialty chemical company's competitive advantage, we consider: Its market position, the robustness and sustainability of its business strategy, and its track record of execution; Its product or service profile, including differentiation attributes, technical expertise, and service capabilities; and Its ability to maintain sufficient R&D; and capital investment. Leading specialty chemical producers are generally able to adjust their strategies to evolving market conditions in order to build a pricing advantage and sustain revenue and profitability growth even amid somewhat adverse conditions. Generally, revenue or margins trends that are at odds with prevalent industry

conditions or that of other competitors can be indicative of an improving or deteriorating competitive advantage. Specialty chemical companies that differentiate their products from those of competitors often have innovative product development, value-added formulations, high-performance attributes, and a high level of technical service. These qualities can create brand recognition and greater customer loyalty, as well as better enable the producers to enact regular price increases and maintain higher and more stable margins. Successful R&D; and capital projects in the specialty chemical industry tend to rely on market knowledge and technical strength in product innovation. A specialty chemical company with a strong or strong/adequate competitive advantage typically has a combination of: Leading or near-leading market position and successful strategic positioning 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; Strong leverage with customers and recurring customers, achieved through a high degree of product differentiation, highly valued science or technical expertise, or product specification; and Robust R&D; and technical capabilities, leading to proficiency at developing and bringing to market new product formulations and applications to reflect market demand. A specialty chemical company with a weak or adequate/weak competitive advantage typically has a combination of: Meaningfully weaker or eroding market position and strategic positioning than leading competitors in the 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; Inability to maintain leverage with customers or recurring customers because of lack of differentiated product or limited technical expertise; and Lack of or limited R&D; capabilities and constrained technical abilities, leading to inability to develop new product formulations or applications. Scale, scope, and diversity In assessing the scale, scope, and diversity of a specialty chemical company, we consider: The depth and breadth of its products and the diversity of its raw material inputs and end markets; The relative size of its revenue base and that of its target markets; The geographic diversity of its sales, profits, and manufacturing footprint; and Its level of supplier and customer concentration. We expect specialty chemical companies with greater scale, scope, and diversification in these areas to exhibit more stable earnings and cash flow, based on less exposure to event risk and/or fluctuations in the market. Many rated issuers in specialty chemicals are relatively small niche players with limited product and geographic diversity and high dependence on relatively few customers or end markets. As a result, they tend to be highly sensitive to small changes in demand, market share loss, or other adverse market conditions. A specialty chemical company that has strong or strong/adequate scale, scope, and diversity typically has a combination of: Large revenue base and/or target markets relative to other participants in the industry; Well-diversified portfolios, in which all products are not subject to the same external factors, such as raw material prices, regulations, or cyclicality; Products aimed at a wide array of not closely correlated end markets with an adequate balance of cyclical and noncyclical demand and favorable supply-demand fundamentals; Geographically diversified revenue base and production footprint in both developed and developing markets; and Well-diversified raw material supplier base and no significant dependency on any single raw material, and well-diversified customer base. A specialty chemical company with weak or adequate/weak scale, scope, and diversity typically has a combination of: Revenue base and/or target markets of limited size relative to other participants in the industry; Narrowly focused product portfolio, reflecting participation in a very small number of end markets, regions, or product categories that have limited growth prospects, or that are closely correlated to one another; Reliance on a single raw material or single source thereof; Concentration of production at a single facility or a very small number of facilities; and Elevated customer or supplier concentration (for instance, 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 In assessing operating efficiency for a specialty chemical company, we consider: Its cost position versus industry peers, The flexibility of its cost structure in absorbing volatility of demand or input costs, Its success in passing through raw material costs, and Its flexibility of production. In evaluating a specialty chemical company's cost position compared with its peers, we primarily consider its EBITDA margin profile, supplemented by various indicators of cost efficiency and capital intensity, such as gross margin, the ratio of SG&A; (selling, general, and administrative expenditures) to sales, margin over raw

material costs, time lag in passing through raw material costs, percentage of contracts with raw material pass-through provisions, and the ratio of capital spending to sales. In many cases, raw materials and energy account for greater than 50% of the cost of goods sold. Specialty chemical companies that have positioned themselves to pass through increases in these costs typically demonstrate more stable margins and better operating efficiency. In reviewing a specialty chemical company's flexibility of production, we consider the company's ability to reduce its raw material input requirement, shift raw material inputs, or optimize production across facilities. Companies that are able to reduce or use different inputs--whether entirely different inputs or different grades of the same material--can often enhance profitability and improve their competitive positions relative to peers. A specialty chemical company with a strong or strong/adequate operating efficiency assessment typically has 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); A track record of ongoing cost structure improvements, such as ongoing measurable lean manufacturing practices, variable cost optimization, labor cost reductions, low cost sourcing, working capital management, or capacity rationalization; Strong ability to pass through raw material costs and a high percentage of contracts with raw material pass-through provisions; and Flexibility to optimize global production by altering the balance of raw material inputs or shifting production to more favorable facilities. A specialty chemical company with a weak or adequate/weak assessment of its operating efficiency typically has a combination of: Profitability, as measured primarily by EBITDA margins, that is below its peer group (after taking into account differences in sales mix that also affect profit margins); Limited track record of cost-reduction initiatives reflected by higher-than-industry peers' labor and sourcing costs, excess capacity, poor working capital management, or lack of measurable lean manufacturing practices; Inability to pass through raw material costs effectively and/or limited or lack of protections from contracts; and Limited or lack of production flexibility. Supplemental ratios In addition to our analysis of a company's core ratios, we also consider supplemental ratios to develop a fuller understanding of its financial risk and refine our cash flow analysis in accordance with the global corporate criteria. We generally use for commodity chemical companies: FOCF to debt as the preferred supplemental ratio when the cash flow and leverage assessment indicated by the core ratios is intermediate or stronger. Working capital and capital expenditure cycles can significantly shape specialty chemical companies' cash flow generation patterns. Alternatively, in less common cases, we might use cash flow from operations to debt for highly working capital-intensive companies (i.e., a working capital-to-sales ratio greater than 25%) or DCF to debt for companies with unusually large dividend distributions (greater than 50% of FOCF). Debt service coverage ratio, EBITDA to interest, when the cash flow and leverage assessment indicated by the core ratios is significant or weaker. For such companies, the ability to service outstanding debt on a near-term basis is more important. In less common cases where non-cash interest represents a significant portion of interest expense, we might use the ratio of FFO plus cash interest paid to cash interest paid. The Technology Hardware And Semiconductor Industry Country risk Our primary measure for determining exposure to country risk is assets. This is because country risk and macroeconomic factors, such as the risk of political or labor unrest, could be important for companies that have a regionally concentrated supplier base or a narrow manufacturing or R&D; footprint. In addition, insufficient intellectual property rights protection or product liability lawsuits could turn out to be significant risk factors. Furthermore, demand in the technology hardware and semiconductors sector is often determined more by global product innovation and technology cycles than local macroeconomic factors and country risk considerations. In some cases, we assess country risk exposure through revenues if we believe there is a significant risk deriving from a company's narrow domestic or only regional client base on demand potential. Competitive position group profile We assign a CPGP of capital or asset focus to many technology hardware and semiconductor manufacturers because they require sizable capital investments and asset outlays to sustain their market positions and keep up with innovation, and they can have low brand or product differentiation. We may also assign a CPGP of service or product focus to technology hardware companies that have unique capabilities, differentiated products, or identifiable brands or strong competitive standings in consumer-oriented segments, and that have low capital requirements or outsourced manufacturing. Competitive advantage Our assessment of competitive advantage for a technology hardware or

semiconductor company may focus on intellectual property, technology positioning, operating performance, distribution capabilities, manufacturing or process technology advantages, customer relationships, brand recognition, and pricing and bargaining power. A company with a strong or strong/adequate competitive advantage assessment may have a combination of the following characteristics: Significant intellectual property (IP) that provides a product advantage; A strong position in growing and emerging technologies supported by effective R&D; spending; Consistent operating performance relative to peers due to product differentiation or the ability to command a price premium; Good position in a relatively concentrated or less competitive market; Product difficult to replace by customers because of high switching costs, resulting from dependencies built upon a company's technology framework or being designed into customers' products; Multiyear product cycles; Strong distribution capabilities; Sustainable manufacturing or process technology advantages; Long-term customer relationships, including R&D; co-operations; High brand recognition; High leverage with key product manufacturers and suppliers; and Pricing power. A company with a weak or adequate/weak competitive advantage assessment may have a combination of the following characteristics: Limited or no differentiating IP, or IP that competitors can innovate around; A weak position in growing and emerging technologies or a presence mainly in markets with limited growth prospects; Consistent below-market-average operating performance relative to peers; Weak position in a relatively fragmented or competitive market; Products easily switched by customers; Short product cycles with fast technology transitions; Average or trailing manufacturing process technologies and efficiencies; Limited leverage with key product manufacturers and suppliers; A lack of brand recognition; and A lack of pricing power. Scale, scope, and diversity Our scale, scope, and diversity assessment may include our view of size of revenue, EBITDA, free cash flow, and other operating metrics relative to the market; evolution of market shares; supplier and customer concentration; and diversity of end markets, products, and geographies. A strong or strong/adequate assessment of scale, scope, and diversity may be characterized by a combination of: Revenue, EBITDA, cash flow, or other key scale metrics that are a significant portion of the market; A diverse customer or large contract base with no customer or contract accounting for more than 10% of revenues and the top 10 customers or contracts contributing less than 50% of revenues; A diverse manufacturing footprint, with limited reliance on single suppliers; A wide variety of products and services; and A broad array of end markets, none of which exceeds more than one-third of total revenues. A weak or adequate/weak assessment of scale, scope, and diversity is characterized by a combination of: Significantly lower revenue, EBITDA, cash flow, or other key scale metrics relative to the market; A concentrated customer or contract base, with one or more customers or contracts accounting for more than 10% of revenues and the top 10 customers or contracts contributing more than 50% of revenues; A narrow product focus or a product offering in intensely competitive or closely correlated markets; A focus on a particular end market or geography; and A concentrated supplier base and limited distribution capabilities. Operating efficiency A semiconductor or technology hardware company with a high degree of operating efficiency may generate better profit margins during all market conditions. To assess operating efficiency, we primarily track gross margins, EBITDA margins, working capital management, and capital intensity. For semiconductor companies, provided that the information is available to us, we track and compare with peers the manufacturing operations' capacity utilization, the percentage of outsourced production capacity, and the variance of gross margins relative to capacity utilization during the industry cycle. For technology distributors, we also track and compare with peers fixed asset turnover (specifically inventory turns), cash-conversion cycles (specifically days sales outstanding), returns on invested capital, operating margin stability, and free cash flow cycles. For electronic manufacturing services companies, we also track and compare with peers the manufacturing service mix of low-margin, high-volume production versus higher-margin specialty manufacturing, asset turnover, and service concentration in more cyclical industry verticals, such as telecommunications. Strong or strong/adequate operating efficiency may be characterized by a combination of: Economies of scale and efficiencies that lead to above-average profit margins (measured by gross margin, EBITDA margins, and return on capital) compared with peers; Overhead costs at competitive levels measured by SG&A; as a percentage of revenues while maintaining effective staff functions; R&D; efficiency, as measured by the R&D-to-sales; ratio and sales growth, compared with peers with similar products and

market positions; Effective and flexible supply chains with a history of limited disruptions or bottlenecks during macroeconomic cycles or following disruptive events; Flexible cost structures that limit pressure on EBITDA and cash flow during industry downturns; Flexible manufacturing capabilities that allow better-than-industry-average capacity utilization during the industry cycle, as well as efficient and timely product transitions in existing plants; Multiple years of limited restructuring and other one-time costs; Effective working capital management that requires low use of cash; and Low capital intensity combined with highly variable costs. Weak or adequate/weak operating efficiency may be characterized by a combination of: Profitability consistently below or more volatile than peers; Positive operating margins only during the presence of favorable industry conditions; High levels of SG&A; or ineffective R&D; spending, requiring continuous restructuring; Inflexible cost structures due to rigid labor laws or high fixed costs; High capital intensity coupled with highly fixed costs and limited outsourcing of production; Inflexible or vulnerable supply chains, resulting in inventory build-ups, shortfalls, bottlenecks, or quality issues during the industry cycle; Excess, inflexible, or inefficient manufacturing capacity; and Inefficient working capital management that frequently creates volatility in cash flow. Profitability EBITDA margin and return on capital are the primary metrics that we use to evaluate profitability for companies in the technology hardware and semiconductors industry. See the "Level of Profitability" section for relevant profitability thresholds. In the case of conglomerates or large groups with operations in several subsectors in the technology hardware and semiconductors sector, we assess EBITDA margins for each subsector--whenever the subsectors' margins are disclosed or can be estimated. Thereafter, we assess the level of profitability on a weighted-average basis and verify the outcome with the level of profitability based on the group's return on capital. If a group does not disclose EBITDA margins for its segments or if a company has a special business model that does not fully fit into the subsectors as outlined in the "Level of Profitability" section, we primarily use return on capital to assess the level of profitability. Supplemental ratios In addition to our assessment of core ratios, we also consider supplemental ratios to better understand a company's credit risk profile and fine-tune our financial risk analysis. In our view, a semiconductor and technology hardware manufacturer's inability to meet cash interest payments or a debt maturity would be the most likely cause of a cash default during or immediately following an industry downturn. For companies with preliminary cash flow/leverage assessments of intermediate or better, we typically use FOCF to debt or absolute FOCF, which better captures working capital and capital expenditure requirements than the core ratios. For companies with preliminary cash flow/leverage assessments of significant or worse, we typically use EBITDA interest coverage, which sometimes better captures a company's ability to service its debt than the core ratios. However, in specific cases, we may choose other ratios based on the company-specific factors defined in the corporate methodology. For example, for companies with preliminary cash flow/leverage assessments of significant or worse, we may consider FOCF to debt, even if the company is not capital intensive. FOCF is a good measure of cash flow available for debt repayment, which is critical for companies with aggressive capital structures. If a company is not capital intensive, more cash flow will be available for debt repayment, which is positive for creditworthiness. Volatility We classify many companies in the semiconductors and technology hardware sector as having volatile or highly volatile cash flow because we expect that their cash flow/leverage assessments will worsen by one or two, or two or three categories, respectively, during periods of stress. As a result, we adjust the final cash flow/leverage assessment for these companies by one or two categories, respectively, to provide cushion to absorb an operating downturn within the rating. We typically assess semiconductor equipment companies as highly volatile. We typically assess the following subsectors as volatile: Electronic manufacturing services; Communications equipment; Consumer electronics; Technology distributors; Semiconductors; Computer hardware, storage and peripherals, and electronic components and equipment; and Office electronics. However, our assessments are based on our view of a particular company's cash flow volatility. For example, within the semiconductors subsector, we often assess memory chipmakers as highly volatile but analog chipmakers as stable. We also observed that some consumer electronics makers, office electronics producers, or distributors could be classified as stable. In addition, depending on the degree of revenues generated from software, maintenance, and managed or professional services, communications equipment makers could be assessed as stable. Our cash flow volatility adjustments

are as of a point in time and can change over time based on the current state of the business cycle and a company's credit metrics relative to key thresholds. The Technology Software And Services Industry Competitive position group profile The CPGP we assign to most technology software and services companies is services or product focus, since they generally have long product lifecycles that require moderate capital investments (including R&D; costs) and asset outlays to sustain market position and keep up with innovation. We may assign the capital or asset focus CPGP to companies with significant capital investments (including R&D; costs) and asset outlays to sustain market position such as certain IT outsourcing companies. Competitive advantage In assessing the competitive advantage of a technological services and software company, we consider its: IP; Level of competition in the industry; Reputation or brand recognition; Recurring revenues; High switching costs and customer retention; and Track record of operating performance. A technology services or software company with a strong or strong/adequate competitive advantage assessment may be characterized by a combination of: Significant IP and R&D; capabilities, generating meaningful software license revenues and cross-selling opportunities such that strong operating performance persists through economic and product cycles; Good position in a relatively concentrated or less competitive market; Recurring revenue base greater than 70% of total revenues, derived from maintenance agreements or software-as-a-service contracts, for example; Consistent operating performance that is better than peers resulting from product differentiation or the ability to command a price premium; Strong reputation or brand recognition, as measured by client contract tenure and performance, and the nature of the relationship; High switching costs as a result of solutions being embedded within a customer's operations with significant costs and risks to switch to a competitor, leading to high customer retention, typically above 90%; and Degree of long-term contractual client arrangements with renewal prospects on favorable terms, which support revenue growth prospects. A technology services or software company with a weak or adequate/weak assessment of its competitive advantage may be characterized by a combination of: Limited technological differentiation relative to peers; Weak position in a relatively fragmented or competitive market with multiple players with large scale and financial resources, as well as insurgent niche players that take market share quickly; Recurring revenue less than 50%; Poor track record of operating performance relative to peers; Limited brand recognition; Low switching costs, as evidenced by customers who frequently use competitors' products or have weak customer retention; and Limited long-term contractual customer relationships. Scale, scope, and diversity In assessing the scale, scope, and diversity of a technology software and services company, we may consider: Scale of revenue, EBITDA, free cash flow, and other operating metrics relative to the market; Evolution of market shares; Supplier and customer concentration; and Diversity of end markets, products, and geographies. A technology software and services company warranting a strong or strong/adequate assessment of scale, scope, and diversity may have a combination of: Revenue, EBITDA, cash flow, or other key scale metrics that are a significant portion of the market; Leading market share with a significant distance to the second and third player in fragmented markets or a leading market share, or close No. 2 position in less fragmented markets; Large addressable end markets, multiple served verticals, and geographically diverse customer base; A diverse customer base (no customer accounts for more than 10% of revenues and the top 10 customers contribute less than 50% of revenues); and A broad array of products and services, and end markets, none of which exceeds more than one-third of total revenues. A technology software and services company warranting a weak or adequate/weak assessment of scale, scope, and diversity may have a combination of: No leading market positions apart from niche markets or existence of many competitors with similar market shares; Small or moderately sized addressable markets, few served verticals, and limited geographic diversity; A concentrated customer base with one or more customers accounting for more than 10% of revenues or the top 10 customers representing more than half of revenues; Narrow solution focus in intensely competitive or cyclical markets; and Narrow end markets and geographic presence. Operating efficiency In assessing operating efficiency for a technology software and services company, we generally consider its: Economies of scale; Gross margin and EBITDA margin; SG&A; and R&D; as a percent of revenues; Return on capital; Flexibility of the cost structure; Frequency of restructuring; and Working capital and capital expenditure requirements. A technology software and services company warranting a strong or strong/adequate operating efficiency assessment may have a combination of: Strong order and backlog

growth relative to peers through the cycle; Economies of scale and efficiencies that lead to above-average profitability metrics (such as gross margin, EBITDA margin, and return on capital); Overhead costs at competitive levels, as measured by SG&A; as a percent of revenues, while maintaining effective staff functions; Competitive R&D; investment, as measured by the R&D-to-sales; ratio and the scale of the R&D; budget relative to peers with similar market positions and product sets, and resulting in well-positioned product portfolios; Flexible cost structures, limiting pressure on operating margins during industry downturns; Effective working capital management that requires low use of cash; and Low capital intensity with capital expenditures in the single digits as a percentage of revenue. A technology software and services company warranting a weak or adequate/weak operating efficiency may have a combination of: Limited growth or decline of orders and backlog through a cycle; Profitability consistently below or more volatile than peers; Positive operating margins only during the presence of favorable industry conditions; Overspending on SG&A; relative to peers, which requires continuous restructuring; Inflexible cost structures resulting from rigid labor laws, strong unions, problems with contracted service delivery, or high contract churn; Underspending on R&D;, which results in a less well-positioned product set; High capital intensity coupled with highly fixed costs and limited outsourcing of production; and Inefficient working capital management that frequently creates volatility in cash flow. Profitability We use EBITDA margin and return on capital as the primary indicators of a technology software and services company's level of profitability. See the "Level of Profitability" section for relevant profitability thresholds. Supplemental ratios In addition to core ratios, we also consider supplemental ratios to develop a fuller understanding of a company's credit risk profile and refine our financial risk analysis in accordance with the criteria. For companies with preliminary cash flow/leverage assessments of intermediate or better, we typically use CFO to debt, which better captures working capital requirements than the core ratios. For companies with preliminary cash flow/leverage assessments of significant or worse, we typically use EBITDA interest coverage, which sometimes better captures a company's ability to service its debt than the core ratios. However, in specific cases, we may choose other ratios based on the company-specific factors defined in the corporate methodology. For example, for all companies, regardless of their preliminary cash flow/leverage assessments, we may consider FOCF to debt, even if the company is not capital intensive. If a company is not capital intensive, more cash flow will be available for debt repayment, which is positive for the creditworthiness of technology companies, in our view. Volatility We typically assess cash flow volatility as stable for commercial IT services, transaction processors, and enterprise and consumer software companies because of the high degree of recurring revenues in these industries derived mostly by differentiated product features and the switching costs required to migrate to another provider. However, our assessments are based on our view of a particular company's cash flow volatility. For example, within the software subsector, we may classify a company that has a high proportion of perpetual license sales and low recurring revenue as volatile because perpetual license sales are usually one-time in nature and can be affected by changes in IT spending. Perpetual license sales also often have high margins with gross margins often above 90%, so declines can have a disproportionate impact on profit. In addition, our cash flow volatility adjustments are as of a point in time and can change based on the current state of the business cycle and a company's credit metrics relative to key thresholds. The Transportation Cyclical Industry Country Risk Our primary measures to determine exposure to country risk for transportation cyclical companies are revenues or transportation volumes (e.g. ton-miles). For those companies, we believe revenues or transportation volumes provide a more consistent measure of participation in a market than earnings or cash flow, which will vary depending on a company's profit margins. The distribution of assets is not useful because transportation assets are by nature movable and may not remain consistently within one country or region. Also, data on the distribution of assets are less consistently available than are revenue and volume data. Competitive position group profile The CPGP assigned to most cyclical transportation companies is capital or asset focus, as they require sizable capital investments and asset outlays to sustain market position. We may use other CPGPs, including for subsectors that have high barriers to entry, such as bus companies that operate under government-granted franchises that greatly limit competitive entry. We may assign the services and product focus CPGP where control of key infrastructure and/or a well-established brand and service reputation support material revenue

generating advantages. Competitive advantage Cyclical transportation companies with sizable market shares in segments and markets that have good revenue potential may garner some pricing advantage and maintain better sales performance amid adverse market environments. In order to evaluate competitive advantage, we focus on factors that vary somewhat from subsector to subsector. For airlines, our assessment includes: Overall route network characteristics (access to major markets; national and global coverage, including alliances; and position of hubs to serve connecting traffic flows and degree of competition from other airlines' hubs); Attractiveness of markets served (growth prospects; proportion of business traffic, which is usually more profitable; degree of competition within market; effect of regulation on revenue and profit potential); Strength of position within markets served (share of local traffic at major airports served; share of traffic on the airline's own largest routes; barriers to entry in core markets and airports served); and Service standards and reputation; particularly important for attracting business travelers and other passengers in first and business class cabins, especially on intercontinental flights; less important for leisure travelers. For shipping companies, our assessment includes: Participation in a shipping industry segment whose characteristics may be more or less favorable than those of other shipping segments. For example, we consider a dry bulk sector to be far more risky than the liquefied natural gas and liquefied petroleum gas tanker segments that operate under very long-term take-or-pay contracts with reputable counterparties. Size of fleet, measures by owned and chartered-in vessels, and by commercial pooling arrangements and the extent to which it provides scale and enhance vessel utilization. Customers are attracted to commercial pools for access to a wider range of vessels while still dealing with just one operator. Overall attractiveness of fleet, as measured by age and technical characteristics of vessels. A modern fleet can enhance market position because customers such as major oil companies and multinational conglomerates may be averse to environmental disaster headline risk. Breadth of the route network and the extent it can improve a shipping line's market position and make it more attractive to global customers. Our assessment takes into account the trade lanes in which the shipper operates. We generally view international operators with a global route network more favorably than regional players. Even so, international shipping is highly fragmented, with the largest operators having low-single-digit percentage share of the market. An exception is for shippers that operate domestically within the boundaries of just one country and may be protected by cabotage laws (that exclude outside competitors). For trucking companies, our assessment includes: Participation in particular trucking segments that may be more or less fragmented and competitive. For example, a specialist in delivering gasoline carries a commodity whose volumes transported are more stable than construction materials that a flat-bed trucking company carries. Attractiveness of services provided/product mix (growth prospects; mix of contractual versus spot revenues generated; degree of competition within market; effect of supply and demand on revenue and margin potential); Market position or geographic footprint within key markets (e.g., depth of service or level of penetration in a specific lane or corridor between cities; share of tonnage in key lanes); Fleet size, as customers increasingly choose to rationalize their truck transportation arrangements to focus on fewer key suppliers; Service standards and reputation; particularly important for contractual business, and for intermodal moves and transportation of hazardous materials such as chemicals and fuel; and New products and complementary offerings, which are often driven by technological capabilities and can be used to deepen customer relationships by meeting specific customer needs, resulting in lower costs, improved service, and increased efficiency, thus raising barriers to switching. A cyclical transportation company with a strong or strong/adequate competitive advantage assessment is characterized by several or all of the following: A leading or very substantial market share in the markets where the company competes; Participation in markets whose size, growth prospects, and competitive dynamics afford an opportunity to generate above-average revenues, or participation in markets where demand and pricing are significantly more stable than for most cyclical transportation companies; An ability to translate market leadership into a revenue premium and/or superior operating profitability to its competitors; Control of scarce infrastructure or long-term contracts that can establish barriers to entry and thereby generate superior pricing and/or stable revenues; and In some cases, participation in an industry subsegment whose industry characteristics are more favorable than those for most cyclical transportation companies, such as certain European bus markets, which are highly concentrated and tend to be fairly stable. A cyclical

transportation company with a weak or adequate/weak assessment of its competitive advantage typically is characterized by some or all of: A lagging or modest market share relative to peers; Participation in smaller, low-growth, or very competitive markets, leading to below-average revenue generation; Lack of control over scarce infrastructure, long-term contracts, or clearly differentiated service, leaving the company to compete mostly on price; and In some cases, participation in an industry segment whose industry characteristics are less favorable than those for most cyclical transportation companies, such as international bulk commodity (oil, coal, iron ore, etc.) shipping, which is highly fragmented and very price competitive. Scale, scope, and diversity Cyclical transportation companies tend to have high operating leverage because of their substantial investment in fixed assets. They also mostly operate transportation networks, where coverage of various regional markets is an advantage in attracting customers. At the same time, their volatility of revenues and profits can be mitigated somewhat through diversity of regions and customers served. Accordingly, scale, scope, and diversity are significant factors in judging their overall competitive position. We use factors and statistics that vary from subsector to subsector to judge scale, scope, and diversity of cyclical transportation companies. For airlines, our assessment includes: Scale, as measured by traffic (revenue passenger miles or kilometers) and number of flights and passengers. This is useful particularly for judging advantage at individual airports, where there are economies of scale and competitive advantage in offering the most flights. Geographic coverage of route network. A diversity of markets, both globally and within a country, provides greater revenue stability. Mix of business and leisure travelers. Although business travelers are on average more profitable, overreliance on either can expose an airline to greater potential revenue volatility. Diversification from non-passenger businesses, such as air cargo and sale of frequent flyer miles. Air cargo demand tends to be more volatile than passenger demand but has good long-term growth prospects, while sale of frequent flyer miles is a high margin and relatively low risk product. For heavy air freight airlines, which tend to be smaller and less diversified, we would focus on scale as measured by revenue ton miles (or kilometers), regional or global coverage, diversity of products transported, and diversity of customers. For shipping companies, our assessment includes: Scale of vessel fleet, which can improve end market and customer diversity. Operators with multiple classes of vessels (tankers, containerships, and bulk commodity ships) and of various sizes, or those that participate in commercial pools, can carry a broad range of commodities and meet widely different capacity needs of customers. A diverse customer base of reputable charterers limits counterparty risk and adds stability to revenues. Geographic coverage of route network. Having a route network with broad geographic coverage can serve as a natural hedge against weak demand and help an operator ride out cyclical downturns. For trucking companies, our assessment includes: Geographic coverage. A diversity of end markets, within a country, provides greater revenue stability. Sector/end-market exposure. Some sectors are more volatile than others (e.g. retail vs. fuel) and the demand characteristics can expose a trucking company to greater potential revenue volatility. Volume, as indicated by tonnage (per day) and number of shipments (per day); useful particularly for situations where there are economies of scale and competitive advantage in providing extensive service on high volume traffic lanes. Degree of customer concentration, as reliance on a key customer exposes companies to some risks; however, the key customer may be a long-term relationship with good long-term growth prospects. A strong or strong/adequate assessment of scale, scope, and diversity typically is characterized by a combination of: A sizable equipment fleet and broad service offerings, which can support above-average revenue generation and profit potential due to better utilization, economies of scale, or a wide range of services that is attractive to customers. Participation in a variety of markets with favorable supply/demand fundamentals, with demand in those markets not closely correlated. Diversity of customers, so that the loss of any single account does not have a material adverse effect on revenues and profits. A weak or adequate/weak assessment of scale, scope and diversity typically is characterized by a combination of: Modest scale that leaves the company vulnerable to larger competitors and may force it to compete mainly on price. Participation in only a few markets, particularly if those markets have unfavorable growth prospects or are intensely competitive. High customer concentration or heavy reliance on a single or few customers. Quality of customer relationships as indicated by contractual relationships that we believe limit switching to another provider. Operating efficiency A cyclical transportation company with a high degree of

operating efficiency should generate relatively better profit margins during all market conditions. We focus on cost structure, measures of asset utilization and efficiency (revenue or cost per unit of capacity), and operating profit margins. Because cost structure tends to be a more consistent differentiating factor than revenue generation, which varies with market conditions, we place greater emphasis on operating costs. To assess operating efficiency of airlines we generally use: Measures of revenue generated per unit of capacity, such as passenger revenue per available seat mile, passenger revenue per available seat kilometer, or revenue per available ton kilometer; airlines tend to report different measures in various countries and regions, or report on a per ton kilometer basis because they generate a significant proportion of their revenues from carrying freight. We may also look at the individual components that make up the statistics-yield (a measure of pricing) and load factor (a measure of utilization), which, when multiplied together, equal the overall revenue statistic. Measures of operating cost per unit of capacity, such as operating cost per available seat mile, operating cost per available seat kilometer, or operating cost per available ton kilometer. We may also look at components of operating cost on a per unit basis, particularly labor cost, which tends to be a major differentiator among airline cost structures. These operating statistics are most usefully compared among direct competitors, because market characteristics can vary significantly by country or region. Because both revenues and costs do not increase proportionately with the distance of a flight (for example, those associated with passenger booking and airport operation are the same regardless of flight length), we may adjust the per-unit-of-capacity operating statistics for average flight length or average trip length (trip length differs from flight length where the passenger connects from one flight to another to reach a final destination). A formula used by some airlines that we find useful when available is to choose a common assumed flight or trip length (e.g., 1,000 miles) and estimate what an airline's per-unit revenue or cost would be if its flights or trips averaged that common distance, as follows (using operating cost per available seat mile, CASM, and flight length as an example): Reported CASM x (reported flight length / common flight length) = common length CASM. The resulting operating statistic estimated on an assumed common flight or trip length is then compared with similarly adjusted statistics for competitor airlines. Flight length is the better measure of length but not always available; trip length is more widely available because it can be calculated by dividing revenue passenger miles (or kilometers) by the number of passengers carried. For airlines, we also consider the age and fuel efficiency of the aircraft fleet, with younger and more fuel-efficient planes preferred. Newer planes will also be compliant with the current environmental regulations, which have tended to become more stringent over time. However, these considerations of fleet quality are secondary to overall operating costs and revenues. Airlines that hedge part of their fuel consumption will tend to have, on average, higher operating costs than those that do not, but they also can guard against sharp increases in fuel prices that could cause losses. Accordingly, we will discount somewhat an airline's cost advantage if it is achieved by not hedging fuel costs. To assess operating efficiency of shipping companies we generally use: Proportion of vessel revenue days (ship operating days less days vessels are not available for employment due to repairs, dry-docking) committed to long-term charter agreements, versus the spot market. We view companies with a large proportion of long-term fixed rate contracts as less risky than spot market operators. Length of charter agreements gives one indication of the pricing and utilization risks as contracts come up for renewal. Vessel utilization in comparison with peers; this can be influenced by proportion of ships under long-term charters or in pooling arrangements. Physical condition of the fleet, as measured by age, hull structure (e.g., single versus double hull for tankers), and fuel efficiency. Younger ships have generally lower operating costs. The degree to which the shipping company bears the risk of bunker fuel (used to power ships) prices. Operators with vessels on time charter generally pass fuel costs to their customers while spot market operators bear the risk of fuel price volatility. Daily operating break-even costs compared with peers and industry averages. Operating costs typically include vessel costs (crew, technical and management fees) and voyage expenses (fuel costs, port and canal tolls). Operating flexibility, measured by proportion of tonnage chartered-in versus owned. Operators with chartered-in ships can return ships whose charters are expiring, particularly during cyclical downturns. For U.S. domestic shipping companies, some of which are unionized, we evaluate labor relations, labor costs, and assess whether the union(s) could disrupt operations as a result of a contract dispute. To assess operating efficiency of trucking companies we generally use: Measures of

operating efficiency, such as operating ratio (operating expenses, including depreciation, as a percent of operating revenues) and operating margin before and after depreciation. Measures of asset utilization, such as proportion of empty miles (those where no freight is being carried) and deadhead percentage (trips for truckload companies with no cargo needed to reposition the trucks for another assignment). Measures related to pricing, such as revenue per hundredweight (for less-than-truckload companies) or revenue per loaded mile (for truckload companies). A strong or strong/adequate operating efficiency assessment is characterized by several or all of the following: Sustainable operating cost advantage, caused by economies of scale, lower labor costs, more fuel-efficient equipment, and/or process efficiencies, and measured by operating statistics that vary between segments. Sustainable revenue advantage, caused by superior asset utilization or product differentiation (although in general we believe that cost advantages are likely to be in a company's control to a greater extent than revenue outperformance), as measured by operating statistics relevant for the subsector. Transportation equipment whose age, fuel efficiency, and suitability for services provided is superior to those of competitors. Relatively stable and positive labor relations, particularly for passenger transportation companies, where morale can affect service and reputation, and the effect of labor contract provisions on the company's ability to operate efficiently. Regulations, if any, that do not materially hurt operating efficiency, relative to competitors. Examples of regulations and other government policies that can be supportive of an airline industry include government investment in airports and air traffic control, competition policy that does not block mergers of airlines that otherwise might fail, and environmental regulations that do not place airlines at a disadvantage to competitors in other countries or regions. A weak or adequate/weak operating efficiency assessment is characterized by several or all of: Operating costs that are higher than those of competitors, and which are not offset by sustainable superior revenue generation, resulting in below-average operating profitability. Below-average revenue generation (see above comment) that is not offset by consistently lower costs, resulting in subpar operating profitability. Operating profitability that, while adequate on average, is very volatile, including potential risks from stronger competitors or other changes in their markets. An aircraft fleet whose aircraft are, on average, less fuel efficient than those of its competitors. Level of Profitability For cyclical transportation companies, we use return on capital as the primary measure of profitability, because the different levels of capital intensity across subsectors means that depreciation expense, and thus also EBITDA margin, cannot usefully be compared across the whole industry. We may compare EBITDA margins within a subsector (e.g., among airlines) to help us assess level of profitability in cases where we believe that return on capital is not representative (e.g., because substantial changes in a company's capital structure overstate or understate capital), or where our assessment on the basis of return on capital is a borderline case. In those cases, we use the guidelines in table 2. The ranges for return on capital and EBITDA margin are based on the performance of rated companies in this industry during 2008-2012. We may update the ranges based on changing industry conditions. Supplemental Ratios 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. We most often consider as supplemental ratios: Coverage ratios: (FFO + Interest)/Cash Interest, and EBITDA/Interest, particularly if the preliminary cash flow leverage assessment indicated by the core ratios is significant or weaker. FOCF to debt (this captures the capital intensity of cyclical transportation companies). Time horizon and ratio calculations Cyclical transportation is classified as prospectively volatile under our corporate methodology (paragraph 117 in "Corporate Methodology"), because it is a high risk (category 5) industry. Accordingly, the weights applied to our ratios will generally be 50% for the current year and 50% for the first subsequent forecast year. The Transportation Infrastructure Industry Country Risk We believe that transportation infrastructure companies are highly sensitive to country risk. This reflects the infrastructure's essential nature, the companies' typically significant exposure to their country of domicile, and the regulatory, legal, political, or contractual frameworks or concession agreements under which they typically operate. These factors also generally limit the extent to which we may rate transportation infrastructure companies above the sovereign rating on their main country of operation. When determining the country risk of a transportation infrastructure company with operations in more than one jurisdiction, we typically measure their exposure to each country based on forecast EBITDA or, if EBITDA per country

is not available, forecast revenues. Competitive position group profile The CPGP we assign to most transportation infrastructure companies that we rate is national industries and utilities. This reflects the effects of government policy and regulation in limiting competitive pressures and supporting stable profitability. We may assign the capital or asset focus CPGP to transportation infrastructure companies that face higher levels of competition, or that operate in emerging and transitional economies with higher currency risk and cyclicality. Competitive advantage When assessing the competitive advantage of a transportation infrastructure company, we focus on its asset profile, as well as on the regulatory, legal, political, or contractual frameworks or concession agreement under which it operates. Our assessment includes: The size and attractiveness of the areas and markets the company serves, including the location and wealth of the area, and its connectivity with the regional economy. Exposure to demand risk. We consider the company's operating history and track record in terms of traffic. Some transportation infrastructure companies have exposure to groups whose usage is more volatile. For instance, toll road usage by heavy goods vehicles tends to be more volatile than usage by cars; and the number of passengers transiting at an airport tends to fluctuate more than the number of origin-and-destination passengers. Some companies may also have part or all of their revenues contracted or guaranteed, which may moderate demand risk. Market share in key regions and the nature of competition from other transportation links and operators in terms of availability, time, and cost. Asset constraints, such as curfews or noise restrictions for airports; or channel depth for marine ports. An unfavorable framework or agreement is consistent, in our view, with one or more of the following characteristics: The company operates in an opaque regulatory, legal, political, or contractual framework or under a concession agreement that lacks transparency, predictability, and consistency. For regulated assets or concessions, the regulatory framework or concession agreement does not contain a clear pricing or tariff-setting mechanism. The regulatory, legal, political, or contractual frameworks or concession agreement restrict the company from recovering fully or on a timely basis its fixed and variable operating costs, investments, and capital costs (depreciation and a reasonable return on investment). The company has a track record of earning minimal or negative rates of return in cash through various economic and political cycles and a projected inability to improve that record sustainably. The company is obligated by a third party (government, regulator, or concession grantor) to make significant capex commitments, with no legal or contractual basis for the full recovery of capital costs. The company operates in an environment where there has been a recent history of adverse government or regulatory intervention in the transportation infrastructure industry or other regulated industries. The following features are typically consistent with a strong or strong/adequate competitive advantage assessment for transportation infrastructure companies: The company provides an essential service to the national or regional economy; The area the company serves is large and wealthy, and generally includes a capital city or strategic routes; The company is dominant within its market or markets, and competition from other transportation links and operators is limited and stable; and The company's regulatory, legal, political, or contractual frameworks or concession agreement is transparent, predictable, and consistent, and enables adequate and timely cost recovery, as well as an adequate return on investment. In addition, there is no history of adverse government or regulatory intervention. One or more of the following features is typically consistent with a weak or adequate/weak competitive advantage assessment for transportation infrastructure companies: A relatively small or weak economy in the area the transportation infrastructure company serves, constraining demand for the services it offers; Exposure to intense competition from other transportation links and operators, creating low or volatile demand or tariffs; and An unfavorable regulatory, legal, or political framework or concession agreement. The following features are typically consistent with an adequate competitive advantage assessment: The transportation infrastructure company has significant competition, but demand for its services remains stable and sufficient to cover its costs; The areas the transportation infrastructure company serves are of sufficient quality to support demand in the long term; and We consider the company's regulatory, legal, political, or contractual frameworks or concession agreement as favorable. Scale, scope, and diversity When assessing the scale, scope, and diversity of a transportation infrastructure company, we typically focus on its operations. This reflects the industry's requirements of a high initial investment and, once operational, the relatively low marginal costs of servicing additional demand until capacity is fully utilized. Our assessment of scale, scope, and

diversity includes: An analysis of the company's revenue streams and their key drivers, including any long-term contractual income (for example from property or leased assets) and the proportion of commercial and regulated revenues; and The company's geographic footprint, including the size, diversity, and maturity of the markets it serves, and the number and diversity of its customers or users. We see as positive a company's participation in a variety of markets with favorable supply and demand fundamentals that are not closely correlated. However, it is not a necessary condition for a strong or strong/adequate assessment of scale, scope, and diversity. This is because the stability of transportation infrastructure assets makes diversification less important. We can assess the scale, scope, and diversity of a transportation infrastructure company as strong, despite customer concentration, if we assess its competitive advantage as strong or strong/adequate. This is the case, for instance, for national hub airports that typically have a main carrier generating more than 50% of sales, and where we believe that in the event of default, the carrier would be replaced within a short time frame. However, for companies that do not have a strong or strong/adequate competitive advantage assessment, a strong or strong/adequate scale, scope, and diversity assessment is typically consistent with a customer base that mainly comprises origin-and-destination rather than transit passengers. A transportation infrastructure company with a strong or strong/adequate scale, scope, and diversity assessment typically has mature transportation assets that serve sizable and wealthy markets. A weak or adequate/weak scale, scope, and diversity assessment is typically consistent with one or both of the following: Small markets with limited wealth or poor growth prospects or intense competition. That is, unless the transportation infrastructure assets have a track record of stable demand that is sufficient to cover the company's costs; Significant customer concentration, where the company has a weak, adequate/weak, or adequate competitive advantage assessment. Operating efficiency Our assessment of operating efficiency includes: Scope to manage variable operating costs, for example through flexible outsourcing arrangements; Mechanisms in the regulatory, legal, political, or contractual framework or concession agreement that enable the company to increase tariffs or be compensated for cost increases; The scale of maintenance costs and investments, taking into account asset age and quality, capacity utilization, government policies in the industry, any contracts the company has entered into, and its business plan; Flexibility of spending, notably during periods of lower demand; and Working capital management and effectiveness of revenue collection. A strong or strong/adequate operating efficiency assessment is typically consistent with a combination of the following features: Scope to manage the cost base to maintain profitability throughout most of the industry cycle. This could reflect the company's ability to manage its operating cost base. It could also reflect the company's ability under the regulatory, legal, political, or contractual framework or concession agreement to adjust tariffs in a timely fashion when costs increase. Limited capex requirements, if there is sufficient growth capacity and assets are operational and in good condition. Or, if capex requirements are significant, a strong or strong/adequate operating efficiency assessment typically requires either the flexibility to time and sequence the spending in line with market conditions, or substantial coverage of capex by subsidies. A weak or adequate/weak operating efficiency assessment is typically consistent with one or more of the following features: An inability to manage the cost base and/or adjust tariffs in the medium term (more than two years). When we expect a company to restore its profitability in the medium term--for instance, thanks to tariff adjustments in compensation for cost increases--this is typically consistent with an adequate operating efficiency assessment. The need or plans for significant investment where there is no pre-agreed mechanism to recover the investment, or when the operator is not adequately remunerated--for instance, when remuneration is significantly back-ended. When there is a pre-agreed mechanism to recover those costs, and when the operator is adequately remunerated by increases in tariffs and/or subsidies, this is typically consistent with an adequate operating efficiency assessment. Poor working capital management, or exposure to late payments and customer defaults. Volatility of profitability We typically assess volatility of profitability based on EBITDA. We exclude from our calculation large profitability distortions arising, for instance, from significant changes in the company's regulatory or contractual framework. We typically use a proxy to carry out the volatility assessment, as we do for other corporate entities. Examples of such changes are: The resetting of regulated tariffs to reflect any changes in the company's cost base; Revised operating subsidies, in line with the company's cost base; A reclassification of operating

subsidies in the company's accounts, although without effect to cash flows; and A change in scope of consolidation or a restructuring. Cash Flow/Leverage Analysis We apply the low volatility table to transportation infrastructure companies with a business risk profile assessment that is satisfactory or better, except when the company exhibits, or we think it is likely to exhibit, standard levels of volatility; or when the company has any of the following characteristics: It operates in a country with a country risk assessment of '5' or '6'. It derives approximately one-third or more of its cash flows from activities outside transportation infrastructure. It operates under an unfavorable or unpredictable regulatory, legal, or political framework or concession agreement. Core And Supplemental Ratios If the core ratios result in different cash flow leverage assessments, we select the one we believe is the best indicator of a company's future leverage. For transportation infrastructure companies, this is typically the FFO-to-debt ratio because it incorporates debt service costs that are typically significant for transportation infrastructure companies. In our view, a transportation infrastructure company's inability to meet cash interest payments or a debt maturity is the most likely cause of a cash default. Therefore, the preferred supplemental ratio we use in assessing a transportation infrastructure company's financial risk is FFO cash interest coverage, which we define as FFO-plus-interest to cash interest. Capital Structure Thanks to their profitability and stability, transportation infrastructure companies can generally tolerate significantly higher financial leverage than would otherwise be the case. However, this is only true if the companies manage their debt maturity structure and debt interest rate risks conservatively. As a result, we consider debt maturity profile and debt interest rate risk to be the most meaningful subfactors for rating transportation infrastructure companies. We see well-staggered maturities of primarily fixed-rate or largely hedged debt as consistent with conservative financial management. Financial Policy A transportation infrastructure company that operates under a concession is obliged to repay its debt by the time the assets return to the concession holder. As a result, our assessment of financial policy includes the company's deleveraging strategy. If a company lacks a credible plan to deleverage well ahead of the end of the concession, we would likely assess leverage tolerance as negative. REVISIONS AND UPDATES We republished this article on Sept. 5, 2019, to add guidance specific to the commodity and specialty chemical sectors. We republished this article on Dec. 19, 2019, to: Add guidance specific to the contract drilling, metals production and processing, mining, oil and gas exploration and production, oilfield services and equipment, technology hardware and semiconductors, and technology software and services sectors. Change the names of metals and mining downstream to metals production and processing, and metals and mining upstream to mining. Revise the EBITDA margin thresholds of electronic manufacturing services companies. We have narrowed the universe of companies that we will consider within the electronic manufacturing sectors to include mostly outsourced manufacturing providers and have revised the threshold appropriately. Eliminate government outsourcing as a subsector of technology software since the subsector is not materially represented in our current rated universe. Revise the level we generally consider in differentiating the degree of revenue diversity (from 15% to 10% of revenue) from a single customer or contract for the technology hardware and semiconductors sector. Revise the cash flow volatility assigned to commercial IT services, a subsector of technology software and services, and communications equipment, a subsector of technology hardware and semiconductors, to reflect less volatility expected in these sectors. Revise the cash flow volatility assigned to computer hardware, storage and peripherals, electronic components and equipment, and office electronics, a subsector of technology hardware and semiconductors, to reflect more volatility expected in this sector. We republished this article on April 30, 2020, to: Add guidance specific to the following sectors: asset managers, branded nondurables, building materials, business and consumer services, capital goods, consumer durables, containers and packaging, engineering and construction, environmental services, financial market infrastructure, financial services finance companies, forest and paper products, media and entertainment, and retail and restaurants. Add SER Calibration By Industry Based On EBITDA for Financial Services Sectors (table 7) and SER Calibration By Industry Based On EBITDA Margin for Financial Services Sectors (table 8) with SER calibration ranges for asset managers and financial services finance companies. Eliminate trade show, directories, and internet search engines as subsector of media and entertainment since the subsectors are not materially represented in our current rated universe. We also combined several similar subsectors within media and entertainment to

simplify the sector specific guidance. We republished this article on Aug. 7, 2020, to perform a periodic refresh of the SER calibration by industry tables (tables 4-6) by rolling the seven-year period forward to include the financial year-end of Dec. 31, 2018 (2012-2018). We republished this article on Dec. 11, 2020, to: Add guidance specific to the following sectors: aerospace and defense, agribusiness and commodity foods, agricultural cooperatives, auto and commercial vehicle manufacturing, auto suppliers, health care equipment, health care services, railroad and package express, transportation cyclical and transportation infrastructure. Add FOCF/sales as an additional measure, which we may consider in our assessment of operating efficiency for auto and commercial vehicle manufacturers and auto suppliers. We republished this article on May 27, 2021, to add guidance on the application of the Comparable Ratings Analysis modifier. We republished this article on July 19, 2021, to refresh the SER calibration by industry tables (tables 4-8) by rolling the seven-year period forward to include the financial year-end of Dec. 31, 2019 (2013-2019). We republished this article on Sept. 30, 2022, to refresh the SER calibration by industry tables (tables 4-8) by rolling the seven-year period forward to include the financial year-end of Dec. 31, 2020 (2014-2020). RELATED PUBLICATIONS Related Criteria Corporate Methodology, Nov. 19, 2013 Related Research Criteria And Guidance: Understanding The Difference, Dec. 15, 2017