**EDUCATION, EMPLOYMENT HISTORY
AND PROFESSIONAL EXPERIENCE**

Mr. Stevens earned a Bachelor of Science degree in Business Administration with a concentration in economics and finance from Southwest Baptist University in 2002 and a Master of Business Administration degree from Southern Methodist University in 2006.

After two years of teaching business and economics courses at LCC International University in Lithuania and Southwest Baptist University in Missouri, Mr. Stevens began his career in the utility industry in 2008 on the General Staff of the Arkansas Public Service Commission as a rate analyst in the cost allocation and rate design section and later as a financial analyst in the financial analysis section. In 2010, Mr. Stevens joined CenterPoint Energy ("CNP") where he held various positions of increasing responsibility, including Sr. Financial Analyst, Lead Regulatory Analyst, Manager of Regulatory Affairs for CNP's Arkansas and Oklahoma gas utilities, Director of Regulatory Affairs for CNP's gas utilities in Texas, and Director of Rates supporting all of CNP's jurisdictional utilities.

Mr. Stevens joined Black Hills in April 2018 as Director of Regulatory with responsibility for Arkansas. In early 2019, his role expanded to Director of Regulatory and Finance for Arkansas and Kansas with responsibilities for all regulatory matters and oversight of financial planning and analysis for Black Hills' utilities in Arkansas and Kansas. In June 2021, Mr. Stevens was promoted to Vice President, Regulatory with oversight of the revenue requirement and regulatory reporting functions and responsibility for regulatory strategy and policy and financial planning and analysis across Arkansas, Iowa, Kansas, Nebraska, South Dakota, and Wyoming. In 2023, Mr. Stevens was promoted to his current position as Vice President, Treasurer.

MOODY'S
RATINGS

Infrastructure And Project Finance

RATING METHODOLOGY
6 August 2024

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Rating Methodology

Regulated Electric and Gas Utilities

This rating methodology replaces the *Regulated Electric and Gas Utilities* methodology published on June 23, 2017. We have reordered and made editorial updates to various sections of the methodology. These updates do not change our methodological approach.

Scope

This methodology applies to rate-regulated electric and gas utilities globally whose predominant business is the sale of electricity and/or gas or related services under a rate-regulated framework, in most cases to retail customers. Companies in many industries are regulated. We use the term rate-regulated to distinguish companies whose rates (by which we also mean tariffs or revenues in general) are set by regulators. Rate-regulated utilities that own generating assets as any material part of their business, utilities whose charges or bills to customers include a meaningful component related to the electric or gas commodity, utilities whose rates are regulated at a sub-sovereign level (e.g., by provinces, states or municipalities), and companies providing an independent system operator function to an electric grid are also rated using this methodology. Companies rated using this methodology are primarily rate-regulated monopolies or, in certain circumstances, companies that may not be outright monopolies but where government regulation effectively sets prices and limits competition.

We generally consider a company to be predominantly a regulated electric and gas utility when a majority of its cash flows, prospectively and on a sustained basis, are derived from regulated electric and gas utility businesses. Since cash flows can be volatile (such that a company might have a majority of utility cash flows simply due to a cyclical downturn in its non-utility businesses), we may also consider the breakdown of assets and/or debt of a company to determine which business is predominant.

This methodology applies to a wide variety of companies, including vertically integrated utilities, transmission and distribution utilities with retail customers and/or sub-sovereign regulation, natural gas local distribution utility companies (LDCs), independent system operators, and regulated generation companies. These companies may be operating companies or holding companies.

This methodology does not apply to regulated electric and gas networks, which are rated using a separate methodology. Regulated electric and gas networks are companies whose predominant business is purely the transmission and/or distribution of electricity and/ or natural gas without involvement in the procurement or sale of electricity and/or gas; whose charges to customers thus do not include a meaningful commodity cost component; which sell mainly (or in many cases exclusively) to non-retail customers; and which are rate-regulated under a national framework.

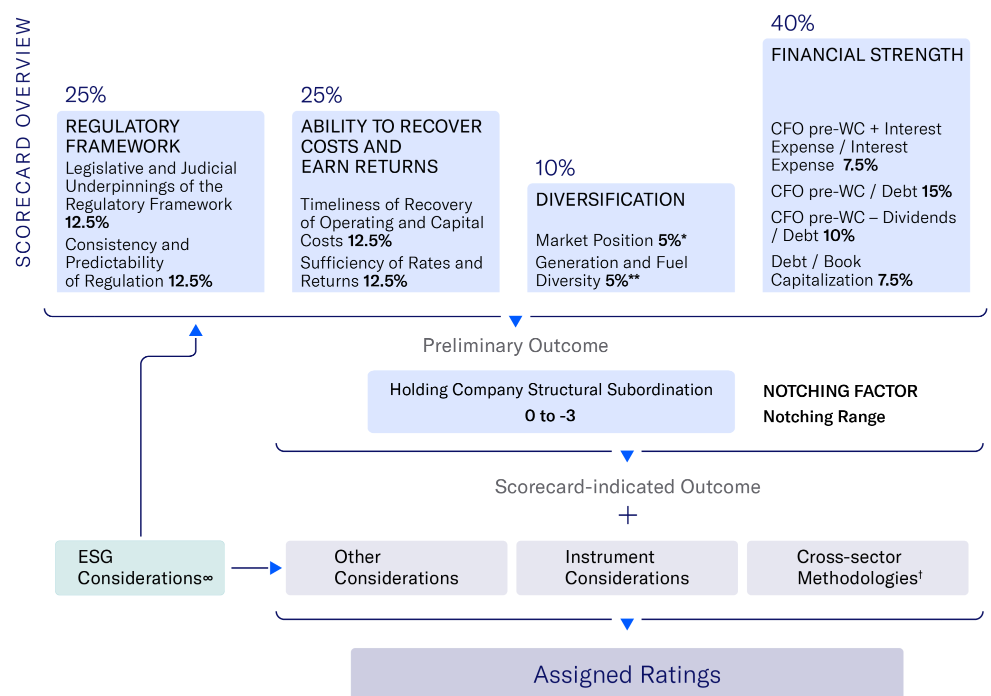
Unregulated utilities and power companies, public power utilities, municipal joint action agencies, electric cooperatives, regulated water companies, natural gas pipelines and midstream energy companies are also rated using separate methodologies.[1]

Rating approach

In this rating methodology, we explain our general approach to assessing credit risk of regulated electric and gas utilities globally, including the qualitative and quantitative factors that are likely to affect rating outcomes in this sector. We seek to incorporate all material credit considerations in ratings and to take the most forward-looking perspective that visibility into these risks and mitigants permits.

The following schematic illustrates our general framework for the analysis of regulated electric and gas utilities, which includes the use of a scorecard. The scorecard-indicated outcome is not expected to match the actual rating for each company. For more information, see the "Other considerations" and "Limitations" sections.

Exhibit 1
Illustration of the regulated electric and gas utilities methodology framework



* 10% weight for issuers that lack generation.
** 0% weight for issuers that lack generation.
∞ Environmental, social and governance (ESG) considerations, including, where available, our opinions of exposure to them as expressed in Issuer Profile Scores (IPSs), may affect scorecard factors and other considerations outside of the scorecard. For more information, see the "Other considerations" section.
† Some of the methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.
Source: Moody's Ratings

Regulated electric and gas utilities scorecard

For general information about how we use the scorecard and for a discussion of scorecard mechanics, please see the "Using the scorecard to arrive at a scorecard-indicated outcome" section. The scorecard does not include or address every factor that a rating committee may consider in assigning ratings in this sector. Please see the "Other considerations" and "Limitations" sections.

Exhibit 2

Regulated electric and gas utilities scorecard

	Weight	Aaa	Aa	A	Baa	Ba	B	Caa
Factor: Regulatory Framework (25%)								
Legislative and Judicial Underpinnings of the Regulatory Framework	12.5%	Utility regulation occurs under a fully developed framework that is national in scope based on legislation that provides the utility a nearly absolute monopoly [1] within its service territory, an unquestioned assurance that rates will be set in a manner that will permit the utility to make and recover all necessary investments, an extremely high degree of clarity as to the manner in which utilities will be regulated and prescriptive methods and procedures for setting rates. Existing utility law is comprehensive and supportive such that changes in legislation are not expected to be necessary; or any changes that have occurred have been strongly supportive of utilities credit quality in general and sufficiently forward-looking so as to address problems before they occurred. There is an independent judiciary that can arbitrate disagreements between the regulator and the utility should they occur, including access to national courts, very strong judicial precedent in the interpretation of utility laws, and a strong rule of law. We expect these conditions to continue.	Utility regulation occurs under a fully developed national, state or provincial framework based on legislation that provides the utility an extremely strong monopoly [1] within its service territory, a strong assurance, subject to limited review, that rates will be set in a manner that will permit the utility to make and recover all necessary investments, a very high degree of clarity as to the manner in which utilities will be regulated and reasonably prescriptive methods and procedures for setting rates. If there have been changes in utility legislation, they have been timely and clearly credit supportive of the issuer in a manner that shows the utility has had a strong voice in the process. There is an independent judiciary that can arbitrate disagreements between the regulator and the utility, should they occur including access to national courts, strong judicial precedent in the interpretation of utility laws, and a strong rule of law. We expect these conditions to continue.	Utility regulation occurs under a well-developed national, state or provincial framework based on legislation that provides the utility a very strong monopoly[1] within its service territory, an assurance, subject to reasonable prudency requirements, that rates will be set in a manner that will permit the utility to make and recover all necessary investments, a high degree of clarity as to the manner in which utilities will be regulated, and overall guidance for methods and procedures for setting rates. If there have been changes in utility legislation, they have been mostly timely and on the whole credit supportive for the issuer, and the utility has had a clear voice in the legislative process. There is an independent judiciary that can arbitrate disagreements between the regulator and the utility, should they occur, including access to national courts, clear judicial precedent in the interpretation of utility law, and a strong rule of law. We expect these conditions to continue.	Utility regulation occurs (i) under a national, state, provincial or municipal framework based on legislation that provides the utility a strong monopoly within its service territory that may have some exceptions such as greater self-generation,[1] a general assurance that, subject to prudency requirements that are mostly reasonable, rates will be set in a manner that will permit the utility to make and recover all necessary investments, reasonable clarity as to the manner in which utilities will be regulated and overall guidance for methods and procedures for setting rates; or (ii) under a new framework where independent and transparent regulation exists in other sectors. If there have been changes in utility legislation, they have been credit supportive or at least balanced for the issuer but potentially less timely, and the utility had a voice in the legislative process. There is either (i) an independent judiciary that can arbitrate disagreements between the regulator and the utility, including access to courts at least at the state or provincial level, reasonably clear judicial precedent in the interpretation of utility laws, and a generally strong rule of law; or (ii) regulation has been applied (under a well-developed framework) in a manner such that redress to an independent arbiter has not been required. We expect these conditions to continue.	Utility regulation occurs (i) under a national, state, provincial or municipal framework based on legislation or government decree that provides the utility a monopoly within its service territory that is generally strong but may have a greater level of exceptions,[1] and that, subject to prudency requirements which may be stringent, provides a general assurance (with somewhat less certainty) that rates will be set in a manner that will permit the utility to make and recover necessary investments; or (ii) under a new framework where the jurisdiction has a history of less independent and transparent regulation in other sectors. Either: (i) the judiciary that can arbitrate disagreements between the regulator and the utility may not have clear authority or may not be fully independent of the regulator or other political pressure, but there is a reasonably strong rule of law; or (ii) where there is no independent arbiter, the regulation has mostly been applied in a manner such redress has not been required. We expect these conditions to continue.	Utility regulation occurs (i) under a national, state, provincial or municipal framework based on legislation or government decree that provides the utility monopoly within its service territory that is reasonably strong but may have important exceptions, and that, subject to prudency requirements which may be stringent or at times arbitrary, provides more limited or less certain assurance that rates will be set in a manner that will permit the utility to make and recover necessary investments; or (ii) under a new framework where we would expect less independent and transparent regulation, based either on the regulator's history in other sectors or other factors. The judiciary that can arbitrate disagreements between the regulator and the utility may not have clear authority or may not be fully independent of the regulator or other political pressure, but there is a reasonably strong rule of law. Alternately, where there is no independent arbiter, the regulation has been applied in a manner that often requires some redress adding more uncertainty to the regulatory framework. There may be a periodic risk of creditor-unfriendly government intervention in utility markets or rate-setting.	Utility regulation occurs (i) under a national, state, provincial or municipal framework based on legislation or government decree that provides the utility a monopoly within its service territory, but with little assurance that rates will be set in a manner that will permit the utility to make and recover necessary investments; or (ii) under a new framework where we would expect unpredictable or adverse regulation, based either on the jurisdiction's history in other sectors or other factors. The judiciary that can arbitrate disagreements between the regulator and the utility may not have clear authority or is viewed as not being fully independent of the regulator or other political pressure. Alternately, there may be no redress to an effective independent arbiter. The ability of the utility to enforce its monopoly or prevent uncompensated usage of its system may be limited. There may be a risk of creditor-unfriendly nationalization or other significant intervention in utility markets or rate-setting.

	Weight	Aaa	Aa	A	Baa	Ba	B	Caa
Factor: Regulatory Framework (25%)								
Consistency and Predictability of Regulation	12.5%	The issuer's interaction with the regulator has led to a strong, lengthy track record of predictable, consistent and favorable decisions. The regulator is highly credit supportive of the issuer and utilities in general. We expect these conditions to continue.	The issuer's interaction with the regulator has a led to a considerable track record of predominantly predictable and consistent decisions. The regulator is mostly credit supportive of utilities in general and in almost all instances has been highly credit supportive of the issuer. We expect these conditions to continue.	The issuer's interaction with the regulator has led to a track record of largely predictable and consistent decisions. The regulator may be somewhat less credit supportive of utilities in general, but has been quite credit supportive of the issuer in most circumstances. We expect these conditions to continue.	The issuer's interaction with the regulator has led to an adequate track record. The regulator is generally consistent and predictable, but there may some evidence of inconsistency or unpredictability from time to time, or decisions may at times be politically charged. However, instances of less credit supportive decisions are based on reasonable application of existing rules and statutes and are not overly punitive. We expect these conditions to continue.	We expect that regulatory decisions will demonstrate considerable inconsistency or unpredictability or that decisions will be politically charged, based either on the issuer's track record of interaction with regulators or other governing bodies, or our view that decisions will move in this direction. The regulator may have a history of less credit supportive regulatory decisions with respect to the issuer, but we expect that the issuer will be able to obtain support when it encounters financial stress, with some potentially material delays. The regulator's authority may be eroded at times by legislative or political action. The regulator may not follow the framework for some material decisions.	We expect that regulatory decisions will be largely unpredictable or even somewhat arbitrary, based either on the issuer's track record of interaction with regulators or other governing bodies, or our view that decisions will move in this direction. However, we expect that the issuer will ultimately be able to obtain support when it encounters financial stress, albeit with material or more extended delays. Alternately, the regulator is untested, lacks a consistent track record, or is undergoing substantial change. The regulator's authority may be eroded on frequent occasions by legislative or political action. The regulator may more frequently ignore the framework in a manner detrimental to the issuer.	We expect that regulatory decisions will be highly unpredictable and frequently adverse, based either on the issuer's track record of interaction with regulators or other governing bodies, or our view that decisions will move in this direction. Alternately, decisions may have credit supportive aspects, but may often be unenforceable. The regulator's authority may have been seriously eroded by legislative or political action. The regulator may consistently ignore the framework to the detriment of the issuer.
Factor: Ability to Recover Costs and Earn Returns (25%)								
Timeliness of Recovery of Operating and Capital Costs	12.5%	Tariff formulas [2] and automatic cost recovery mechanisms provide full and highly timely recovery of all operating costs and essentially contemporaneous return on all incremental capital investments, with statutory provisions in place to preclude the possibility of challenges to rate increases or cost recovery mechanisms. By statute and by practice, general rate cases are efficient, focused on an impartial review, quick, and permit inclusion of fully forward-looking costs.	Tariff formulas [2] and automatic cost recovery mechanisms provide full and highly timely recovery of all operating costs and essentially contemporaneous or near-contemporaneous return on most incremental capital investments, with minimal challenges by regulators to companies' cost assumptions. By statute and by practice, general rate cases are efficient, focused on an impartial review, of a very reasonable duration before non-appealable interim rates can be collected, and primarily permit inclusion of forward-looking costs.	Automatic cost recovery mechanisms provide full and reasonably timely recovery of fuel, purchased power and all other highly variable operating expenses. Material capital investments may be made under tariff formulas [2] or other rate-making permitting reasonably contemporaneous returns, or may be submitted under other types of filings that provide recovery of cost of capital with minimal delays. Instances of regulatory challenges that delay rate increases or cost recovery are generally related to large, unexpected increases in sizeable construction projects. By statute or by practice, general rate cases are reasonably efficient, primarily focused on an impartial review, of a reasonable duration before rates (either permanent or non-refundable interim rates) can be collected, and permit inclusion of important forward-looking costs.	Fuel, purchased power and all other highly variable expenses are generally recovered through mechanisms incorporating delays of less than one year, although some rapid increases in costs may be delayed longer where such deferrals do not place financial stress on the utility. Incremental capital investments may be recovered primarily through general rate cases with moderate lag, with some through tariff formulas.[2] Alternately, there may be formula rates that are untested or unclear. Potentially greater tendency for delays due to regulatory intervention, although this will generally be limited to rates related to large capital projects or rapid increases in operating costs.	There is an expectation that fuel, purchased power or other highly variable expenses will eventually be recovered with delays that will not place material financial stress on the utility, but there may be some evidence of an unwillingness by regulators to make timely rate changes to address volatility in fuel, or purchased power, or other market-sensitive expenses. Recovery of costs related to capital investments may be subject to delays that are somewhat lengthy, but not so pervasive as to be expected to discourage important investments.	The expectation that fuel, purchased power or other highly variable expenses will be recovered may be subject to material delays due to second-guessing of spending decisions by regulators or due to political intervention. Recovery of costs related to capital investments may be subject to delays that are material to the issuer, or may be likely to discourage some important investment.	The expectation that fuel, purchased power or other highly variable expenses will be recovered may be subject to extensive delays due to second-guessing of spending decisions by regulators or due to political intervention. Recovery of costs related to capital investments may be uncertain, subject to delays that are extensive, or that may be likely to discourage even necessary investment.

	Weight	Aaa	Aa	A	Baa	Ba	B	Caa
Factor: Ability to Recover Costs and Earn Returns (25%)								
Sufficiency of Rates and Returns	12.5%	Sufficiency of rates to cover costs and attract capital is (and will continue to be) unquestioned.	Rates are (and we expect will continue to be) set at a level that permits full cost recovery and a fair return on all investments, with minimal challenges by regulators to companies' cost assumptions. This will translate to returns (measured in relation to equity, total assets, rate base or regulatory asset value, as applicable) that are strong relative to global peers.	Rates are (and we expect will continue to be) set at a level that generally provides full cost recovery and a fair return on investments, with limited instances of regulatory challenges and disallowances. In general, this will translate to returns (measured in relation to equity, total assets, rate base or regulatory asset value, as applicable) that are generally above average relative to global peers, but may at times be average.	Rates are (and we expect will continue to be) set at a level that generally provides full operating cost recovery and a mostly fair return on investments, but there may be somewhat more instances of regulatory challenges and disallowances, although ultimate rate outcomes are sufficient to attract capital without difficulty. In general, this will translate to returns (measured in relation to equity, total assets, rate base or regulatory asset value, as applicable) that are average relative to global peers, but may at times be somewhat below average.	Rates are (and we expect will continue to be) set at a level that generally provides recovery of most operating costs but return on investments may be less predictable, and there may be decidedly more instances of regulatory challenges and disallowances, but ultimate rate outcomes are generally sufficient to attract capital. In general, this will translate to returns (measured in relation to equity, total assets, rate base or regulatory asset value, as applicable) that are generally below average relative to global peers, or where allowed returns are average but difficult to earn. Alternately, the tariff formula may not take into account all cost components and/or remuneration of investments may be unclear or at times unfavorable.	We expect rates will be set at a level that at times fails to provide recovery of costs other than cash costs, and regulators may engage in somewhat arbitrary second-guessing of spending decisions or deny rate increases related to funding ongoing operations based much more on politics than on prudency reviews. Return on investments may be set at levels that discourage investment. We expect that rate outcomes may be difficult or uncertain, negatively affecting continued access to capital. Alternately, the tariff formula may fail to take into account significant cost components other than cash costs, and/or remuneration of investments may be generally unfavorable.	We expect rates will be set at a level that often fails to provide recovery of material costs, and recovery of cash costs may also be at risk. Regulators may engage in more arbitrary second-guessing of spending decisions or deny rate increases related to funding ongoing operations based primarily on politics. Return on investments may be set at levels that discourage necessary maintenance investment. We expect that rate outcomes may often be punitive or highly uncertain, with a markedly negative impact on access to capital. Alternately, the tariff formula may fail to take into account significant cash cost components, and/or remuneration of investments may be primarily unfavorable.
Factor: Diversification (10%)								
Market Position	5% [3]	A very high degree of multinational and regional diversity in terms of regulatory regimes and/or service territory economies.	Material operations in three or more nations or substantial geographic regions providing very good diversity of regulatory regimes and/or service territory economies.	Material operations in two to three nations, states, provinces or regions that provide good diversity of regulatory regimes and service territory economies. Alternately, operates within a single regulatory regime with low volatility, and the service territory economy is robust, has a very high degree of diversity and has demonstrated resilience in economic cycles.	May operate under a single regulatory regime viewed as having low volatility, or where multiple regulatory regimes are not viewed as providing much diversity. The service territory economy may have some concentration and cyclicality, but is sufficiently resilient that it can absorb reasonably foreseeable increases in utility rates.	Operates in a market area with somewhat greater concentration and cyclicality in the service territory economy and/or exposure to storms and other natural disasters, and thus less resilience to absorbing reasonably foreseeable increases in utility rates. May show somewhat greater volatility in the regulatory regime(s).	Operates in a limited market area with material concentration and more severe cyclicality in service territory economy such that cycles are of materially longer duration or reasonably foreseeable increases in utility rates could present a material challenge to the economy. Service territory may have geographic concentration that limits its resilience to storms and other natural disasters, or may be an emerging market. May show decided volatility in the regulatory regime(s).	Operates in a concentrated economic service territory with pronounced concentration, macroeconomic risk factors, and/or exposure to natural disasters.
Generation and Fuel Diversity	5% [4]	A high degree of diversity in terms of generation and/or fuel sources such that the utility and rate-payers are well insulated from commodity price changes, no generation concentration, and very low exposures to Challenged or Threatened Sources (see definitions below).[5]	Very good diversification in terms of generation and/or fuel sources such that the utility and rate-payers are affected only minimally by commodity price changes, little generation concentration, and low exposures to Challenged or Threatened Sources.	Good diversification in terms of generation and/or fuel sources such that the utility and rate-payers have only modest exposure to commodity price changes; however, may have some concentration in a source that is neither Challenged nor Threatened. Exposure to Threatened Sources is low. While there may be some exposure to Challenged Sources, it is not a cause for concern.	Adequate diversification in terms of generation and/or fuel sources such that the utility and rate-payers have moderate exposure to commodity price changes; however, may have some concentration in a source that is Challenged. Exposure to Threatened Sources is moderate, while exposure to Challenged Sources is manageable.	Modest diversification in generation and/or fuel sources such that the utility or rate-payers have greater exposure to commodity price changes. Exposure to Challenged and Threatened Sources may be more pronounced, but the utility will be able to access alternative sources without undue financial stress.	Operates with little diversification in generation and/or fuel sources such that the utility or rate-payers have high exposure to commodity price changes. Exposure to Challenged and Threatened Sources may be high, and accessing alternate sources may be challenging and cause more financial stress, but ultimately feasible.	Operates with high concentration in generation and/or fuel sources such that the utility or rate-payers have exposure to commodity price shocks. Exposure to Challenged and Threatened Sources may be very high, and accessing alternate sources may be highly uncertain.

	Weight		Aaa	Aa	A	Baa	Ba	B	Caa
Factor: Financial Strength (40%)									
CFO pre-WC + Interest Expense / Interest Expense	7.5%		≥ 8x	6x - 8x	4.5x - 6x	3x - 4.5x	2x - 3x	1x - 2x	< 1x
CFO pre-WC / Debt	15%	Standard Grid	≥ 40%	30% - 40%	22% - 30%	13% - 22%	5% - 13%	1% - 5%	< 1%
		Low Business Risk Grid	≥ 38%	27% - 38%	19% - 27%	11% - 19%	5% - 11%	1% - 5%	< 1%
CFO pre-WC - Dividends / Debt	10%	Standard Grid	≥ 35%	25% - 35%	17% - 25%	9% - 17%	0% - 9%	(5)% - 0%	< (5)%
		Low Business Risk Grid	≥ 34%	23% - 34%	15% - 23%	7% - 15%	0% - 7%	(5)% - 0%	< (5)%
Debt / Book Capitalization[6]	7.5%	Standard Grid	< 25%	25% - 35%	35% - 45%	45% - 55%	55% - 65%	65% - 75%	≥ 75%
		Low Business Risk Grid	< 29%	29% - 40%	40% - 50%	50% - 59%	59% - 67%	67% - 75%	≥ 75%
Preliminary outcome									
Notching factor									
Structural Subordination of Holding Companies									
0 to -3 notches									
Scorecard-indicated outcome									

[1] The strength of the monopoly refers to the legal, regulatory and practical obstacles for customers in the utility's territory to obtain service from another provider. Examples of a weakening of the monopoly would include the ability of a city or large user to leave the utility system to set up their own system, the extent to which self-generation is permitted (e.g., cogeneration) and/or encouraged (e.g., net metering, DSM generation). At the lower end of the ratings spectrum, the utility's monopoly may be challenged by pervasive theft and unauthorized use. Since utilities are generally presumed to be monopolies, a strong monopoly position in itself is not sufficient for a strong score in this sub-factor, but a weakening of the monopoly can lower the score.
[2] Tariff formulas include formula rate plans as well as trackers and riders related to capital investment.
[3] 10% weight for issuers that lack generation.
[4] 0% weight for issuers that lack generation.
[5] Challenged Sources are generation plants that face higher but not insurmountable economic hurdles resulting from penalties or taxes on their operation, or from environmental upgrades that are required or likely to be required. Some examples are carbon-emitting plants that incur carbon taxes, plants that must buy emissions credits to operate, and plants that must install environmental equipment to continue to operate, in each where the taxes/credits/upgrades are sufficient to have a material impact on those plants' competitiveness relative to other generation types or on the utility's rates, but where the impact is not so severe as to be likely require plant closure. Threatened Sources are generation plants that are not currently able to operate due to major unplanned outages or issues with licensing or other regulatory compliance, and plants that are highly likely to be required to de-activate, whether due to the effectiveness of currently existing or expected rules and regulations or due to economic challenges.
[6] When debt/book capitalization is negative, the score is Caa.
Source: Moody's Ratings

Sector overview

Regulated electric and gas utilities globally are engaged in the production, transmission, coordination, distribution and/or sale of electricity and/or natural gas, and they are either investor-owned companies, commercially oriented government-owned companies or, in the case of independent system operators, not-for-profit or similar entities.

An over-arching consideration for regulated utilities is the regulatory environment in which they operate. The nature of regulation can vary significantly from jurisdiction to jurisdiction and is dynamic and subject to political intervention. The direct relationship that a regulated utility has with the retail customer, including billing for electric or gas supply that has substantial price volatility, can lead to a more politically charged rate-setting environment. Similarly, regulation at the sub-sovereign level is often subject to intervention from disaffected customers and influenced by public officials . Our views of regulatory environments evolve over time in accordance with our observations of regulatory, political and judicial events that affect issuers in the sector.

The principal categories of companies rated using this methodology include the following:

Vertically integrated utility: Vertically integrated utilities are regulated electric or combination utilities (see below) that own generation, distribution and (in most cases) electric transmission assets. Vertically integrated utilities are generally engaged in all aspects of the electricity business. They build power plants, procure fuel, generate power, build and maintain the electric grid (including high and low voltage lines, transformers and substations) that delivers power from a group of power plants to end-users , and generally meet all of the electric needs of the customers in a specific geographic area (also called a service territory). The rates or tariffs for all of these monopolistic activities are set by the relevant regulatory authority.

Transmission and distribution utility: Transmission and distribution utilities (T&Ds) typically operate in deregulated markets where generation is provided under a competitive framework. T&Ds own and operate the electric grid that transmits and/or distributes electricity within a specific state or region.

T&Ds provide electrical transportation and distribution services to carry electricity from power plants and transmission lines to retail, commercial, and industrial customers. T&Ds are typically responsible for billing customers for electric delivery and/or supply, and most have an obligation to provide a standard supply or provider-of-last-resort (POLR) service to customers that have not switched to a competitive supplier. These factors distinguish T&Ds from networks, whose customers are retail electric suppliers and/or other electricity companies. In a smaller number of cases, T&Ds rated using this methodology may not have an obligation to provide POLR services, but are regulated in sub-sovereign jurisdictions. The rates or tariffs for these monopolistic T&D activities are set by the relevant regulatory authority.

Natural gas local distribution company: Distribution is the final step in delivering natural gas to customers. While some large industrial, commercial, and electric generation customers receive natural gas directly from high capacity pipelines that carry gas from gas producing basins to areas where gas is consumed, most other users receive natural gas from their local gas utility, also called a local distribution company (LDC). LDCs are regulated utilities involved in the delivery of natural gas to consumers within a specific geographic area. Specifically, LDCs typically transport natural gas from delivery points located on large-diameter pipelines (that usually operate at fairly high pressure) to households and businesses through thousands of miles of small-diameter distribution pipe (that usually operate at fairly low pressure). LDCs are typically responsible for billing customers for gas delivery and/or supply, and most also have the responsibility to procure gas for at least some of their customers, although in some markets gas supply to all customers is on a competitive basis. These factors distinguish LDCs from gas networks, whose customers are retail gas suppliers and/or other natural gas companies. The rates or tariffs for these monopolistic activities are set by the relevant regulatory authority.

Integrated gas utility : Integrated gas utilities are regulated utilities that deliver gas to all end users in a particular service territory by sourcing the commodity; operating transport infrastructure that often combines high pressure pipelines with low pressure distribution systems and, in some cases, gas storage, re-gasification or other related facilities; and performing other supply-related activities, such as customer billing and metering. The rates or tariffs for the totality of these activities are set by the relevant regulatory authority. Many integrated gas utilities are national in scope.

Combination utility: Combination utilities are those that combine an LDC or integrated gas utility with either a vertically integrated utility or a T&D utility. The rates or tariffs for these monopolistic activities are set by the relevant regulatory authority.

Regulated generation utility: Regulated generation utilities (regulated gencos) are utilities that almost exclusively have generation assets, but their activities are generally regulated like those of vertically integrated utilities. This typically means that the purchasers of their output (typically other investor-owned, municipal or cooperative utilities) pay a regulated rate based on the total allowed costs of the regulated genco, including a return on equity, based on a capital structure designated by the regulator. Companies that have been included in this group include certain generation companies that are not rate-regulated in the usual sense of recovering costs plus a regulated rate of return on either equity or asset value.

Independent system operator: An independent system operator (ISO) is an organization formed in certain regional electricity markets to act as the sole chief coordinator of an electric grid. In the areas where an ISO is established, it coordinates, controls and monitors the operation of the electrical power system to assure that electric supply and demand are balanced at all times, and, to the extent possible, that electric demand is met with the lowest-cost sources. ISOs seek to assure adequate transmission and generation resources, usually by identifying new transmission needs and planning for a generation reserve margin above expected peak demand. In regions where generation is competitive, they also seek to establish rules that foster a fair and open marketplace, and they may conduct price-setting auctions for energy and/or capacity. The generation resources that an ISO coordinates may belong to vertically integrated utilities or to independent power producers. ISOs may not be rate-regulated in the traditional sense but fall under governmental oversight. All participants in the regional grid are required to pay a fee or tariff (often volumetric) to the ISO that is designed to recover its costs, including costs of investment in systems and equipment needed to fulfill their function. ISOs may be for profit or not-for-profit entities.

Transmission-only utility: Transmission-only utilities are solely focused on owning and operating transmission assets. The transmission lines these utilities own are typically high-voltage and allow energy producers to transport electric power over long distances from where it is generated (or received) to the transmission or distribution system of a T&D or vertically integrated utility.

Utility holding company (utility holdco): As detailed in Appendix B, regulated electric and gas utilities are often part of corporate families under a parent holding company. The operating subsidiaries of utility holdcos are overwhelmingly regulated electric and gas utilities.

Hybrid holding company (hybrid holdco): Some utility families contain a mix of regulated electric and gas utilities and other types of companies, but the regulated electric and gas utilities represent the majority of the consolidated cash flows, assets and debt. The parent company is thus a hybrid holdco.

Discussion of the scorecard factors

In this section, we explain our general approach for scoring each scorecard factor or sub-factor, and we describe why they are meaningful as credit indicators.

Factor: Regulatory Framework (25%)

Why it matters

The regulatory framework is important because it provides the basis for decisions that affect utilities, including rate-setting as well as the consistency and predictability of regulatory decision-making. Core aspects of a regulatory framework are its legislative and judicial underpinnings, and the consistency and predictability of regulatory decisions and rule-making.

Utility rates are set in a political/regulatory process rather than a competitive or free-market process; thus, the regulatory framework is a key determinant of the credit quality of a utility. In jurisdictions where utility revenues include material government subsidy payments, we consider utility rates to be inclusive of these payments, and we thus evaluate sub-factors under the first two factors in light of both rates and material subsidy payments. For example, we would consider the legal and judicial underpinnings and consistency and predictability of subsidies as well as rates. The regulatory framework has many components: the governing body and the utility legislation or decrees it enacts, the manner in which regulators are appointed or elected, the rules and procedures promulgated by those regulators, the judiciary that interprets the laws and rules and that arbitrates disagreements, and the manner in which the utility manages the political and regulatory process. In many cases, utilities have experienced credit stress or default because of a breakdown or obstacle in the regulatory framework – for instance, laws that prohibited regulators from including , in rates, the recovery of investments in uncompleted power plants or plants not deemed "used and useful," or a disagreement about rate-making that could not be resolved until after the utility had defaulted on its debts.

How we assess it for the scorecard

Scoring for this factor is based on two sub-factors: Legislative and Judicial Underpinnings of the Regulatory Framework; and Consistency and Predictability of Regulation.

Legislative and Judicial Underpinnings of the Regulatory Framework

For this sub-factor, we consider the scope, clarity, transparency, supportiveness and granularity of utility legislation, decrees, and rules as they apply to the issuer. We also consider the strength of the regulator's authority over rate-making and other regulatory issues affecting the utility, the effectiveness of the judiciary or other independent body in arbitrating disputes in a disinterested manner, and whether the utility's monopoly has meaningful or growing carve-outs. In addition, we consider how well-developed the framework is – both how fully fleshed out the rules and regulations are and how well-tested it is – and the extent to which regulatory or judicial decisions have created a body of precedent that help determine future rate-making. We consider how effective the utility is in navigating the regulatory framework – both the utility's ability to shape the framework and adapt to it.

A utility operating in a regulatory framework that is characterized by legislation that is credit-supportive of utilities and eliminates doubt by prescribing many of the procedures that the regulators use in determining fair rates (which legislation may show evidence of being responsive to the needs of the utility in general or specific ways), a long history of transparent rate-setting, and a judiciary that has provided ample precedent by impartially adjudicating disagreements in a manner that addresses ambiguities in the laws and regulations typically receives higher scores for this sub-factor. A utility operating in a regulatory framework that, by statute or practice, allows the regulator to arbitrarily prevent the utility from recovering its costs or earning a reasonable return on prudently incurred investments, or where regulatory decisions may be reversed by politicians, typically receives a lower score.

In general, we view national utility regulation as being less susceptible to political intervention than regulation by state, provincial or municipal entities, so the highest scoring in this sub-factor is typically reserved for this category. However, we acknowledge that states and provinces in some countries may be larger than small nations, such that their regulators may be equally impartial. In such cases, issuers are likely to receive higher scores for this sub-factor.

The relevant judicial system can be a major factor in the regulatory framework, particularly in countries like the US, where disagreements between a utility and its state or municipal regulator may eventually be adjudicated in a federal district court or even by the US Supreme Court. In addition, bankruptcy proceedings in the US occur in federal courts, which have at times been able to impose rate settlement agreements on state or municipal regulators. As a result, the range of decisions available to state regulators may be effectively circumscribed by court precedent at the state or federal level, which we generally view as a favorable characteristic of the regulatory framework.

We consider regulated electric and gas utilities generally to have strong monopolies that are likely to continue, which allows these companies to have high leverage. Thus, the existence of a monopoly in itself is unlikely to be a driver of strong scoring in this sub-factor. On the other hand, a strong challenge to the monopoly could result in lower scores because of the potential loss of customers and revenue. A utility can only recover its costs and investments and service its debt if customers purchase its services. Examples of incursions into utilities' monopoly include the takeover of the utility by a municipality, self-generation such as rooftop solar panels, distributed generation with net metering, in which customers generate power and sell excess power to the utility, or unauthorized use beyond the level for which the utility receives compensation in rates. Incursions that are growing significantly or are having a meaningful impact on rates for customers that remain with the utility could have a negative impact on the scoring of this sub-factor and on the Ability to Recover Costs and Earn Returns factor.

The scoring of this sub-factor may not be the same for every utility in a particular jurisdiction. Some utilities appear to have greater sway over the relevant utility legislation and promulgation of rules than other utilities – even those in the same jurisdiction. The content and tone of publicly filed documents and regulatory decisions sometimes indicates that the management team at one utility has better responsiveness to and credibility with its regulators or legislators than the management at another utility.

While the underpinnings to the regulatory framework tend to change relatively slowly, they do evolve, and our scoring reflects that evolution. For instance, a new regulatory framework typically becomes tested over time as regulatory decisions are issued, or perhaps litigated, thereby setting a body of precedent. Utilities may seek changes to laws in order to permit them to securitize certain costs or collect interim rates, or a jurisdiction in which rates were previously recovered primarily in base rate proceedings may institute riders and trackers. These changes would likely affect scoring of the Timeliness of Recovery of Operating and Capital Costs sub-factor, but they may also be sufficiently significant to indicate a change in the regulatory underpinnings.

The regulatory framework may also change as a result of a judiciary that had formerly been independent of the executive branch, but which may start to issue decisions that indicate it is conforming its decisions to the expectations of an executive branch that wants to mandate lower rates.

Consistency and Predictability of Regulation

In assessing this sub-factor, we consider the track record of regulatory decisions in terms of consistency, predictability and supportiveness. We evaluate the utility's interactions in the regulatory process as well as the overall stance of the regulator toward the utility.

In most jurisdictions, the laws and rules seek to make rate-setting a primarily technical process that examines costs the utility incurs and the returns on investments the utility needs to earn so it can make investments that are required to build and maintain the utility infrastructure, which includes power plants, electric transmission and distribution systems, and/or natural gas distribution systems. Where the process remains technical and transparent such that regulators can support the financial health of the utility while balancing their public duty to assure that reliable service is provided at a reasonable cost, and where the utility is able to align itself with the policy initiatives of the governing jurisdiction, the utility typically receives higher scores for this sub-factor. Where the process includes substantial political intervention, which could take the form of legislators or other government officials publicly second-guessing regulators, dismissing regulators who have approved unpopular rate increases, or preventing the implementation of rate increases, or where regulators ignore the laws/rules to deliver an outcome that appears more politically motivated, the utility typically receives a lower score for this sub-factor.

As with the prior sub-factor, we may score different utilities in the same jurisdiction differently, based on outcomes that are more or less supportive of credit quality over a period of time. Some utilities are better able to meet the expectations of their customers and regulators, whether through better service, greater reliability, more stable rates or simply more effective regulatory outreach and communication. These utilities typically receive more consistent and credit-supportive outcomes, so they typically score higher for this sub-factor. Conversely, if a utility has multiple, rapid rate increases, chooses to submit major rate increase requests during a sensitive election cycle or a severe economic downturn, has chronic customer service issues, is viewed as frequently providing incomplete information to regulators, or is tone-deaf to the priorities of regulators and politicians, it may receive less consistent and supportive outcomes and thus receive a lower score for this sub-factor.

In scoring this sub-factor, we primarily evaluate the actions of regulators, politicians and jurists rather than their words. Nonetheless, words matter when they are an indication of future action. We seek to differentiate between political rhetoric that is perhaps oriented toward gaining attention for the viewpoint of the speaker and rhetoric that is indicative of future actions and trends in decision-making.

Factor: Ability to Recover Costs and Earn Returns (25%)

Why it matters

The ability of a utility to recover its costs and earn a return, including during different market and economic conditions, directly affects its ability to generate cash flow and service its debt. Core aspects of this factor are the timeliness of recovery of operating and capital costs, and the sufficiency of rates and returns.

The ability to recover prudently incurred costs on a timely basis and to attract debt and equity capital are crucial credit considerations. The inability to recover costs, for instance if fuel or purchased power costs ballooned during a rate freeze period, has been one of the greatest drivers of financial stress in this sector, as well as the cause of some utility defaults. In a sector that is typically free cash flow negative (due to large capital expenditures and dividends) and that routinely needs to refinance very large maturities of long-term debt, investor concerns about a lack of timely cost recovery or the sufficiency of rates can, in an extreme scenario, strain access to capital markets and potentially lead to insolvency of the utility. While our scoring for this factor may primarily be influenced by our assessment of the regulatory relationship, it can also be highly affected by the management and business decisions of the utility.

The timeliness and sufficiency of rates are interrelated. Timeliness can have an impact on our view of what constitutes sufficient returns, because a strong assurance of timely cost recovery reduces risk. Conversely, utilities may have a strong assurance that they will earn a full return on certain deferred costs until they are able to collect them, or their generally strong returns may allow them to weather some rate lag on recovery of construction-related capital expenditures. The timeliness of cost recovery is particularly important in a period of rapidly rising costs. For example, fuel is a large component of total costs for vertically integrated utilities and for natural gas utilities, and fuel prices are highly volatile, so the timeliness of fuel and purchased power cost recovery is especially important.

The first two factors are closely interrelated, but utilities may receive different scores for each of these. For example, a utility could have a regulatory framework that causes considerable credit concerns, perhaps because it is untested or undergoing a transition to de-regulation, but where the track record of rate-case outcomes is positive. This could result in a higher score for the Ability to Recover Costs and Earn Returns factor than for the Regulatory Framework factor. Conversely, there may be instances of strong Legislative and Judicial Underpinnings of the regulatory framework where a commission ignores the framework, which affects the Consistency and Predictability of Regulation as well as the Ability to Recover Costs and Earn Returns. In some cases, a commission has used extraordinary measures to prevent or defer a rate increase that might have been justifiable from a cost perspective but would have caused rate shock.

Scoring for the Ability to Recover Costs and Earn Returns factor places more emphasis on our expectation of timeliness and sufficiency of rates over time; whereas financial metrics may be affected by one-time events, market conditions or construction cycles, which are trends that could normalize or even reverse.

How we assess it for the scorecard

Scoring for this factor is based on two sub-factors: Timeliness of Recovery of Operating and Capital Costs; and Sufficiency of Rates and Returns.

Timeliness of Recovery of Operating and Capital Costs

In assessing this sub-factor, we consider provisions and cost recovery mechanisms for operating costs, mechanisms that allow operating and/or capital expenditures to be trued up periodically in rates without having to file a rate case (this may include formula rates, rider and trackers, or the ability to periodically adjust rates for construction work in progress). We also consider the process and time frame of rate proceedings and the track record of recovery. For instance, having a formula rate plan is positive, but if the actual process has included reviews that are delayed for long periods, it may diminish the benefit to the utility. In addition, we consider the lag between the time that a utility incurs a major construction expenditure and the time that the utility will start to recover and/or earn a return on that expenditure.

Sufficiency of Rates and Returns

In assessing this sub-factor, we consider statutory protections that assure full cost recovery and a reasonable return for the utility on its investments, the regulatory mechanisms used to determine what a reasonable return should be, and the track record of the utility in actually recovering costs and earning allowed returns.

We examine outcomes of rate cases/tariff reviews and compare them to the request submitted by the utility, to prior rate cases/tariff reviews for the same utility and to recent rate/tariff decisions for a peer group of comparable utilities. In this context, comparable utilities are typically utilities in the same or similar jurisdiction. In cases where the utility is unique or nearly unique in its jurisdiction, we compare it to other peers with an adjustment for local differences, including prevailing rates of interest and returns on capital, as well as the timeliness of rate-setting . We consider regulatory disallowances of costs or investments, with a focus on their financial severity and also on the reasons provided by the regulator, in order to assess the likelihood that such disallowances will be repeated in the future.

Factor: Diversification (10%)

Why it matters

Diversification of overall business operations is important because it helps to mitigate the risk that economic cycles, material changes in a single regulatory regime, or commodity price movements have on the cash flow and credit quality of a utility. While utilities' sales volumes have lower exposure to economic downturns than many non-financial corporate issuers, some sales components, including industrial sales, are directly affected by economic trends that result in lower production and/or plant closures. In addition, economic activity performs a role in the commercial sector or rate of customer growth in the service territory and, absent energy efficiency and conservation, can often affect usage per customer.

The economic strength or weakness of the service territory can affect the political and regulatory environment for rate increase requests by the utility. For utilities in areas prone to severe storms and other natural disasters, the utility's geographic diversity or concentration can be a key determinant for creditworthiness.

Diversity among regulatory regimes can mitigate the impact of a single unfavorable decision affecting one part of the utility's footprint.

For utilities with electric generation, fuel-source diversity can mitigate the impact to the utility and to its rate-payers of changes in commodity prices, hydrology and water flow, and environmental or other regulations affecting plant operations and economics; so fuel diversity typically leads to more stable rates over time.

Regulatory environments are most likely to become unfavorable during periods of rapid rate increases, which are more important than absolute rate levels. Fuel diversity can be important even if fuel and purchased power expenses are an automatic pass-through to the utility's rate-payers, because rapid price increases can cause regulators or utilities to seek recovery over a more prolonged period than the pass-through mechanism allows. Changes in environmental, safety and other regulations have caused vulnerabilities for certain technologies and fuel sources. These vulnerabilities have varied widely in different countries and have changed over time.

How we assess it for the scorecard
Scoring for this factor is based on two sub-factors: Market Position, and Generation and Fuel Diversity.

Market Position

In assessing market position, we consider the economic diversity of the utility's service territory and the diversity of its regulatory regimes, as well as the size and scale of a utility's operations. We also consider the diversity of utility operations (e.g., regulated electric, gas, water, steam) where there are material operations in more than one area.

Economic diversity is typically a function of the population, size and breadth of the territory and the businesses that drive its gross domestic product (GDP) and employment. For the size of the territory, we typically consider the number of customers and the volume of generation and/or throughput. For breadth, we consider the number of sizable metropolitan areas served, the economic diversity and vitality in those metropolitan areas, and any concentration in a particular area or industry. In our assessment, we may consider various information sources. We also consider the mix of the utility's sales volumes among customer types, as well as the track record of volume sales and any notable payment patterns during economic cycles. For diversity of regulatory regimes, we typically look at the number of regulators and the percentages of revenues and utility assets that are under the purview of each. Issuers regulated in multiple jurisdictions typically receive the highest scores in the Market Position sub-factor. Where there is only one regulator, we make a differentiation of regimes perceived as having lower or higher volatility. Size of the utility is also considered, since a larger utility can better absorb the impact of temporary, or one-time, adverse events.

Issuers with multiple supportive regulatory jurisdictions, a balanced sales mix among residential, commercial, industrial and governmental customers in a large service territory with a robust and diverse economy generally receive a higher score for this sub-factor than issuers that lack these characteristics. Issuers with a small service territory economy that has a high dependence on one or two sectors , especially highly cyclical industries, generally receive lower scores for this sub-factor, as do issuers with meaningful exposure to economic dislocations caused by natural disasters.

For issuers that are vertically integrated utilities having a meaningful amount of generation, this sub-factor has a weighting of 5%. For electric transmission and distribution utilities without meaningful generation and for natural gas local distribution companies, this sub-factor has a weighting of 10%.

Generation and Fuel Diversity

We consider the fuel type of the issuer's generation and important power purchase agreements, the ability of the issuer to shift its generation and power purchases when there are changes in fuel prices, the extent to which the utility and its rate-payers are exposed to or insulated from changes in commodity prices, and exposure to challenged sources and threatened sources (see the explanations for how we generally characterize these generation sources in the table below).

A regulated utility's capacity mix may not in itself be an indication of fuel diversity or the ability to shift fuels, because utilities may keep old and inefficient plants (e.g., natural gas boilers) to serve peak load. For this reason, we do not incorporate set percentages reflecting an "ideal" or "sub-par" mix for capacity or even generation. In addition to looking at a utility's generation mix to evaluate fuel diversity, we consider the efficiency of the utility's plants, their placement on the regional dispatch curve, and the demonstrated ability/inability of the utility to shift its generation mix in accordance with changing commodity prices.

Issuers having a balanced mix of fuel types as well as low exposure to challenged and threatened sources of generation typically receive higher scores for this sub-factor. Issuers that have concentration in one or two sources of generation, especially if they are threatened or challenged sources, typically receive lower scores.

In assessing an issuer's extent of exposure to challenged and threatened sources , we consider not only the existence of those plants in the utility's portfolio, but also the relevant factors that determine the impact on the utility and on its rate-payers. For instance, an issuer that has a fairly high percentage of its generation from challenged sources could be assessed very differently if its peers experience the same magnitude of those issues than if its peers have no exposure to challenged or threatened sources. In assessing threatened sources, we consider a utility's progress in its plan to replace those sources, its reserve margin, the availability of purchased power capacity in the region, and the overall impact of the replacement plan on the issuer's rates relative to its peer group. We also consider the extent to which the utility's generation resources plan is aligned with the relevant government's fuel/energy policy and the economic support of the underlying economy (e.g., if the fuel or plants are important sources of jobs and tax revenue).

Factor: Financial Strength (40%)

Why it matters

Financial strength is necessary for a regulated electric and gas utility to attract capital at a reasonable cost in order to invest in its generation, transmission and distribution assets, so the utility can fulfill its service obligations at a reasonable cost to rate-payers and service debt. The financial strength of utilities, which are characterized by large investments in long-lived property, plant and equipment, includes the ability to service debt and provide a return to shareholders.

The financial statements of regulated electric and gas utilities have certain aspects that affect financial analysis, including disparate treatment of certain elements under US Generally Accepted Accounting Principles (GAAP) compared with International Financial Reporting Standards (IFRS). Regulatory accounting may permit utilities to defer certain costs (thereby creating regulatory assets) that a non-utility corporate entity would have to expense. For instance, a regulated utility may be able to defer a substantial portion of costs related to recovery from a storm based on the general regulatory framework for those expenses, even if the utility does not have a specific order to collect the expenses from rate-payers over a set period. A regulated utility may be able to accrue and defer a return on equity (in addition to capitalizing interest) for construction work in progress for an approved project based on the assumption that it will be able to collect that deferred equity return once the asset comes into service. Because of the disparate treatment of certain elements under the different accounting standards , we focus more on a utility's cash flow than on its reported net income.

Conversely, utilities may collect certain costs in rates well ahead of the time they must be paid (for instance, pension costs), thereby creating regulatory liabilities. Many of our metrics focus on Cash Flow from Operations Before Changes in Working Capital (CFO Pre-WC) because, unlike Funds from Operations (FFO), it captures the changes in long-term regulatory assets and liabilities.

However, under IFRS the two metrics are essentially the same. In general, we view changes in working capital as being less useful in the financial analysis of a utility because such changes are often seasonal (for example, power demand is generally greatest in the summer) or caused by changes in fuel prices that are typically a relatively automatic pass-through to the customer. We nonetheless consider the impact of working capital changes in analyzing a utility's liquidity (see the "Liquidity" section in "Other rating considerations").

CFO Pre-Working Capital Plus Interest Expense / Interest Expense

This metric is an indicator of a utility's ability to cover the cost of its borrowed capital.

CFO Pre-Working Capital / Debt

This metric provides important indications of the cash-generating ability of a utility compared to its total debt.

CFO Pre-Working Capital Minus Dividends / Debt

This ratio is an indicator for financial leverage as well as an indicator of the strength of a utility's cash flow after dividend payments are made. Dividend obligations of utilities are often substantial, quasi-permanent outflows that can affect the ability of a utility to cover its debt obligations, and this ratio can also provide insight into the financial policies of a utility or utility holding company. The higher the level of retained cash flow relative to a utility's debt, the more cash the utility has to support its capital expenditure program.

Debt / Book Capitalization

This ratio is a traditional measure of balance sheet leverage. Total capitalization includes minority interest and deferred taxes in addition to total debt, preferred stock, other hybrid securities, and common equity. Since the presence or absence of deferred taxes is a function of national tax policy, comparing utilities using this ratio may be more meaningful among utilities in the same country or in countries with similar tax policies. High debt levels in comparison to capitalization can indicate higher interest obligations, can limit the ability of a utility to raise additional financing if needed, and can lead to leverage covenant violations in bank credit facilities or other financing agreements. We also examine debt/capitalization ratios as defined in applicable covenants (which typically exclude deferred taxes from capitalization) relative to the covenant threshold level. A high ratio may result from a regulatory framework that does not permit a robust cushion of equity in the capital structure, or from a material write-off of an asset, which may not have affected current period cash flows but could affect future period cash flows relative to debt.

How we assess it for the scorecard

Scoring for this factor is based on four quantitative sub-factors: CFO Pre-Working Capital Plus Interest Expense/Interest Expense ; CFO Pre-Working Capital/Debt; CFO Pre-Working Capital Minus Dividends/Debt; and Debt/Book Capitalization.

There are two sets of thresholds for three of these ratios based on the level of the issuer's business risk – the Standard Grid and the Lower Business Risk (LBR) Grid. In our view, the different types of utility entities rated using this methodology have different levels of business risk.

Generation utilities and vertically integrated utilities generally have a higher level of business risk because they are engaged in power generation, so we apply the Standard Grid. We view power generation as the highest-risk component of the electric utility business, as generation plants are typically the most expensive part of a utility's infrastructure (representing potential asse t concentration risk) and are subject to the greatest risks in both construction and operation, including the risk that incurred costs will either not be recovered in rates or recovered with material delays.

Other types of utilities may have lower business risk, such that we consider that they are more appropriately assessed using the LBR Grid, due to factors that could include a generally greater transfer of risk to customers, very strong insulation from exposure to commodity price movements, good protection from volumetric risks, fairly limited capex needs and/or low exposure to storms, major accidents and natural disasters. For instance, we consider many US natural gas LDCs and certain US electric T&Ds , which lack generation but generally retain some procurement responsibilities for customers, as typically having a lower business risk profile than their vertically integrated peers. In cases of T&Ds that we do not view as having materially lower risk than their vertically integrated peers, we apply the Standard grid. This could result from a regulatory framework that exposes them to energy supply risk, large capital expenditures for required maintenance or upgrades, a heightened exposure to catastrophic climate events , increased regulatory scrutiny due to poor reliability or other considerations. The Standard Grid also applies to LDCs that in our view do not have materially lower risk; for instance, due to their ownership of high pressure pipes or older systems requiring extensive gas main replacements, where gas commodity costs are not fully recovered in a reasonably contemporaneous manner, where the LDC is not well-insulated from declining volumes, or if the jurisdiction of operation has aggressive policies to limit or reduce its business.

CFO Pre-Working Capital Plus Interest Expense / Interest Expense

The numerator is the sum of CFO Pre-WC and interest expense, and the denominator is interest expense.

CFO Pre-Working Capital / Debt

The numerator is CFO Pre-WC, and the denominator is total debt.

CFO Pre-Working Capital Minus Dividends / Debt

The numerator is CFO Pre-WC minus dividends, and the denominator is total debt.

Debt / Book Capitalization

The numerator is total debt, and the denominator is book capitalization.

Notching factor: Structural Subordination of Holding Companies

Our assessment of the Structural Subordination of Holding Companies may result in a downward adjustment to the preliminary outcome that results from the four weighted factors. We apply this adjustment in whole-notch increments, with a maximum of three alphanumeric notches down from the preliminary scorecard-indicated outcome to arrive at the scorecard-indicated outcome.

In cases where we consider that the credit weakness or credit strength represented by the notching factor is greater than the scorecard range, we incorporate this view into the rating, which may be different from the scorecard-indicated outcome. For a discussion of scorecard mechanics, please see the "Using the scorecard to arrive at a scorecard-indicated outcome" section.

Why it matters

Notching for the structural subordination of holding companies is important because in the regulated utility sector, barriers to movement of cash among companies in the corporate family can vary, depending on the regulatory framework. These barriers can lead to significantly different probabilities of default for holding companies (HoldCos) and operating subsidiaries (OpCos).

A typical utility company structure consists of a HoldCo that owns one or more OpCos. OpCos may be regulated utilities or non-utility companies. A HoldCo typically has no operations – its assets are mostly limited to its equity interests in subsidiaries, and potentially other investments in subsidiaries that are structured as equity, debt or even hybrid instruments.

Most HoldCos present their financial statements on a consolidated basis that blurs legal considerations about priority of creditors based on the legal structure of the family, and scorecard scoring is thus based on consolidated ratios. However, HoldCo creditors typically have a secondary claim on the group's cash flows and assets after OpCo creditors. We refer to this as structural subordination because it is the corporate legal structure, rather than specific subordination provisions, that causes creditors at each of the utility and non-utility subsidiaries to have a more direct claim on the cash flows and assets of their respective OpCo obligors. By contrast, the debt of the HoldCo is typically serviced primarily by dividends that are up-streamed by the OpCos. The HoldCo and OpCo may also have intercompany agreements, including tax sharing agreements, that can be another source of cash to the HoldCo. Under normal circumstances, these dividends are made from net income, after payment of the OpCo's interest and preferred dividends.

Structural subordination also affects loss given default. Under most default scenarios, an OpCo's creditors will be satisfied from the value residing at that OpCo before any of the OpCo's assets can be used to satisfy claims of the HoldCo's creditors. Actual priority in a default scenario will be determined by many factors, including the corporate and bankruptcy laws of the jurisdiction, the asset value of each OpCo, specific financing terms, inter-relationships among members of the family, etc. The prevalence of debt issuance at the OpCo level is another reason that structural subordination is usually a more serious concern in the utility sector than for investment-grade issuers in other non-financial corporate sectors.

The first four factors are primarily oriented to OpCos (and to some extent for HoldCos with minimal structural subordination; for example, there is no current structural subordination to debt at the operating company if all of the utility family's debt and preferred stock is issued at the HoldCo level, although there is structural subordination to other liabilities at the OpCo level). The additional risk from structural subordination is addressed via a notching adjustment to bring scorecard-indicated outcomes (on average) closer to the actual ratings of HoldCos.

How we assess it for the scorecard

Scorecard-indicated outcomes of holding companies may be notched down based on structural subordination. The risk factors and mitigants that impact structural subordination are varied and can be present in different combinations, such that a formulaic approach is not practical and case-by-case analyst judgment of the interaction of all pertinent factors that may increase or decrease its importance to the credit risk of an issuer is essential.

Some of the potentially pertinent features that could increase the extent or impact of structural subordination include the following:

» Regulatory or other barriers to cash movement from OpCos to HoldCo

» Specific ring-fencing provisions

» Strict financial covenants at the OpCo level

» Higher leverage at the HoldCo level While higher leverage at the HoldCo does not increase structural subordination per se, it exacerbates the impact of any structural subordination that exists.

» Significant dividend limitations at an important OpCo

» HoldCo exposure to subsidiaries with high business risk or volatile cash flows

» Strained liquidity at the HoldCo level

» The group's investment program is primarily in businesses that are higher risk or new to the group

Some of the potentially mitigating features that could decrease the extent and/or impact of structural subordination include the following:

» Substantial diversity in cash flows from a variety of utility OpCos

» Meaningful dividends to HoldCo from unlevered utility OpCos

» Dependable, meaningful dividends to HoldCo from non-utility OpCos

» The group's investment program is primarily in strong utility businesses

» Inter-company guarantees - however, in many jurisdictions the value of an upstream guarantee may be limited by certain factors, including by the value that the OpCo received in exchange for granting the guarantee

Notching for structural subordination within the scorecard may range from 0 to three downward notches. Instances of extreme structural subordination are relatively rare, so the scorecard convention does not accommodate wider differences, although in the instances where we believe it is present, actual ratings do reflect the full impact of structural subordination.

A related issue is the relationship of ratings within a utility family with multiple operating companies, and sometimes intermediate holding companies. Some of the key issues are the same, such as the relative amounts of debt at the holding company level compared to the operating company level (or at one OpCo relative to another), and the extent to which operating companies have credit insulation due to regulation or other protective factors. Appendix A has additional insights on ratings within a utility family.

Other considerations

Ratings may reflect consideration of additional factors that are not in the scorecard, usually because the factor's credit importance varies widely among the issuers in the sector or because the factor may be important only under certain circumstances or for a subset of issuers. Such factors can include financial controls and the quality of financial reporting; corporate legal structure; the quality and experience of management; assessments of corporate governance, as well as environmental and social considerations; exposure to uncertain licensing regimes; and possible government interference in some countries. Regulatory, litigation, liquidity, technology and reputational risk, as well as changes to consumer and business spending patterns, competitor strategies and macroeconomic trends can also affect ratings.

The following are examples of additional considerations that may be reflected in our ratings and that may cause ratings to be different from scorecard-indicated outcomes.

Environmental, social and governance considerations

Where environmental, social and governance (ESG) issues are meaningful for credit profiles, we incorporate them into our ratings analysis in a variety of ways in the application of our sector-specific methodologies. As one part of our overall credit analysis, we consider how ESG risks could affect the qualitative and quantitative factors and sub-factors in the scorecard.

Even where ESG considerations do not affect the measures in the scorecard, or where they cannot be quantified, we incorporate them into our overall analysis of credit drivers that are meaningful to the rating. As a result, we may incorporate these ESG risks qualitatively outside of the scorecard. As part of our ratings analysis, we may establish Issuer Profile Scores (IPSs), which indicate our opinion of the extent to which a given issuer is exposed to E, S and G risks (incorporating ESG-specific mitigants) or benefits from its exposure to E, S or G. The IPSs are inputs to credit ratings. For more information, please see our methodology that describes our general principles for assessing ESG risks.[2]

Increasing requirements and efforts to reduce greenhouse gas emissions (known as carbon transition) may lead to higher costs for many regulated electric and gas utilities. In addition, the ownership or operation of assets that may become “stranded” (i.e., assets that become unprofitable due to carbon transition) may indicate higher risk.

We also consider the impact of decarbonization efforts on the electrification of heating, transportation and industry. In our assessment of the net impact of decarbonization on issuers in this sector, we consider the share of generation in the business mix, the location of generation assets and the technology employed and exposure to natural gas transportation and distribution. Pressure for issuers to decarbonize and implementation timelines may be affected by regulation, policies and the potential for renewable energy to displace carbon intensive generation in each market. In general, carbon-intensive generation assets such as coal-fired plants are most exposed to carbon transition risk, followed by gas-fired plants. Renewable energy projects and other low-carbon power generation assets are well-positioned to benefit from carbon transition. Our assessment of the net impact of decarbonization also takes into account the central role of electricity networks in decarbonization efforts. In contrast, decarbonization may reduce demand for gas networks in many markets, particularly for residential heating supply.

We also consider waste and pollution risks, including emissions of non-carbon air pollutants, which can also impose significant compliance costs on thermal generators, as well as long-term storage costs for nuclear generators, particularly in regions where the generators are fully or partially responsible for those costs. Issuers in this sector are also exposed to physical risks associated with climate change, including damage to electricity networks caused by storms or wildfires. For example, operators of hydro generators and water-cooled thermal plants may experience lower output during periods of low rainfall. Conversely, generators in hydro-dominated markets may be exposed to lower electricity prices during unusually wet periods. Issuers in this sector are also exposed to weather-related disasters and other catastrophic events, including nuclear accidents and natural gas pipeline explosions, as well as costs to enhance climate resilience or remediate environmental damage.

Social issues are often important considerations. Regulated electric and gas utilities are highly exposed to socially driven policy agendas resulting from public concern about affordable energy, energy security and the environment, often enabled by the direct involvement of governments and regulators in setting energy policy. In addition to health and safety risks associated with maintaining heavy equipment and machinery, the sector is also prone to event risks with social risk repercussions, such as nuclear and hydropower disasters and gas pipeline explosions.

Among the areas of focus in corporate governance are audit committee financial expertise, the incentives created by executive compensation packages, related-party transactions, interactions with outside auditors, and ownership structure.

Liquidity

Liquidity is an important rating consideration for all electric and gas utilities, and extremely weak liquidity can heavily affect ratings in many cases. However, the relative strength or weakness of liquidity may not have a substantial impact in discriminating between two issuers with an otherwise similar credit profile. Liquidity can be particularly important where issuers have large short-term demands on liquidity, for example in highly seasonal operating environments where working capital needs must be considered. We form an opinion on likely near-term liquidity requirements from the perspective of both sources and uses of cash. For more information on our approach, please see our liquidity cross-sector methodology.[3]

Liquidity encompasses a company's ability to generate cash from internal sources as well as the availability of external sources of financing to supplement these internal sources. Liquidity and access to financing are of particular importance in this sector. Utility assets can often have a very long useful life- 30, 40 or even 60 years is not uncommon, as well as high costs. Partly as a result of construction cycles, the utility sector has experienced prolonged periods of negative free cash flow – essentially, the sum of its dividends and its capital expenditures for maintenance and growth of its infrastructure frequently exceeds cash from operations, such that a portion of capital expenditures must routinely be financed by debt or equity. Utilities are among the largest debt issuers in the corporate universe and typically require consistent access to the capital markets to assure adequate sources of funding and to maintain financial flexibility. Substantial portions of capital expenditures are non-discretionary (for example, maintenance, adding customers to the network, or meeting environmental mandates); however, utilities have been swift to cut or defer discretionary spending during economic downturns. Dividends represent a quasi-permanent outlay, because utilities typically only rarely cut their dividends. Liquidity is also important to meet maturing obligations, which can often be large,, and to meet collateral calls under any hedging agreements.

Due to the importance of liquidity, incorporating it as a factor with a fixed weighting in the scorecard would suggest an importance level that is often far different from the actual weight in the rating. In normal circumstances, most companies in the sector have good access to liquidity. The industry generally requires, and for the most part has, large, syndicated, multi-year committed credit facilities. In addition, utilities have demonstrated strong access to capital markets , even under difficult conditions. As a result, liquidity generally has not been an issue for most utilities, and a utility with very strong liquidity may not warrant a rating distinction compared to a utility with strong liquidity. However, when there is weakness in liquidity or liquidity management, it can be the dominant consideration for ratings.

Our assessment of liquidity for regulated utilities involves an analysis of total sources and uses of cash over the next 12 months or more, as is done for all corporates. Using our financial projections of the utility and our analysis of its available sources of liquidity (including an assessment of the quality and reliability of alternate liquidity such as committed credit facilities), we consider how its projected sources of cash (cash from operations, cash on hand and existing committed multi-year credit facilities) compare to its projected uses (including all or most capital expenditures, dividends, maturities of short and long-term debt, our projection of potential liquidity calls on financial hedges, and important issuer-specific items such as special tax payments). We assume no access to capital markets or additional liquidity sources, no renewal of existing credit facilities, and no cut to dividends. We assess a company's liquidity profile under this scenario, its ability to make adjustments to improve its liquidity position, and any dependence on liquidity sources with lower quality and reliability.

Management strategy

The quality of management is an important factor supporting the credit strength of a regulated utility or utility holding company. Assessing the execution of business plans over time can be helpful in assessing management's business strategies, policies, and philosophies and in evaluating management performance relative to performance of competitors and our projections. Management's track record of adhering to stated plans, commitments and guidelines provides insight into management's likely future performance, including in stressed situations.

We assess financial policy (including dividend policy and planned capital expenditures) and how management balances the potentially competing interests of shareholders, fixed income investors and other stakeholders. Dividends and discretionary capital expenditures are the two primary components over which management has the greatest control in the short term. For holding companies, we consider the extent to which management stretches its payout ratio (through aggressive increases or delays in needed decreases) in order to satisfy common shareholders. For a utility that is a subsidiary of a parent company with several utility subsidiaries, dividends to the parent may be more volatile depending on the cash generation and cash needs of that utility, because parents typically want to assure that each utility maintains the regulatory debt/equity ratio on which its rates have been set. The effect is that utility subsidiaries typically pay higher dividends when they have lower capital needs and lower dividends when they have higher capital expenditures or other cash needs. Any dividend policy that cuts into the regulatory debt/equity ratio is a material credit negative.

Size

Size can be a very important factor in our assessment of certain risks that affect ratings in this sector, including exposure to natural disasters, customer concentration, primarily to industrial customers in a single sector, and construction risks associated with large projects. While the scorecard incorporates the first two of these risks into the Diversification factor, for some issuers these considerations may be sufficiently important that the rating reflects a greater weight for these risks. Construction projects typically carry the risk of cost overruns and delays, but these risks are materially heightened for projects that are very large relative to the size of the utility.

While size brings certain economies of scale that can somewhat affect the utility's cost structure and competitiveness, rates are more heavily affected by costs related to fuel and fixed assets. Smaller utilities have sometimes been better able to focus their attention on meeting the expectations of a single regulator than their multi-state peers.

Interaction of utility ratings with government policies and sovereign ratings

Government actions can have a credit impact on regulated utilities directly through rate regulation, and indirectly through energy, environmental and tax policies. Government actions affect fuel prices, the mix of generating plants, the certainty and timing of revenues and costs, and the likelihood that regulated utilities will experience financial stress. While our evolving view of the impact of such policies and the general economic and financial climate is reflected in the ratings of each utility, some considerations do not lend themselves to incorporation in a simple scorecard.[4]

Non-utility operations

In some cases, regulated utilities have non-utility operations that are segments within the utility company, compared with the more common practice of housing such operations in one or more separate affiliates. In general, we evaluate the other businesses that are material in accordance with the appropriate methodology, and the rating on the regulated electric and gas utility reflects considerations from such methodologies. There may be analytical limitations in evaluating the utility and non-utility businesses where segment financial results are not fully available , and these may be addressed through estimation based on available information. Diversified non-utility operations generally increase the business risk profile of a regulated utility, which is a relatively low-risk business . To reflect this heightened risk, we may assign ratings that are lower than scorecard-indicated outcomes for companies with diversified operations.

Event risk

We also recognize the possibility that an unexpected event could cause a sudden and sharp decline in a utility's fundamental creditworthiness, which may cause actual ratings to be lower than the scorecard-indicated outcome. Event risks — which are varied and can range from leveraged recapitalizations to sudden regulatory changes or liabilities from an accident — can overwhelm even a stable, well-capitalized utility. Some other types of event risks include M&A, asset sales, spinoffs, shareholder distributions, litigation, pandemics, significant cybercrime events and geopolitical conflicts.

Financial controls

We rely on the accuracy of audited financial statements to assign and monitor ratings in this sector. The quality of financial statements may be influenced by internal controls, including the proper tone at the top, centralized operations, and consistency in accounting policies and procedures. Auditors' reports on the effectiveness of internal controls, auditors' comments in financial reports and unusual restatements of financial statements or delays in regulatory filings may indicate weaknesses in internal controls.

Parental support

Ownership can provide ratings lift for a particular company in the regulated electric and gas utilities sector if it is owned by a highly rated owner(s) and is viewed to be of strategic importance to those owners. In our analysis of parental support, we consider whether the parent has the financial capacity and strategic incentives to provide support to the issuer in times of stress or financial need (e.g., a major capital investment or advantaged operating agreement), or has already done so in the past. Conversely, if the parent puts a high dividend burden on the issuer, which in turn reduces its flexibility, the ratings would reflect this risk.

Government-related issuers may receive ratings uplift due to expected government support. However, for certain issuers, government ownership can have a negative impact on the underlying Baseline Credit Assessment.[5] For example, price controls, onerous taxation and high distributions can have a negative effect on an issuer's underlying credit profile.

Other institutional support

In some countries, large corporate issuers have received government or banking support in the event of financial difficulties because of their overall importance to the functioning of the economy. In Japan, our corporate ratings consider the support that has operated there for large and systemically important organizations. Over the years, this has resulted in lower levels of default than might otherwise have occurred. Our approach considers whether the presence of group and banking relationships may provide support when systemically important companies encounter significant financial stress.

Using the scorecard to arrive at a scorecard-indicated outcome

1. Measurement or estimation of factors in the scorecard

In the "Discussion of the scorecard factors" section, we explain our analytical approach for scoring each scorecard factor or sub-factor, and we describe why they are meaningful as credit indicators. When a factor comprises sub-factors, we score at the sub-factor level. Some factors do not have sub-factors, in which case we score at the factor level.

The information used in assessing the sub-factors is generally found in or calculated from information in the company's financial statements or regulatory filings, derived from other observations or estimated by Moody's analysts. We may also incorporate non-public information.

Our ratings are forward-looking and reflect our expectations for future financial and operating performance. However, historical results are helpful in understanding patterns and trends of a company's performance, as well as for peer comparisons. Financial metrics, unless otherwise indicated, are typically calculated based on an average of the most recent three years of reported results. However, the factors in the scorecard can be assessed using various time periods. For example, rating committees may find it analytically useful to examine both historical and expected future performance for periods of several years or more.

Given the long-term nature of utility assets and the often uneven nature of their capital expenditures, we consider a utility's historical financial performance as well as its prospective future performance. Multi-year periods are usually more representative of credit quality because utilities can experience swings in cash flows from one-time events, including such items as rate refunds, storm cost deferrals that create a regulatory asset, or securitization proceeds that reduce a regulatory asset. Nonetheless, we also look at trends in metrics for individual periods, which may influence our view of future performance and ratings.

All of the quantitative credit metrics incorporate our standard adjustments[6] to income statement, cash flow statement and balance sheet amounts for items such as restructuring, impairment, off-balance sheet accounts, receivable securitization programs, under-funded pension obligations, and recurring operating leases. We may also make other analytical adjustments that are specific to a particular issuer.

2. Mapping scorecard factors to a numeric score

After estimating or calculating each factor or sub-factor, each outcome is mapped to a broad Moody's rating category (Aaa, Aa, A, Baa, Ba, B, or Caa, also called alpha categories).

Qualitative factors are scored based on the description by broad rating category in the scorecard. The numeric value of each alpha score is based on the scale below.

Exhibit 3
Numeric equivalents for factor and sub-factor scores

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
1	3	6	9	12	15	18	20

Source: Moody's Ratings

3. Determining the overall scorecard-indicated outcome

The numeric score for each weighted sub-factor (or each factor, when the factor has no sub-factors) is multiplied by the weight for that sub-factor (or factor), with the results then summed to produce an aggregate numeric score before notching factors (the preliminary outcome). We then consider whether the preliminary outcome that results from the four weighted factors should be notched downward in order to arrive at an aggregate numeric score after notching factors, based on Holding Company Structural

Subordination. Numerically, a downward notch adds 1 to the score, and an upward notch subtracts 1 from the score. In aggregate, the notching factor can result in a total of up to three downward notches from the preliminary outcome to arrive at the scorecard-indicated outcome.

The aggregate numeric score before and after notching factors is mapped to an alphanumeric]. For example, an issuer with an aggregate numeric score before notching factors of 11.7 would have a Ba2 preliminary outcome, based on the ranges in the table below. If the combined notching factors totaled two downward notches, the aggregate numeric score after notching factors would be 13.7, which would map to a B1 scorecard-indicated outcome.

Exhibit 4
Scorecard-indicated outcome

Aggregate numeric score	Scorecard-indicated outcome
x < 1.5	Aaa
1.5 ≤ x < 2.5	Aa1
2.5 ≤ x < 3.5	Aa2
3.5 ≤ x < 4.5	Aa3
4.5 ≤ x < 5.5	A1
5.5 ≤ x < 6.5	A2
6.5 ≤ x < 7.5	A3
7.5 ≤ x < 8.5	Baa1
8.5 ≤ x < 9.5	Baa2
9.5 ≤ x < 10.5	Baa3
10.5 ≤ x < 11.5	Ba1
11.5 ≤ x < 12.5	Ba2
12.5 ≤ x < 13.5	Ba3
13.5 ≤ x < 14.5	B1
14.5 ≤ x < 15.5	B2
15.5 ≤ x < 16.5	B3
16.5 ≤ x < 17.5	Caa1
17.5 ≤ x < 18.5	Caa2
18.5 ≤ x < 19.5	Caa3
x ≥ 19.5	Ca

Source: Moody's Ratings

In general, the scorecard-indicated outcome is oriented to the corporate family rating (CFR) for speculative-grade issuers and to the senior unsecured rating for investment-grade issuers. For issuers that benefit from rating uplift from parental support, government ownership or other institutional support, we consider the underlying credit strength or Baseline Credit Assessment for comparison to the scorecard-indicated outcome. For an explanation of the Baseline Credit Assessment, please refer to *Rating Symbols and Definitions* and to our cross-sector methodology for government-related issuers.[7]

Assigning issuer-level and instrument-level ratings

After considering the scorecard-indicated outcome, other considerations and relevant cross-sector methodologies, we typically assign a corporate family rating (CFR) to speculative-grade issuers or a senior unsecured rating for investment-grade issuers. For issuers that benefit from rating uplift from government ownership, we may assign a Baseline Credit Assessment.[8]

Individual debt instrument ratings may be notched up or down from the CFR or the senior unsecured rating to reflect our assessment of differences in expected loss related to an instrument's seniority level and collateral. The documents that provide broad guidance for such notching decisions are the rating methodology on loss given default for speculative-grade non-financial companies, the methodology for notching corporate instrument ratings based on differences in security and priority of claim, and the methodology for assigning short-term ratings.[9]

Key rating assumptions

For information about key rating assumptions that apply to methodologies generally, please see *Rating Symbols and Definitions*.[10]

Limitations

In the preceding sections, we have discussed the scorecard factors and many of the other considerations that may be important in assigning ratings. In this section, we discuss limitations that pertain to the scorecard and to the overall rating methodology.

Limitations of the scorecard

There are various reasons why scorecard-indicated outcomes may not map closely to actual ratings.

The scorecard in this rating methodology is a relatively simple tool that can be used in most cases to approximate credit profiles of issuers in this sector and to explain, in summary form, many of the factors that are generally most important in assigning ratings to these issuers. Credit loss and recovery considerations, which are typically more important as an issuer gets closer to default, may not be fully captured in the scorecard. The scorecard is also limited by its upper and lower bounds, causing scorecard-indicated outcomes to be less likely to align with ratings for issuers at the upper and lower ends of the rating scale.

The weights for each factor and sub-factor in the scorecard represent an approximation of their importance for rating decisions across the sector, but the actual importance of a particular factor may vary substantially based on an individual company's circumstances.

Factors that are outside the scorecard, including those discussed above in the “Other considerations” section, may be important for ratings, and their relative importance may also vary from company to company. In addition, certain broad methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector.[11] Examples of such considerations include the following: how sovereign credit quality affects non-sovereign issuers, the assessment of credit support from other entities, the relative ranking of different classes of debt and hybrid securities, and the assignment of short-term ratings.

We may use the scorecard over various historical or forward-looking time periods. Furthermore, in our ratings we often incorporate directional views of risks and mitigants in a qualitative way.

General limitations of the methodology

This methodology document does not include an exhaustive description of all factors that we may consider in assigning ratings in this sector. Companies in the sector may face new risks or new combinations of risks, and they may develop new strategies to mitigate risk. We seek to incorporate all material credit considerations in ratings and to take the most forward-looking perspective that visibility into these risks and mitigants permits.

Ratings reflect our expectations for an issuer's future performance; however, as the forward horizon lengthens, uncertainty increases and the utility of precise estimates, as scorecard inputs or in other considerations, typically diminishes. Our forward-looking opinions are based on assumptions that may prove, in hindsight, to have been incorrect. Reasons for this could include unanticipated changes in any of the following: the macroeconomic environment, general financial market conditions, industry competition, disruptive technology, or regulatory and legal actions. In any case, predicting the future is subject to substantial uncertainty.

Appendix A: Approach to ratings within a utility family

Typical composition of a utility family

A typical utility company structure consists of a HoldCo that owns one or more OpCos). OpCos may be regulated utilities or non-utility companies. Financing of these entities varies by region, in part due to the regulatory framework. A HoldCo typically has no operations – its assets are mostly limited to its equity interests in subsidiaries, and potentially other investments in subsidiaries or minority interests in other companies. However, in certain cases there may be material operations at the HoldCo level. Financing can occur primarily at the OpCo level, primarily at the HoldCo level, or at both HoldCo and OpCos in varying proportions. When a HoldCo has multiple utility OpCos, they will often be located in different regulatory jurisdictions. A HoldCo may have both levered and unlevered OpCos.

General approach to a utility family

In our analysis, we generally consider the stand-alone credit profile of an OpCo and the credit profile of its ultimate parent HoldCo (and any intermediate HoldCos), as well as the profile of the family as a whole, while acknowledging that these elements can have cross-family credit implications in varying degrees, principally based on the regulatory framework of the OpCos and the financing model (which has often developed in response to the regulatory framework).

In addition to considering individual OpCos under this (or another applicable) methodology, we typically[12] approach a HoldCo rating by assessing the qualitative and quantitative factors in this methodology for the consolidated entity and each of its utility subsidiaries. Ratings of individual entities in the issuer family may be pulled up or down based on the interrelationships among the companies in the family and their relative credit strength.

In considering how closely aligned or how differentiated ratings should be among members of a utility family, we assess a variety of factors, including:

» Regulatory or other barriers to cash movement among OpCos and from OpCos to HoldCo

» Differentiation of the regulatory frameworks of the various OpCos

» Specific ring-fencing provisions at particular OpCos

» Financing arrangements – for instance, each OpCo may have its own financing arrangements, or the sole liquidity facility may be at the parent; there may be a liquidity pool among certain but not all members of the family; certain members of the family may be better able to withstand a temporary hiatus of external liquidity or access to capital markets

» Financial covenants and the extent to which an Event of Default by one OpCo limits availability of liquidity to another member of the family

» The extent to which higher leverage at one entity increases default risk for other members of the family

» An entity's exposure to or insulation from an affiliate with high business risk

» Structural features or other limitations in financing agreements that restrict movements of funds, investments, provision of guarantees or collateral, etc.

» The relative size and financial significance of any particular OpCo to the HoldCo and the family

Our approach to a Hybrid HoldCo depends in part on the importance of its non-utility operations and the availability of information on individual businesses. If the businesses are material and their individual results are fully detailed in financial disclosures, we may be able to assess each material business individually by reference to the relevant Moody's methodologies to arrive at a composite assessment for the combined businesses.[13] If non-utility operations are material but are not available in financial disclosures, we may look at the consolidated entity under more than one methodology. When non-utility operations are less material but could still impact the overall credit profile, the difference in business risks and our estimation of their impact on financial performance will be qualitatively incorporated in the rating.

Higher barriers to cash movement with financing predominantly at the OpCos

Where higher barriers to cash movement exist at an OpCo or OpCos due to the regulatory framework or debt structural features, ratings among family members are likely to be more differentiated. The degree of separateness may be greater or smaller and is assessed on a case-by-case basis, because situational considerations are important.

One area we consider is financing arrangements. For instance, there will tend to be greater differentiation if each member of a family has its own bank credit facilities and difficulties experienced by one entity would not trigger events of default for other entities. While the existence of a money pool might appear to reduce separateness between the participants, there may be regulatory barriers within money pools that preserve separateness. For instance, non-utility entities may have access to the pool only as a borrower, only as a lender, and even the utility entities may have regulatory limits on their borrowings from the pool or their credit exposures to other pool members. If the only source of external liquidity for a money pool is borrowings by the HoldCo under its bank credit facilities, there would be less separateness, especially if the utilities were expected to depend on that liquidity source. However, the ability of an OpCo to finance itself by accessing capital markets must also be considered. Inter-company tax agreements can also have an impact on our view of how separate the risks of default are.

For a HoldCo, the greater the regulatory, economic, and geographic diversity of its OpCos, the greater its potential separation from the default probability of any individual subsidiary. Conversely, if a HoldCo's actions have made it clear that the HoldCo will provide support for an OpCo encountering some financial stress (for instance, due to delays and/or cost over-runs on a major construction project), we would be likely to perceive less separateness.

Even where high barriers to cash movement exist, onerous leverage at a parent company may not only give rise to greater notching for structural subordination at the parent, it may also pressure an OpCo's rating, especially when there is a clear dependence on an OpCo's cash flow to service parent debt.

While most of the regulatory barriers to cash movement are very real, they are not absolute. Furthermore, while it is not usually in the interest of an insolvent parent or its creditors to bring an operating utility into a bankruptcy proceeding, such an occurrence is not impossible.

The greatest separateness occurs where strong regulatory insulation is supplemented by effective ring- fencing provisions that fully separate the management and operations of the OpCo from the rest of the family and limit the parent's ability to cause the OpCo to commence bankruptcy proceedings as well as limiting dividends and cash transfers. Typically, most entities in US utility families (including HoldCos and OpCos) are rated within 3 notches of each other. However, it is possible for the HoldCo and OpCos in a family to have much wider notching due to the combination of regulatory imperatives and strong ring-fencing that includes a significant minority shareholder who must agree to important corporate decisions, including a voluntary bankruptcy filing.

Lower barriers to cash movement with financing predominantly at the OpCos

Our approach to rating issuers within a family where there are lower regulatory barriers to movement of cash from OpCos to HoldCos places greater emphasis on the credit profile of the consolidated group. Individual OpCos are considered based on their individual characteristics and their importance to the family, and their assigned ratings are typically banded closely around the consolidated credit profile of the group due to the expectation that cash will transit relatively freely among family entities.

Some utilities may have OpCos in jurisdictions where cash movement among certain family members is more restricted by the regulatory framework, while cash movement from and/or among OpCos in other jurisdictions is less restricted. In these situations, OpCos with more restrictions may vary more widely from the consolidated credit profile while those with fewer restrictions may be more tightly banded around the other entities in the corporate family group.

Appendix B: Regional and other considerations

Notching considerations for US first mortgage bonds

In most regions, our approach to notching between different debt classes of the same regulated utility issuer follows the guidance on notching corporate instrument ratings based on differences in security and priority of claim, including a one notch differential between senior secured and senior unsecured debt.[14] However, in most cases we have two notches between the first mortgage bonds and senior unsecured debt of regulated electric and gas utilities in the US. Wider notching differentials between debt classes may also be appropriate in speculative-grade issuers.[15]

First mortgage bond holders in the US generally benefit from a first lien on most of the fixed assets used to provide utility service, including such assets as generating stations, transmission lines, distribution lines, switching stations and substations, and gas distribution facilities, as well as a lien on franchise agreements. In our view, the critical nature of these assets to the issuers and to the communities they serve has been a major factor that has led to very high recovery rates for this class of debt in situations of default, thereby justifying a two-notch uplift. The combination of the breadth of assets pledged and the bankruptcy-tested recovery experience has been unique to the US.

In some cases, there is only a one-notch differential between US first mortgage bonds and the senior unsecured rating. For instance, this is likely when the pledged property is not considered critical infrastructure for the region, or if the mortgage is materially weakened by carve-outs, lien releases or similar creditor-unfriendly terms.

Securitization

The use of securitization, a financing technique utilizing a discrete revenue stream (typically related to recovery of specifically defined expenses) that is dedicated to servicing specific securitization debt, has primarily been used in the US, where it has been pervasive in the past. The first generation of securitization bonds were primarily related to recovery of the negative difference between the market value of utilities' generation assets and their book value when certain states switched to competitive electric supply markets and utilities sold their generation (so-called stranded costs). This technique was then used for significant storm costs (especially hurricanes) and was eventually broadened to include environmental related expenditures, deferred fuel costs, or even deferred miscellaneous expenses. In its simplest form, a securitization isolates and dedicates a stream of cash flow into a separate special purpose entity (SPE). The SPE uses that stream of revenue and cash flow to provide annual debt service for the securitized debt instrument. Securitization is typically underpinned by specific legislation to segregate the securitization revenues from the utility's revenues to assure their continued collection, and the details of the enabling legislation may vary from state to state. The utility benefits from the securitization because it receives an immediate source of cash (although it gives up the opportunity to earn a return on the corresponding asset), and ratepayers benefit because the cost of the securitized debt is lower than the utility's cost of debt and much lower than its all-in cost of capital, which reduces the revenue requirement associated with the cost recovery.

In the presentation of US securitization debt in published financial ratios, we make our own assessment of the appropriate credit representation but in most cases follow the accounting in audited statements under US Generally Accepted Accounting Principles (GAAP), which in turn considers the terms of enabling legislation. As a result, accounting treatment may vary. In most states, utilities have been required to consolidate securitization debt under GAAP, even though it is technically non-recourse.

In general, we view securitization debt of utilities as being on-credit debt, in part because the rates associated with it reduce the utility's headroom to increase rates for other purposes while keeping all-in rates affordable to customers. Thus, where accounting treatment is off balance sheet, we adjust the company's ratios by including the securitization debt and related revenues for our analysis. Where the securitized debt is on balance sheet, our credit analysis focuses on the ratios that exclude securitization debt and related revenues. Since securitization debt amortizes mortgage-style, including it makes ratios look worse in early years (when most of the revenue collected goes to pay interest) and better in later years (when most of the revenue collected goes to pay principal).

Appendix C: Treatment of Power Purchase Agreements ("PPAs")

Although many utilities own and operate power stations, some have entered into PPAs to source electricity from third parties to satisfy retail demand. The motivation for these PPAs may be one or more of the following: to outsource operating risks to parties more skilled in power station operation, to provide certainty of supply, to reduce balance sheet debt, to fix the cost of power, or to comply with regulatory mandates regarding power sourcing, including renewable portfolio standards. While we regard PPAs that reduce operating or financial risk as a credit positive, some aspects of PPAs may negatively affect the credit of utilities. The most conservative treatment would be to treat a PPA as a debt obligation of the utility as, by paying the capacity charge, the utility is effectively providing the funds to service the debt associated with the power station. At the other end of the continuum, the financial obligations of the utility could also be regarded as an ongoing operating cost, with no long-term capital component recognized.

Under most PPAs, a utility is obliged to pay a capacity charge to the power station owner (which may be another utility or an Independent Power Producer – IPP); this charge typically covers a portion of the IPP's fixed costs in relation to the power available to the utility. These fixed payments usually help to cover the IPP's debt service and are made irrespective of whether the utility calls on the IPP to generate and deliver power. When the utility requires generation, a further energy charge, to cover the variable costs of the IPP, will also typically be paid by the utility. Some other similar arrangements are characterized as tolling agreements, or long-term supply contracts, but most have similar features to PPAs and thus we analyze them as PPAs.

PPAs are recognized qualitatively to be a future use of cash whether or not they are treated as debt-like obligations in financial ratios

The starting point of our analysis is the issuer's audited financial statements – we consider whether the utility's accountants determine that the PPA should be treated as a debt equivalent, a capitalized lease, an operating lease, or in some other manner. PPAs have a wide variety of operational and financial terms, and it is our understanding that accountants are required to have a very granular view into the particular contractual arrangements in order to account for these PPAs in compliance with applicable accounting rules and standards. However, accounting treatment for PPAs may not be entirely consistent across US GAAP, IFRS or other accounting frameworks. In addition, we may consider that factors not incorporated into the accounting treatment may be relevant (which may include the scale of PPA payments, their regulatory treatment including cost recovery mechanisms, or other factors that create financial or operational risk for the utility that is greater, in our estimation, than the benefits received). When the accounting treatment of a PPA is a debt or lease equivalent (such that it is reported on the balance sheet, or disclosed as an operating lease and thus included in our adjusted debt calculation), we generally do not make adjustments to remove the PPA from the balance sheet.

However, in relevant circumstances we consider making adjustments that impute a debt equivalent to PPAs that are off-balance sheet for accounting purposes.

Regardless of whether we consider that a PPA warrants or does not warrant treatment as a debt obligation, we assess the totality of the impact of the PPA on the issuer's probability of default. Costs of a PPA that cannot be recovered in retail rates create material risk, especially if they also cannot be recovered through market sales of power.

Additional considerations for PPAs

PPAs have a wide variety of financial and regulatory characteristics, and we may treat each particular circumstance differently. Factors which determine where on the continuum we treat a particular PPA include the following:

» **Risk management:** An overarching principle is that PPAs have normally been used by utilities as a risk management tool and we recognize that this is the fundamental reason for their existence. Thus, we will not automatically penalize utilities for entering into contracts for the purpose of reducing risk associated with power price and availability. Rather, we will look at the aggregate commercial position, evaluating the risk to a utility's purchase and supply obligations. In addition, PPAs are similar to other long-term supply contracts used by other industries and their treatment should not therefore be fundamentally different from that of other contracts of a similar nature.

- **Pass-through capability:** Some utilities have the ability to pass through the cost of purchasing power under PPAs to their customers. As a result, the utility takes no risk that the cost of power is greater than the retail price it will receive. Accordingly we regard these PPA obligations as operating costs with no long-term debt-like attributes. PPAs with no pass-through ability have a greater risk profile for utilities. In some markets, the ability to pass through costs of a PPA is enshrined in the regulatory framework, and in others can be dictated by market dynamics. As a market becomes more competitive or if regulatory support for cost recovery deteriorates, the ability to pass through costs may decrease and, as circumstances change, our treatment of PPA obligations will alter accordingly.
- **Price considerations:** The price of power paid by a utility under a PPA can be substantially above or below the market price of electricity. A below-market price will motivate the utility to purchase power from the IPP in excess of its retail requirements, and to sell excess electricity in the spot market. This can be a significant source of cash flow for some utilities. On the other hand, utilities that are compelled to pay capacity payments to IPPs when they have no demand for the power or at an above-market price may suffer a financial burden if they do not get full recovery in retail rates. We will focus particularly on PPAs that have mark-to-market losses, which typically indicates that they have a material impact on the utility's cash flow.
- **Excess reserve capacity:** In some jurisdictions, there is substantial reserve capacity and thus a significant probability that the electricity available to a utility under PPAs will not be required by the market. This increases the risk to the utility that capacity payments will need to be made when there is no demand for the power. We may determine that all of a utility's PPAs represent excess capacity, or that a portion of PPAs are needed for the utility's supply obligations plus a normal reserve margin, while the remaining portion represents excess capacity. In the latter case, we may impute debt to specific PPAs that are excess or take a proportional approach to all of the utility's PPAs.
- **Risk-sharing:** Utilities that own power plants bear the associated operational, fuel procurement and other risks. These must be balanced against the financial and liquidity risk of contracting for the purchase of power under a PPA. We will examine on a case-by case basis the relative credit risk associated with PPAs in comparison to plant ownership.
- **Purchase requirements:** Some PPAs are structured with either options or requirements to purchase the asset at the end of the PPA term. If the utility has an economically meaningful requirement to purchase, we would most likely consider it to be a debt obligation. In most such cases, the obligation would already receive on-balance sheet treatment under relevant accounting standards.
- **Default provisions:** In most cases, the remedies for default under a PPA do not include acceleration of amounts due, and in many cases PPAs would not be considered as debt in a bankruptcy scenario and could potentially be cancelled. Thus, PPAs may not materially increase Loss Given Default for the utility. In addition, PPAs are not typically considered debt for cross-default provisions under a utility's debt and liquidity arrangements. However, the existence of non-standard default provisions that are debt-like would have a large impact on our treatment of a PPA. In addition, payments due under PPAs are senior unsecured obligations, and any inability of the utility to make them materially increases default risk.

Methods for estimating a liability amount for PPAs

According to the weighting and importance of the PPA to each utility and the level of disclosure, we may approximate a debt obligation equivalent for PPAs using one or more of the methods discussed below. In each case, we look holistically at the PPA's credit impact on the utility, including the ability to pass through costs and curtail payments, the materiality of the PPA obligation to the overall business risk and cash flows of the utility, operational constraints that the PPA imposes, the maturity of the PPA obligation, the impact of purchased power on market-based power sales (if any) that the utility will engage in, and our view of future market conditions and volatility.

- **Operating cost:** If a utility enters into a PPA for the purpose of providing an assured supply and there is reasonable assurance that regulators will allow the costs to be recovered in regulated rates, we may view the PPA as being most akin to an operating cost. Provided that the accounting treatment for the PPA is, in this circumstance, off-balance sheet, we will most likely make no adjustment to bring the obligation onto the utility's balance sheet.

- **Annual obligation x 6:** In some situations, the PPA obligation may be estimated by multiplying the annual payments by a factor of six (in most cases). This method is sometimes used in the capitalization of operating leases. This method may be used as an approximation where the analyst determines that the obligation is significant but cannot otherwise be quantified due to limited information.
- **Net present value:** Where the analyst has sufficient information, we may add the NPV of the stream of PPA payments to the debt obligations of the utility. The discount rate used will be our estimate of the cost of capital of the utility.
- **Debt look-through:** In some circumstances, where the debt incurred by the IPP is directly related to the off-taking utility, there may be reason to allocate the entire debt (or a proportional part related to share of power dedicated to the utility) of the IPP to that of the utility.
- **Mark-to-market:** In situations in which we believe that the PPA prices exceed the market price and thus will create an ongoing liability for the utility, we may use a net mark-to-market method, in which the NPV of the utility's future out-of-the-money net payments will be added to its total debt obligations.
- **Consolidation:** In some instances where the IPP is wholly dedicated to the utility, it may be appropriate to consolidate the debt and cash flows of the IPP with that of the utility. If the utility purchases only a portion of the power from the IPP, then that proportion of debt might be consolidated with the utility.

If we have determined to impute debt to a PPA for which the accounting treatment is not on-balance sheet, we will, in some circumstances, use more than one method to estimate the debt equivalent obligations imposed by the PPA, and compare results. If circumstances (including regulatory treatment or market conditions) change over time, the approach that is used may also vary.

Moody's related publications

Credit ratings are primarily determined through the application of sector credit rating methodologies. Certain broad methodological considerations (described in one or more cross-sector methodologies) may also be relevant to the determination of credit ratings of issuers and instruments. A list of sector and cross-sector methodologies can be found here.

For data summarizing the historical robustness and predictive power of credit ratings, please click here.

For further information, please refer to *Rating Symbols and Definitions*, which is available here.

Endnotes

1 A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.

2 A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.

3 A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.

4 For more information, see our cross-sector methodology that discusses general principles related to how sovereign credit quality can impact other ratings. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.

5 For an explanation of the Baseline Credit Assessment, please refer to *Rating Symbols and Definitions* and to our cross-sector methodology for government-related issuers. A link to a list of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's related publications" section.

6 For an explanation of our standard adjustments, please see the cross-sector methodology that describes our financial statement adjustments in the analysis of non-financial corporations.

7 A link to a list of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's related publications" section.

8 For an explanation of the Baseline Credit Assessment, please refer to *Rating Symbols and Definitions* and to our cross-sector methodology for government-related issuers. A link to a list of our sector and cross-sector methodologies and a link to *Rating Symbols and Definitions* can be found in the "Moody's related publications" section.

9 A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.

10 A link to *Rating Symbols and Definitions* can be found in the "Moody's related publications" section.

11 A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.

12 See paragraph at the end of this section for approaches to Hybrid HoldCos.

13 A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.

14 A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.

15 For more information, see our cross-sector methodology that describes general principles related to loss given default for speculative-grade companies. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's related publications" section.

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Criteria | Corporates | General

Sector-Specific Corporate Methodology

April 4, 2024

These criteria are effective on April 4, 2024, except in jurisdictions that require local registration. In those jurisdictions, the criteria are effective only after the local registration process is completed.

This criteria article describes the credit factors and assumptions S&P Global Ratings uses in its analysis of each of the sectors covered by "Corporate Methodology," published Jan. 7, 2024. For information about key changes, the impact on ratings, and superseded criteria, see our media release announcing the publication of these criteria, titled "Sector-Specific Corporate Methodology Published," published in conjunction with this article.

This criteria article should be read in conjunction with our corporate methodology, which provides the general framework. This framework is applied using:

- Sector-specific provisions contained in this methodology;
- Management and governance considerations, as contained in "Management And Governance Credit Factors For Corporate Entities," published Jan. 7, 2024;
- Adjustments to financial metrics and ratio calculations, as described in "Corporate Methodology: Ratios And Adjustments," published April 1, 2019; and
- Liquidity considerations, as described in "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers," published Dec. 16, 2014.

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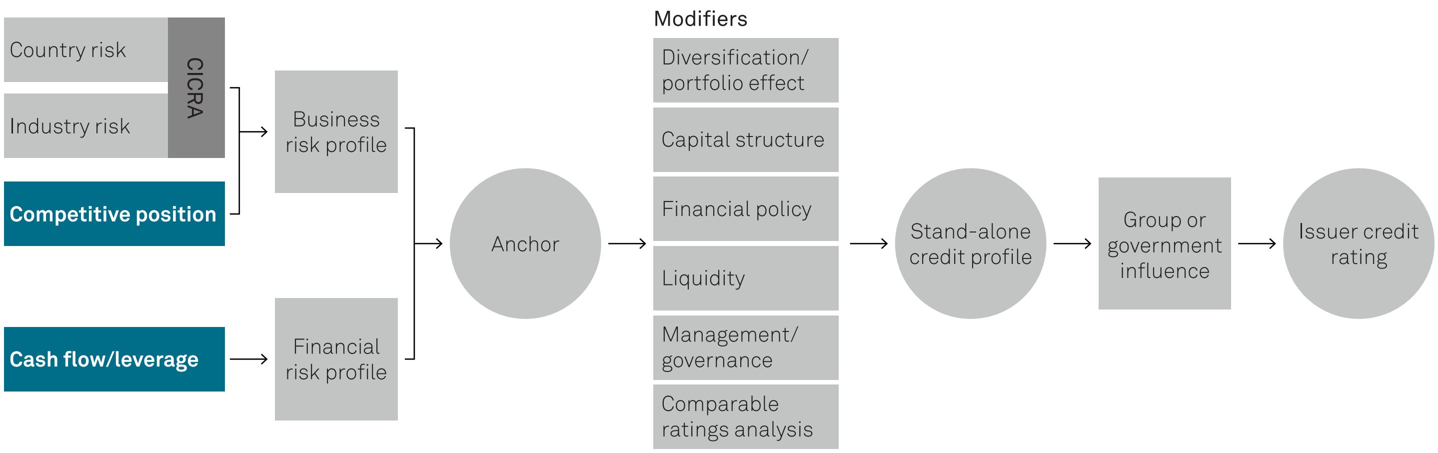
Methodology

Overview

These criteria primarily address sector-specific considerations related to competitive position, cash flow/leverage, and in some cases, certain of the modifiers shown in the framework below. The article applies globally to all corporate ratings and to certain nonbank financial institution entities that we rate using our global corporate methodology. Although our overall approach is the same for all sectors, we incorporate sector-specific provisions into our analysis.

Corporate criteria framework



Source: S&P Global Ratings.

Primarily, the criteria describe the relevant factors used to assess the competitive position for each sector as part of the business risk profile analysis. We assess competitive advantage; scale, scope, and diversity; and operating efficiency by reviewing a variety of subfactors that may reinforce or weaken each other. For any company, our assessment of these elements reflects the relative strengths and importance of its subfactors in the context of its industry.

In line with our corporate methodology, we assess each factor as strong, strong/adequate, adequate, adequate/weak, or weak. For each sector, the criteria include tables that summarize the characteristics that we typically expect to see across this range. The tables do not specify the characteristics expected at the adequate level: we assess a component as adequate if the characteristics fall between those for a strong or strong/adequate assessment, and those for an adequate/weak or weak assessment.

For each sector covered by these criteria, we list the competitive position group profiles (CPGPs) we would typically apply for each subsector. In some cases, the most appropriate CPGP differs from the one listed; for example, because the company has a monopoly position in its market or benefits from regulatory protection. The CPGP affects the weighting we ascribe to each element of our competitive position assessment within our framework.

The criteria also notes the sector-specific approaches we use when assessing the financial risk profile or the modifiers that apply to it, including the typical supplementary ratios used, the volatility adjustment and benchmark volatility tables, or the financial policy.

Please see appendix 1 for a glossary of terms, appendix 2 for the metrics we use to calculate volatility of profitability, and appendix 3 for the sector and industry variables.

Section 1 | Aerospace And Defense

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the aerospace and defense (A&D) sector based on:

- Business strategy and market position;
- Product or service range;
- Technological capabilities;
- Record of program execution; and
- Position in the supply chain.

Aerospace

Commercial aerospace companies gain a competitive advantage from being higher in the supply chain. Given that the number of players is generally limited, the following market participants are usually in a better position to compete:

- Aircraft original equipment manufacturers (OEMs);
- Companies that design, assemble, and market complete aircraft; and
- Tier 1 suppliers, which produce large assemblies or components.

Conversely, Tier 2 and lower suppliers--which produce smaller assemblies, commoditized parts, or basic components--generally face more competition and have less power when negotiating with their customers.

Business strategy and market position: When evaluating companies' strategic positioning, we include their reputation and safety record, as well as their product development plans. For a company higher up the supply chain, strategic positioning includes considering market segments in which it participates; the size and attractiveness of each segment; and the size and trajectory of its market share in each segment.

Product or service range: Each major market segment has subsegments. Commercial airliners include widebody and narrowbody aircraft; business jets are subdivided by cabin size. Commercial airliner OEMs can gain a competitive advantage if they can offer airlines a full family of aircraft to match their route network. Similarly, offering competitive products in each size and range category benefits business jet OEMs because customers tend to demonstrate strong brand loyalty.

Sector description

Companies that derive more than half of their revenue from designing, manufacturing, or repairing commercial (civilian) aircraft or weapons systems; from supplying parts, components, or systems to build and service aircraft or defense systems; or from providing defense-related services to government agencies or the military.

Subsectors	Typical CPGP
Aerospace	Services and product focus
Defense	Services and product focus
Aerospace and defense (capital intensive)	Capital or asset focus

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Technological capabilities: We consider robust development plans to be positive for an aircraft OEM's competitive position. A company may plan to address gaps in its line-up or may aim to replace aging models. In evaluating an aircraft OEM's technological capabilities, we consider whether it has:

- A record of developing new aircraft or engines that incorporate the latest technologies, on time and within budget, and with limited post-rollout problems;
- Good subcontractor oversight and system integration skills; and
- The ability to provide a global aftermarket support network.

For companies that provide services to the aviation industry, such as airframe or engine maintenance, we consider not only the firm's technological capabilities, but also which manufacturer and aviation authority approvals it has gained. These allow it to work on specific aircraft or engines.

For suppliers lower down the supply chain, we consider:

- Their presence in popular aircraft or engine program markets;
- Their design and engineering capabilities; and
- Whether they own or have licensed the intellectual property (IP) rights to the part being supplied.

Retaining the IP rights offers protection; if a company is simply building to the customer's specifications (build-to-print), the customer can switch suppliers more easily. That said, any new supplier might need to gain manufacturer and aviation authority approvals before it can take over manufacturing of the part. When evaluating the technological capabilities of suppliers at the tier 2 level or below, we consider their range and whether they offer any unique capabilities or possess highly specialized machinery or tooling.

Defense

Market position: Market share is not generally a particularly meaningful measure for defense contractors because the industry has so few prime contractors. In some cases, only one contractor is selected (that is, authorized) to produce a particular weapons platform.

The most important element in assessing strategic positioning, therefore, is whether we consider that the contractor operates in high-priority areas of the defense market that are likely to continue to receive government funding. This depends on the type and breadth of weapons platforms or related services that the company provides. For suppliers, we consider whether the programs they supply are high priority.

Technological capabilities: We also consider a defense contractor's technological capabilities, especially its ability to integrate complex, highly sophisticated weapon systems, and to manage subcontractors. Government selection processes favor contractors that have a record of successful program execution, in terms of both schedule and cost.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
Commercial aerospace OEM, prime defense contractor, or tier 1 supplier that has a solid record of successful program execution and new product development.	Tier 2 and lower supplier with limited, subpar, or no record of successfully developing and executing programs.
Commercial aerospace OEM	
Leading market positions in growing market segments.	Market share is small, or markets have limited growth prospects.
Offers a choice of aircraft that address all, or almost all, customer size and range requirements.	Product line is narrow or has large gaps.
Strong capacity to design, develop, market, produce, and support aircraft.	Little ability in one or more areas of design, development, marketing, production, or aftersales support.
Commercial aerospace supplier (including engine makers)	
Revenue is almost all related to supplying parts or services for aircraft platforms that are popular and expanding, likely in a range of market segments.	Most revenue generated in market segments with unfavorable medium/long-term growth prospects, or by supplying aircraft platforms that are less popular or due to be retired.
Supplier has the capacity to design most products.	Work is largely build-to-print.
Lower-tier suppliers would only be assessed as strong if they offer unique capabilities that cannot be replicated.	Supplier has limited or no design capabilities and produces commoditized parts or parts that are not technologically sophisticated.
Defense contractor	
Most programs are considered high priority for government funding.	Most programs are likely to see funding cuts.
Offers a broad range of technological and system integration capabilities.	Offers few products, or products that are not technologically sophisticated.

Scale, scope, and diversity

Many A&D companies participate in multiple markets, each of which has different cycles and characteristics. Markets may include commercial aerospace, defense, and related industrial and service markets.

Aerospace

We assess scale, scope, and diversity in the aerospace sector based on:

- Breadth of product offering;
- Platform or program concentration;
- Degree of diversity of its end markets;
- Geographic balance of its sales; and
- Degree of customer concentration.

Commercial aerospace OEMs typically benefit from offering a comprehensive choice of aircraft that differ by price point, seat capacity, and range. Business jet OEMs, in particular, find that customers prefer to choose another aircraft from the same manufacturer when their needs change. The breadth of a company's product line is therefore key to our assessment of their scale, scope, and diversity.

Customer concentration: We assess OEMs' customer diversity in several ways; number of customers; sales concentration by customer; geographic diversity; and type of customer. We consider geographic diversity positively because, although commercial aerospace is a global business, growth prospects and economic cycles differ by region. Similarly, commercial aerospace OEMs benefit from selling to both legacy airlines and low-cost carriers, which target different markets.

Program concentration: Commercial aerospace suppliers sell to the relatively small universe of aircraft OEMs, which amplifies customer concentration and limits geographic diversity. Therefore, we consider concentration in terms of the individual aircraft programs to which the company provides parts or systems, and the relative attractiveness of each program. We also consider whether the company supplies different subsegments within the commercial market (that is, commercial jetliners, business jets, piston engine aircraft, and helicopters), and whether they have diversified into the defense or related industrial markets. When assessing geographic diversity, we consider the customers that ultimately buy the aircraft or engine built using the supplier's parts.

Breadth of product offering: We evaluate the range of its capabilities; for example, whether it can provide larger assemblies or systems, as well as components. We also consider what proportion of the company's products are used to build new aircraft, and how many are sold as replacements in the aftermarket. Not only do the two markets have different dynamics, but also aftermarket sales are typically much more profitable.

For companies that provide aviation services, such as airframe or engine maintenance, we consider what aircraft or engines the company has OEM or regulatory authorization to work on.

Defense

In most countries, defense spending is allocated to four main uses--personnel, procurement, R&D, and operations and maintenance (O&M)--and the spending priorities can change over time with political or security developments. The primary sources of funding for most defense contractors are R&D and procurement budgets and, to a lesser extent, O&M for services such as training and maintenance.

We assess scale, scope, and diversity in the defence sector based on:

- Revenue diversity (the proportion of sales for each program and its funding source);
- Contract type;
- Customer diversity; and
- Breadth of product offering.

Revenue diversity: Typically, new weapons platforms will be developed under a program, funded from an R&D budget. Although their margins are often lower, a successful development program can lead to a higher-margin production program and aftermarket support, which are typically funded through procurement budgets. In most cases, the contractor that developed a weapons system will be selected to produce it. We consider that participating in both development and production programs implies stronger revenue visibility.

Contract type: The contract types to which a firm is party are also key to our assessment of program diversity. Under cost-plus contracts, firms are reimbursed for the costs they incur, plus a fee. Although this means that the customer will bear the risk of any cost overruns, most cost-plus contracts offer low margins to reflect the lower risk. Fixed-price contracts, on the other hand, shift all of the risk of cost overruns to the contractor. They generally offer much higher margins if the company can control costs. Contracts in the defense sector also come in numerous variants that mix the characteristics of cost-plus and fixed-price contracts.

Customer diversity: We look at how sales are broken down by different military services, intelligence agencies (military or civilian), and civilian government agencies. The budget prospects for each of these can vary. We also consider sales to foreign governments and, in some cases, to commercial customers. For subcontractors, we regard the ultimate end user of the product or service as more important than the prime contractor. Demand is driven by end users.

Breadth of product offering: We consider the range of weapons systems, subsystems, components, and related services the firm offers.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Commercial aerospace OEM	
Offers a wide selection of aircraft to meet a range of customer needs.	Sales are concentrated in few products, or in markets with poor growth prospects.
Customers are well diversified by geography and type, with little customer concentration.	Limited regional or customer diversity.
Commercial aerospace supplier (including engine maker)	
Participates in several popular programs, across different market segments (that is, jetliners, business jets, turboprop or prop planes or helicopters), as well as defense and industrial markets.	Generates most sales through a small number of aircraft programs or from programs that have less favorable growth prospects.
Offers a broad range of products/capabilities and can offer components, higher-level assemblies, or systems.	Offers few products, or lacks ability to produce higher-level assemblies or systems.
Sales are well-balanced between new aircraft or engines and aftermarket sales.	Participates in only a few market subsegments, or limited participation in the higher-margin aftermarkets, or makes few sales to defense and industrial markets.
Defense contractors	
Low geographic, customer, or program concentration.	Sales concentration by military service or civilian government agency or by weapons program (especially programs with declining funding).
Broad product or service offering.	Limited product or service offering
Good mix of domestic funding sources, including foreign sales.	Funding sources show little diversity and there are few, or no, foreign or commercial sales.
Good balance between development and production programs and cost-plus and fixed-price contracts.	Development programs are few in number and mostly fixed-price contracts.

Operating efficiency

We assess operating efficiency in the A&D sector based on:

- A company's relative cost position compared with industry peers;
- Its ability to control costs and improve efficiency;
- Its ability to be flexible when managing capacity and workforce to match demand; and
- Its record of successfully integrating acquisitions.

Cost position: We consider this relative to its peers, in terms of EBITDA margin, SG&A-to-sales ratio, and capex-to-sales ratio. The overall cost and margin profile is evaluated alongside those of the company's various reporting segments.

Ability to control costs and improve efficiency: In addition, sticking to the agreed schedule and budget is key for both aerospace OEMs and defense contractors (when developing and delivering programs) with minimal delays or cost overruns. Aircraft OEMs benefit if they can quickly apply what they learn during development to reduce per-unit costs. Defense contractors require the ability to properly bid and structure contracts to ensure that they are appropriately compensated for the risk they are taking.

Flexibility to manage capacity and workforce to match demand: Flexibility is key to maintaining control over costs in a sector that requires skilled labor, especially where production may be rapidly reduced or ramped up. Key indicators include operating leverage, vertical integration, outsourcing, and pension costs. In addition, we consider factors that may affect the flexibility of labor costs, such as unionization.

Ability to successfully integrate acquisitions: Our assessment of cost management also incorporates the company's record of cost reductions throughout the cycle; the effectiveness of its restructuring programs and lean manufacturing programs, where applicable; and its ability to integrate acquisitions successfully.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
EBITDA margins consistently exceed peers after taking into account differences in sales mix.	EBITDA margins, adjusted to account for differences in sales mix, are consistently below peers and highly sensitive to fluctuations in the cost of raw materials.
Cost structure is relatively flexible, with lower-than-peers operating leverage.	Cost structure is less flexible than average, with high fixed or semifixed costs, inflexible labor contracts, vertical integration that creates inefficiencies, or outdated assets or technologies.
Cost position has been improved in both good times and bad (for example, by reducing structural labor costs or input costs, or by altering the footprint).	A history of operational missteps or restructuring without tangible savings.
Commercial aerospace company	
A record of introducing new products with minimal delays or costs overruns, and of reducing per-unit costs quickly as production increases.	A history of significant delays or cost overruns on new products, or difficulty in increasing production and improving profitability.
Defense contractor	
Programs rarely fall materially behind schedule or exceed their target cost.	Programs are frequently above cost or behind schedule and/or a history of underestimating the cost or complexity of programs, or of agreeing to unfavorable contract terms to win business.

Financial Risk Profile

Supplementary ratios

We use FOCF to debt as our preferred supplementary ratio for the sector. A&D companies often invest heavily when developing new products and their contracts may include advance payments that create lumpy working capital flows. Long-term service agreements can also eat into FOCF, making A&D companies more volatile in this regard compared with some other industries.

Section 2 | Agribusiness, Commodity Foods, And Agricultural Cooperatives

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If an agribusiness, commodity foods company, or agricultural cooperative engages in commodities trading operations (often the case for grain merchandisers), we look at how much these contribute to normalized EBIT, EBITDA, or gross margin:

- If the contribution is below 10%, we apply these criteria without change.
- If the contribution is between 10% and 20%, we apply this methodology and make the accounting adjustment for adjusted readily marketable inventories (ARMI), as described in our ratios and adjustments criteria.
- If the contribution is between 20% and 70%, we apply section IV of our commodities trading industry methodology to analyze the trading segment.
- If the contribution is above 70%, we apply the commodities trading industry methodology.

Business Risk Profile

Competitive advantage

Agribusiness and commodity foods

We assess competitive advantage in the agribusiness and commodity foods sector based on:

- The company's evolving share in key regional and global markets;
- The strength and breadth of its product offerings and its customer base; and
- The overall effectiveness of its operating strategy.

Market share: We consider the size and growth prospects of the markets in which the company participates, and whether its position is strengthening or declining. Companies that have a presence in multiple growing regions, or that either trade or process globally in several agricultural commodities, are better placed to ride out poor seasons in one of their markets. Certain markets also offer participants a competitive advantage because sourcing is favorable, or they offer opportunities to trade/process more value-added products or to serve multiple channels. Substitution risk is higher for pure commodities than for tailored offerings, such as value-added natural ingredients, sweeteners, or texturizers, which would require significant investment to duplicate.

Strength and breadth of product offerings and the customer base: We assess the degree to which a company has invested in a deep product portfolio and more value-added products. The latter include ingredients and other value-added solutions for food manufacturers, or having some branded products supported by intellectual property (for example, low-calorie natural sweeteners). In our view, strong product offerings are more solutions-oriented and include additional services that address specific problems, such as financial and risk management

Sector description

Companies that derive more than half of their revenue from sourcing and distributing crops and crop inputs; processing and marketing commodity food products; or trading or processing agricultural commodities. Alternatively, agricultural cooperatives that have been established to help their member-owners benefit from economies of scale by taking on tasks such as marketing and processing agricultural commodities; or buying and distributing farming supplies to farmer-owners and others.

Subsectors	Typical CPGP
Agricultural products	Commodity focus/scale driven
Branded agricultural products (if more than 50% of the offering)	Services and product focus
Cooperatives that sell branded products	Services and product focus
Marketing cooperatives	Commodity focus/cost driven
Supply cooperatives	Commodity focus/scale driven

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Our sector-specific liquidity considerations are described in "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers."

solutions, or agronomical services that could improve a farmer's crop performance and minimize volatility. We also evaluate the strength of the relationships these companies have developed with their customers and suppliers.

Effectiveness of operating strategy: We evaluate the degree to which a company's structure and strategy enables it to maintain above-average profitability and growth prospects. For example, vertical integration across various phases of distribution and production may enable a company to achieve above-market-average processing margins or manage their logistics more effectively than competitors. Other possible sources of advantage include the management of inter-regional price and cost disparities, superior market intelligence (such as profit optimization decisions among trading, storing, processing, and other strategies that maximize the profits), and reduced exposure to food safety risks such as disease and food supply contamination.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
One of the top two or three players in at least three of the key growing/processing regions, or trades in at least three global agricultural commodities, with the stronger companies leading more attractive markets with good growth prospects.	Overall market position is below average or below the mid-tier; leadership of a very narrow segment of the market, such as a single agricultural crop; or dominates just one region. Participates in markets that have weak growth prospects.
A significant proportion of the portfolio comprises products that have a value-added aspect or service and can be distinguished from a pure commodity.	The portfolio comprises products that are pure commodities, with very limited value-added characteristics.
Above-average sourcing capabilities or customer retention rates and long-lasting, strong supply relationships with farmers or leading global food manufacturers because the company offers its customers a broad spectrum of services.	Substitution risk is high or customer retention rates low because the company's offer is limited.
A distinct strategic advantage over competitors that leads to more stable performance compared with peers or above-average processing margins.	The company's business strategy offers limited or no discernible advantage in terms of logistics or procurement that would distinguish it from the competition.
A favorable regulatory environment (such as tariffs and quotas that protect the company).	A sector-specific regulatory framework that compromises profit stability (for example, overly restrictive pricing directives, tariffs, or trade restrictions on certain commodity foods).

Agricultural cooperatives

The business model of an agricultural cooperative reflects the purpose it is intended to fulfil (marketing or supply cooperative, including those that sell branded products) and affects the factors we use to assess competitive advantage.

Marketing cooperatives

A marketing cooperative is intended to provide a cost-effective way for member-owners to sell products at a better price than they could achieve individually.

We assess competitive advantage for marketing cooperatives based on:

- Barriers to entry, including regulatory barriers such as tariffs and quotas, and diversity of sourcing or specific production attributes;
- Product differentiation or brand strength, mitigating substitution risk; and
- The commitment shown by the farmer member base to remaining within the cooperative, which enhances cost effectiveness and competitive strength.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
A distinct strategic advantage over other competitors that leads to above-average market returns for its member-owners.	The marketing strategy offers farmers no advantage and generates commodity returns that are no higher than those members could earn elsewhere.
A significant proportion of the portfolio comprises products that have a value-added aspect or service and can be distinguished from a pure commodity.	Products are exclusively marketed as pure commodities that have little differentiation to distinguish them from the competition.
Members are long-tenured, stable, and economically viable, and keen to remain part of the cooperative.	Members are economically challenged or significant turnover in the membership limits the cooperative's ability to manage the amount and timing of member payments.
Farmer-members have a distinct agronomical advantage (land quality, or climatic conditions of the farming region) that results in higher crop returns for the marketed commodity, compared with substitute crops.	The cooperative's farming territories offer limited or no discernible agronomical advantage.
A favorable and predictable regulatory environment that protects the pricing and supplies of a particular commodity.	A sector-specific regulatory framework that compromises profit stability (for example, overly restrictive pricing directives, tariffs, or trade restrictions on certain commodity foods).

Supply cooperatives

A supply cooperative's goal is to deliver cost-effective and value-added services to its member-owners, who benefit from the profits generated. It may also supply non-member-owners.

We assess competitive advantage for supply cooperatives based on:

- The strength and breadth of their products and services, based on earnings generation;
- Their ability to develop new and value-added products and solution-oriented services to meet the needs of members and customers; and
- Their record of profitably maintaining and expanding sales volumes and the size of their member and customer base.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
A broad portfolio of agricultural products and services that can easily be distinguished from competitors and includes more commodity-based farm products, as well as more value-added, customer-centric agronomic services.	A narrow set of product offerings that are primarily commodity-based and have limited product differentiation.
A strong reputation for service, and for offering innovative product solutions (for example, agronomy services).	Limited focus on customer service or product innovation.
A dominant and growing market presence or membership base in the territories it services.	A modest market presence in the territories it services and a weak membership base.

Scale, scope, and diversity

We assess scale, scope, and diversity in this sector based on:

- Size of the earnings base relative to close competitors;
- Geographic diversity in terms of manufacturing or sourcing locations and presence in different product categories and markets;
- Size and reach of asset base or logistics infrastructure;
- Diversification by business function, including the range of commodity merchandising, distribution, processing, and other services offered;
- Customer and counterparty diversification; and
- On top of that, for a cooperative: the size, stability, growth profile, and diversification of its member base.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
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.	Significant sourcing concentration, including participation in only a few regions (typically fewer than three).
Strong earnings diversity, reinforced by offering a variety of product, logistics, hedging, and agronomy solutions to farmers, or ingredients solutions to industrial users.	Limited earnings diversity or processing is concentrated in just one or two primary commodities, so that the company produces only one commodity protein or one agricultural commodity.
Processed products demonstrate strong diversity and the product mix is a balance between pure commodity inputs to other manufacturers and value-added branded offerings (including private-label commodity offerings to retailers).	Significant concentration in manufacturing or production makes the company reliant on fewer than three manufacturing plants; grain merchandisers or crop input wholesalers may be reliant on a limited number of storage or mixing facilities.
Limited customer concentrations, so that the top customer contributes no more than 30% of overall sales; grain merchandisers would have no counterparty exposures exceeding 15% of consolidated operating earnings.	High customer concentration, so that one or more customers account for more than 30% of revenue each; or, in merchandising, significant counterparty exposures so that one customer accounts for more than 15% of earnings.
Agricultural cooperatives	
Membership base is market-leading, stable, and diversified (no single member accounts for more than 20% of earnings). Cooperative benefits from significant economies of scale in its manufacturing or process or has a large number of members distributed across several regions. Earning sources are diversified across products.	Membership base or member retention is weak, or membership is concentrated enough to compromise the cooperative's competitive position.

Operating efficiency

We analyze operating efficiency in this sector based on whether:

- The company has strategically located its storage facilities, distribution hubs (such as port and rail terminals), and sourcing or processing facilities so that its asset positioning provides it with a distinct logistical advantage over its peers;
- The company's manufacturing processes offer an advantage in terms of cost or procurement and production efficiencies, including utilization rates; and
- On top on that, for cooperatives, we consider whether there is a willingness and ability to reduce significant recurring payments to member-owners, either to reinvest in its product offerings or to stabilize operating performance during weaker market cycles.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
Assets are positioned to create an advantage in terms of profitability--for example, locating facilities in a key commodity growing area lowers procurement and transportation costs and offers a stable source of supply; similarly, protein producers that have plants located closer to key cattle herding regions tend to have lower sourcing costs.	Plant locations or regional sourcing concentrations create a disadvantage.
Above-average plant operating efficiencies or harvest yields, including better manufacturing utilization rates than peers.	Inconsistent manufacturing performance, including more volatile utilization rates or harvest yields than peers.
Extensive reach and a well-established distribution infrastructure, either globally or in a leading economy, that makes the business more stable and evens out working capital requirements.	Substantial seasonality in the business and working capital requirements that could lead to excess inventory if seasonal demand is weaker than anticipated.
Above-average sourcing and logistics management, including better basis management and above-average distribution or manufacturing margins. Economies of scale and efficiencies lead to better profit margins versus peers, taking into account differences in sales mix and average selling prices.	A poor record of executing its strategy, including a history of operating underperformance or operating disruptions that could contribute to supply-chain deficiencies and operating inefficiency.
Agricultural cooperatives	
The cooperative's cost structure is more flexible because the cooperative can reduce or adjust member payments as needed.	The cooperative shows no willingness or ability to reduce member payments to stabilize operating performance.

Profitability

Agribusiness and commodity foods

For most companies in this sector, the EBITDA margin gives a good indication of the level of profitability. That said, price inflation can distort our analysis of EBITDA margins at low-margin activities, particularly in the grain processing and merchandising segments. Where this occurs, or the EBITDA margin is close to the thresholds for below average or above average, we may refine our assessment by comparing EBITDA or EBIT per unit sold, if available. Alternatively, we may use ROC to evaluate profitability. Our ROC analysis incorporates adjusted capital, including the adjustment that we make for ARMI, where applicable.

For grain processors and merchandisers, we generally calculate ROC based on a three-year average using results from the previous two years and our current-year estimate, which incorporates any reported year-to-date results and our forecast for the remainder of the year.

Our analysis also takes into account profitability trends, and we normalize results if we consider trading conditions to be extraordinary.

Because of regional and product variations in margin structures in this sector, we may give greater weight to peer comparisons than to the profitability thresholds when assessing the level of a company's profitability.

Agricultural cooperatives

Marketing cooperatives, including those that sell branded products

Commodity-focused marketing cooperatives exist to maximize price for agricultural commodities. Given that profitability measures such as the EBITDA margin may not be comparable across products, we generally analyze whether the cooperative achieved a significant premium over the market value of the commodity. If market price information is unavailable, we determine relative profitability by comparing the level and trend of a cooperative's ROC with that of its peers. The branded products sold by marketing cooperatives compete directly with other consumer nondurables, primarily packaged food offerings.

For services and product focus marketing cooperatives that sell branded products, we consider the EBITDA margin to be important when evaluating profitability at cooperatives that market value-added, branded products. These generate most of their earnings from products that are sold and compete directly with other consumer nondurables, primarily packaged food offerings. Where relevant, we may also consider additional profit measures, such as ROC.

Supply cooperatives

For most supply cooperatives, our primary indicator of the level of profitability is the EBITDA margin. When the EBITDA margin is close to the thresholds for below average or above average, we generally refine our analysis by looking at other ratios--such as EBITDA or EBIT per unit.

Financial Risk Profile

Supplementary ratios

Agribusiness and commodity foods

FOCF to debt is our preferred supplementary ratio for most agribusiness companies. Although we do not define them as capital-intensive companies (ongoing capital spending to sales is generally less than 10% and depreciation to sales is less than 8%), we still view commodity food processing as somewhat capital-intensive. For companies that make significant dividend distributions, we use DCF to debt to refine our preliminary cash flow/leverage assessment.

Working capital investment needs tend to show significant swings at highly seasonal companies such as crop input wholesalers. This typically increases intrayear borrowing, so we supplement our analysis using the interest coverage ratios--EBITDA to interest and FFO plus cash interest paid to cash interest paid--in order to capture all annual interest costs. We also focus on these ratios if a company has high working capital or capital needs, or if the preliminary cash flow/leverage assessment is significant or weaker.

Volatility adjustment: 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, as defined in our corporate methodology.

Agricultural cooperatives

Cooperatives may benefit from ongoing and well-entrenched relationships with banks or nationalized agricultural-focused lending institutions through lower-than-peers' interest costs or a minority interest held by nationalized lending institutions. In these cases, our preferred supplementary ratios are EBITDA to interest and FFO plus interest paid to cash interest paid.

Volatility tables: Some cooperatives have significant discretion over the amount and timing of payments made to cooperative members, reducing their cash flow volatility.

- We may apply the medial volatility table if a cooperative is willing and able to effectively reduce member payments, provided that it operates in a country with a CICRA of '3' or better, its preliminary competitive position assessment is satisfactory or better, and its profitability assessment is fair or better.
- We may apply the low volatility table if a cooperative meets the conditions listed above and has a track record lasting several years of curtailing member payments or increasing member equity retentions, as needed, to support cash flow and leverage ratios. We would only apply the low volatility table if any curtailments were not simply deferrals, and we considered the cooperative highly likely to maintain its policy on reducing member payments at need.
- In all other cases, we apply the standard volatility table.

Modifiers

Comparable ratings analysis

Grain merchandisers and vertically integrated livestock companies typically make heavy use of derivatives to hedge against price risk in their commodity positions. This can lead to significant cash collateral calls, counterparty exposures, and even debt-like obligations for significantly out-of-the-money derivative positions. Therefore, we examine a company's use of derivative positions and consider whether it might lead to outsize losses, payment obligations, or margin calls that could compromise the 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.

Section 3 | Auto And Commercial Vehicle Manufacturing

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Business Risk Profile

Competitive advantage

We assess competitive advantage for an auto and commercial vehicle manufacturer based on:

- Market share;
- Product profile and differentiation strategy;
- Technological expertise;
- Distribution strategy; and
- Financing options.

Market share: Manufacturers of cars and commercial vehicles depend on offering products that customers want to drive at an affordable price for the end consumer. A successful product mix enables vehicle manufacturers to maintain or increase their share of the market and solidify their market position. We track the evolution of market share by country, region, and globally, and across product segments (defined by the vehicle's size, powertrain, price, and purpose). The cyclicality and growth prospects of markets in each region differ, even when downturns are globally correlated.

Specifically, we review market share:

- Relative to industry peers and for a company's main product segments;
- In the premium segments, where pricing competition is less than the industry average; and
- In specific submarkets that we consider particularly profitable.

Differentiation strategy: Although the overall breadth of a company's product line matters, we also consider the marketing of each brand and the potential for cannibalization. If brands target the same end markets or are insufficiently distinct, an increase in sales of one product could depress the sales of another within the group. For a premium auto manufacturer, quality, reliability, and brand perception are key differentiating factors. At the lower end of the market, differentiation depends on affordability and value-for-money. As electrification and autonomous drive features becomes more popular, customers are likely to expect vehicles to meet ever-higher standards on safety and reliability. Aftersales support can bolster customer loyalty and encourage repeat sales. For example, customers consider resilient residual values to be an important indicator of quality, and these may benefit from servicing contracts supported by an extensive and exclusive repair network tied to distribution channels.

Technological expertise: Car technology is evolving quickly, especially in electrification, software, driver assistance systems, and energy consumption. Such features improve pricing

Sector description

Companies that derive more than half of their revenue from manufacturing and selling passenger cars, vans, light trucks, heavy-duty trucks, and buses.

Subsectors	Typical CPGP
Automobile and truck manufacturers (including original equipment manufacturers [OEMs])	Capital or asset focus

Other adjustments

Details of the relevant adjustments are given in "Methodology: The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers."

power, especially at the premium end of the market--new advances may offer a manufacturer price leadership. Given the ongoing demand from customers for new or stronger functionality, an auto or commercial vehicle manufacturer needs strong product development and software engineering skills to maintain its market position. In assessing these, we consider:

- A company's technological and engineering expertise, and its record of innovation;
- Its R&D capabilities, product renewal and rollout plans, and the average age of its models, and the time to market;
- Measures of reliability and quality, including residual values for second-hand vehicles, presented in benchmarking surveys; and
- Environmental and safety record, including moves to mitigate energy transition risk and compliance with environmental regulations and safety standards.

Distribution strategy: Here, we consider the effectiveness of a company's distribution and marketing strategy, including its distributor or 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.

Financing options: Both auto and truck manufacturers can gain a significant competitive advantage by offering end buyers competitive financing options. We therefore examine the reliability and efficiency of the funding mechanisms that support a company's vehicle distribution and sales process. In particular, we assess the diversity of funding alternatives offered to customers and their availability during weaker market conditions. Auto and truck manufacturers frequently operate as original equipment manufacturers (OEMs) and can achieve efficient funding by owning a captive finance business or captive financing unit, or through partnerships with external financing partners.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Has a leading market share that is stable or growing in its key markets (typically, a leading market share exceeds 10%). Consistently offers products that customers want, enabling it to increase or protect its share of key retail markets.	Low or declining market shares in key markets.
At each price point, vehicles meet customer expectations in terms of the key differentiators.	A lack of differentiated brands or products.
Offers an extensive lineup of products with advanced technology that commands name and brand recognition or offers price leadership.	Pricing power is weak and the company is a price follower, if not a discounter, with limited ability to set prices that are higher than peers.
Strong leverage when negotiating with component suppliers, so that the manufacturer can retain control over intellectual property and negotiate annual price reductions.	A lack of leverage with key suppliers.
Repeat sales indicates strong customer loyalty, with positive customer satisfaction surveys. This may be supported by long-term financing and servicing contracts; an extensive and exclusive distribution and repair network; and a broad range of sales channels, which may include an established direct-to-consumer online sales channel.	Customer retention is low compared with industry peers.

Scale, scope, and diversity

We assess scale, scope, and diversity in the auto and commercial vehicle manufacturing sector based on:

- Revenue and profit by region and the correlation between end markets
- Geographic concentration of the production facilities;
- The size of any captive finance subsidiary, its penetration rate in terms of unit sales financed, and its contribution to earnings;
- Concentration by supplier; and
- Record of strategic alliances.

Regional breakdown: We commonly measure scale through overall unit sales and diversity through a breakdown of earnings by region.

Product and brand offering: In our view, manufacturers that specialize in mass-market passenger cars may benefit from diversifying into commercial vehicles. We see strong positioning in premium or luxury segments as even more positive because these segments typically make a superior contribution to earnings. We also review the number of brands, sales by brand, and the degree of differentiation across platforms and vehicles featured in a company's catalog. The recent rise in R&D costs and shift toward supply-chain insourcing have increased the value of scale for commercial vehicle manufacturers, but we still see flexibility in production, good access to the supply chain, and a well-developed service network as equally important to sustaining profit margins.

Captive finance subsidiary: Captive finance businesses may facilitate the sale of new and used vehicles, as well as services. We factor in the size of the captive finance subsidiary, its penetration in terms of unit sales financed, and its contribution to earnings through the cycle.

Strategic alliances: These are common in the auto industry but have a mixed track record. If successful, they enable partners to share the significant cost of developing new products and technologies, or setting up new dedicated supply chains, and could add diversity by enabling them to tap new market segments or to avoid disruptions. Customer demands are increasingly differentiated by segment; alliances can make diversification less risky while a company develops its knowledge of the new sector. Operational integration within a strategic alliance can 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. A long-term strategic partnership that has successfully generated revenue synergies or mutual cost savings is positive to our assessment of an auto manufacturer's scale, scope, and diversity.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Participates in numerous end markets in different countries, including emerging markets that we consider have favorable long-term growth prospects.	Participation in only a few end markets and countries.
Sales show diversification between mass-market, commercial vehicles, and premium segments, and may include other region-specific subsegments, such as pickup trucks.	Relatively small by industry standards or has limited growth prospects.
Production capacity, including joint ventures, is geographically diversified.	Revenue and profit sources are not diversified and production facilities are geographically concentrated.
No significant supplier concentration that is unmitigated.	No meaningful strategic partnerships that could mitigate the effect of small size.

Operating efficiency

We assess operating efficiency in the auto and commercial vehicle manufacturing sector based on:

- Operating indicators;
- Supply chain;
- Cost structure and flexibility; and
- Success in vertical integration.

Operating indicators: We analyze several operating indicators over the cycle and relative to industry peers. For example, we compare gross margins and evaluate a company's variable cost position over the cycle. The cost position comprises the cost of materials, warranty, product recall, labor, R&D, engineering, and freight. In addition, we compare SG&A expenses, which comprise advertising, promotion and other costs not directly related to the development and production of vehicles, parts, accessories, and services. Finally, we track FOCF to sales as a measure of a company's ability to convert earnings into cash and manage its investments efficiently.

Our analysis of these operating indicators often covers an extended period, including historical and projected years; this helps us to normalize the impact of heavy investments in future growth or large restructuring charges. Indications of operational weakness include restructuring actions that bring no tangible saving benefits, or operational missteps that lead to lower quality, long lead times, rising warranty costs, or frequent recalls.

Supply chain: Our assessment of operating efficiency also incorporates the ability to manage the supply chain to reduce production disruption. We consider use of overtime to mitigate problems to be a weakness, while the ability to secure long-term procurement contracts for critical inputs, potentially by cutting out intermediaries, is a strength.

Cost structure flexibility: The ability to cut costs quickly and to effectively reduce capacity and break-even points are vital to our assessment of operating efficiency. In evaluating the flexibility of a company's cost structure (including the proportion of fixed to variable costs), we consider its record of reducing costs, adjusting capacity, and maintaining strong labor relations through the cycle. An auto manufacturer's ability to reduce costs and manage inventories in a downcycle, or pass on increases in input costs, depend heavily on its current capacity utilization.

An auto manufacturer may achieve efficiencies through use of low-cost production facilities or automation that supports high volumes; by increasing the commonality of its production platforms and using preassembled modules and specialized assembly lines for certain key car components (such as the chassis or powertrain). It may also indirectly benefit from long-standing strategic alliances or technology-focused agreements. Conversely, higher costs may stem from structural overcapacity; higher-than-average input costs; labor inflexibilities; outdated asset base or production technologies; or high SG&A expenses due to small size or low volumes.

Vertical integration: We view vertical integration as positive if it results in structurally higher profitability that justifies the associated higher investments or offers material benefits with respect to competitiveness or security of supply. In addition, it should not create an overreliance on specific technologies that may be subject to rapid changes. We also assess a company's ability to successfully integrate acquired businesses.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Capacity utilization rates above peers.	Capacity utilization rates below peers.
Better-than-average cost position based on economies of scale or production efficiencies. The cost structure is relatively flexible and enables costs, such as labor costs, to be cut during a downcycle.	The cost structure is less flexible than average; for example, due to labor inflexibilities, outdated asset base/production technology, small size, and insufficient volumes to spread overhead costs more efficiently.
The ratio of overhead costs to revenue is lower than peers and working capital metrics are favorable.	Previous restructuring actions have not offered tangible savings or there have been operational missteps that frequently prompted recalls, marred quality, or lengthened lead times. The company suffers from excessive inventory levels or unfavorable working capital metrics.
The sensitivity of profits or margins to fluctuations in raw material costs has been limited or effectively mitigated.	The sensitivity of profits or margins to fluctuations in raw material costs is higher than average.
Supply-chain management has been strong, so that disruptions have a limited impact on production compared with peers.	Supply-chain issues more frequently disrupt production and weaken earnings than is typical for the overall industry.

Profitability

Our primary indicator of profitability at auto and commercial vehicle manufacturers is our adjusted EBITDA margin. To calculate the EBITDA margin, we deconsolidate the earnings of any material captive finance subsidiaries. However, for some captives, we may not be able to fully disaggregate all items. This may happen, for example, when the captive has leasing that is closely intertwined with the industrial business. In those cases, we may use other metrics, such as adjusted EBIT. We may even use the respective consolidated metric, if we feel the deconsolidated metric is not representative. In addition, if the five-year average EBITDA margin is close to the thresholds for below average or above average, we may use the five-year average ROC as a supplementary indicator.

Section 4 | Auto Suppliers

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the auto suppliers sector based on:

- Market position;
- Product mix;
- Value proposition;
- Ability to adapt to technological change and the increasingly stringent regulatory standards on fuel economy, safety, and emissions, while absorbing the related costs, which create a barrier to entry; and
- Investment in and extent of R&D capabilities, and of design and engineering skills.

Market position: Global auto suppliers operate in a complex and evolving regulatory and political environment. Tightening standards for fuel economy, safety, and emissions give those with strong design and engineering capabilities a competitive advantage, which translates to improved market position and increased scale. Suppliers can also gain an advantage through their marketing, distribution, and purchasing practices. We consider suppliers' records of using smaller acquisitions to improve revenue growth, expand product lines, consolidate market share, achieve cost synergies, enhance supply-chain integration, or access superior technology.

Product mix: Given the variety of end markets and segments within the auto suppliers sector, it can be tricky to put a value on a given market share. Instead, we monitor longer-term trends in the product portfolio (by segment, product line, and geography) to help us evaluate how the product mix compares with marketplace demand.

Value proposition: Innovation can help protect margins when input costs are rising. We examine whether a supplier's vertical integration is likely to help them protect margins, win new business, and develop strong relationships with large auto original equipment manufacturers (OEMs).

Given that many auto suppliers have little pricing power when negotiating with their much-larger OEM customers, a proven ability to reduce costs and so offset the annual price reductions demanded by customers is an advantage. Offering a wide range of products, or the ability to develop products quickly, enables auto suppliers to spread their fixed costs as well as their R&D costs.

Technological change: Auto suppliers continually enhance their offerings to meet customer demands for new or greater functionality. The degree of innovation in the sector also exposes them to the risk of technological disruption. The shift to electric vehicles from internal combustion engines poses a particular threat, especially where OEMs have indicated plans to insource manufacturing of key aspects of their newer electric powertrains to increase efficiency. We track the

Sector description

Companies that derive more than half of their revenue from producing and assembling parts for car and truck manufacturers, or from offering services to manufacturers.

Subsectors	Typical CPGP
Auto parts and equipment	Capital or asset focus

progress of suppliers' plans to handle the displacement of their legacy products. Some auto suppliers offset this risk by developing a reputation for technological leadership. Those that combine this with a pipeline of new contracts are best placed to address the emerging technological and regulatory requirements for vehicles, such as new powertrains, autonomous driving, and vehicle digitization and connectivity.

Investment in R&D: Above-average investment in R&D is linked to a reputation for product quality and can lead to above-average growth. Suppliers that can provide custom-engineered products enhance their value to customers and may reduce customer churn. By becoming not merely a supplier of parts, but rather a supplier of technologies and capabilities, auto suppliers can also create barriers to entry for competitors. We therefore monitor how much a company invests in R&D, as a percentage of sales, compared with peers. Where possible, we also analyze the supplier's record of success with its new products.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Ability to command a price premium relative to other suppliers, based on dominant market position within a subsegment.	No significant pricing leverage with its larger and more powerful customer base. Negotiating leverage with auto manufacturer customers and their own vendors is relatively weak, for example, because the supplier adds little content to each vehicle.
Presence in subsegments characterized by high barriers to entry in terms of capital allocation and specific expertise.	Operates in subsegments with lower barriers to entry because they are less capital-intensive--this applies to some suppliers at the tier 2 and 3 level, and to aftermarket suppliers.
Portfolio of high-value-added, technologically advanced 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.	Products are mostly commoditized, particularly in the aftermarket, which increases vulnerability to economic downturns; or technological risk is rising in its business segments.
Organic growth prospects above the industry average because of their sizable pipeline, sustainable new business wins, or advantages gained through high-volume platforms and technology. Where a supplier makes legacy products that face high displacement risk (for example, those for internal combustion engine powertrains), a strong backlog of new products with strong sales.	Weak perception of business strategy based on an auto supplier's historical performance and how realistic are its forward-looking business objectives, in our view, given price versus competitors, sales or profit growth, and required investment levels.
Good record of using small bolt-on acquisitions to enhance market position.	Record suggests supplier is likely to lose substantial contracts with existing customers or could lose market share within their end markets because of price competition or inferior technology. This could occur where competitors benefit from lower labor costs, lower tax rates, export subsidies, or reduced-cost raw materials.
Proven ability to develop a wide range of products in large quantities at low cost and maintain strong relationships with large auto manufacturers in order to win new business.	Business strategy is unlikely to enhance its market position and stability or limited responsiveness to market changes is unlikely to foster growth.
Proven R&D capabilities that are likely to deliver a differentiated, superior product or service and help solidify business relationships with large auto manufacturer customers.	Unproven record of innovation through R&D, or still building up a reputation (for example, following emergence from Chapter 11 or a recent foray into new end markets).

Scale, scope, and diversity

We assess scale, scope, and diversity in the auto suppliers sector based on:

- End-market diversity by customer base, platform and segment, and geography;
- The degree of alignment with global production;
- Exposure to supply-chain events; and
- Presence in relatively stable aftermarkets.

Diversity: The extent of an auto supplier's diversification determines its ability to offset the impact of regional regulatory, environmental, product liability, or safety issues. At the same time, the size of its revenue base and its position within the industry help to determine its business strength and operating flexibility.

Alignment with global production: In our view, the globalization of vehicle platforms and powertrains have made size and scale key competitive differentiators for auto suppliers. Auto manufacturers require global capabilities, scalability, product innovation, and solid financial health, especially from their tier 1 suppliers. In particular, when auto manufacturers consolidate, they tend to reduce the number of suppliers to which they are exposed.

Exposure to supply-chain events: A high-impact, low-probability event can break even the most sophisticated supply chain, even if only temporarily. In our experience, it is rare for an auto supplier to be able to secure alternative supplies without incurring substantial switching costs. That said, if the supply-chain failure cannot be resolved, the issue can quickly gain momentum, which may be detrimental to creditworthiness.

Presence in stable aftermarkets: Aftermarket businesses are seen as countercyclical and thus a presence in them acts as a mitigant to the volatility of earnings. Typically, we observe stronger pricing power in aftermarket businesses compared with OEM sales.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Broad range of customers, with the top three customers typically accounting for less than 30% of revenue; manufacturing footprint closely aligned to global production; and wide range of products that could lead to cross-selling and potentially winning new business across different subsegments within the auto sector.	Customer concentration, such that the top three customers account for more than 50% of revenue or most customers are in one region; significant concentration of manufacturing capacity; and lack of product diversity or exposure to the more-stable aftermarket.
Generate revenue from a wide product range across multiple platforms or subsegments (for example, infotainment, safety, fuel efficiency, and aftermarket) that are not closely correlated. That said, although the sale of replacement parts and components for heavy trucks does not tend to be as volatile as the production of vehicles, we also consider the level of competition within any countercyclical segments.	Generate most revenue from a narrow product line, especially one exposed to a small geographic market, with no credible plan to increase customer diversity through profitable new business wins during the next three to five years.
Strong bargaining position with auto manufacturers (customers) and raw material or subcomponent suppliers, and the ability to secure alternative supplies if needed without incurring substantial switching costs.	Weak negotiating position with larger auto manufacturers and vendors, especially if the supplier lacks the scale to manufacture at a low cost.
Meaningful market share that indicates a broad range of operations, products, or services. We apply qualitative haircuts to market shares if a company operates within a niche segment such as tire pressure monitoring and valve manufacturing.	Shrinking market share or loss of profitable contracts, suggesting diminishing prospects for future profitability.
Proven ability to deliver sustainable growth, or the supplier is large enough (by revenue) to affect business trends and industry pricing.	Price follower with limited impact on business trends.
Volumes are more stable than peers, especially if this has been demonstrated during an economic downturn, or if stable volumes have been maintained without matching competitor price cuts.	Volumes fluctuate, especially if economic cycle turns.
Demonstrate above-average resilience to typical supply-chain risks such as weak suppliers, geographic concentration, or natural or manmade disasters.	Overreliance on a critical supplier increases exposure to supply-chain risks.

Operating efficiency

We assess operating efficiency for global auto suppliers based on:

- The degree of flexibility in the cost structure;
- Sensitivity to raw material and energy costs and ability to pass on cost increases; and
- Working capital management through the business cycle.

Cost structure: The ability to keep costs down, including labor costs, is critical. Auto manufacturers are themselves under pressure to reduce costs and raise weak profits, and in turn they demand low prices from their suppliers. Suppliers that are well positioned to maintain strong operational efficiency tend to have a record of adjusting their excess capacity in a timely manner. They can do this, for example, by sourcing components and subassemblies from countries where labor is cheaper and more readily available, and the workforce can be flexed up and down.

Operating leverage (a company's sales minus variable costs--that is, its contribution margin--divided by profit) is typically high in the industry. When we assess this element, we consider the supplier's ability to manage capacity utilization in line with its OEM customers' peak-to-trough guidelines.

The industry is highly capital-intensive; ongoing investment in the efficiency of production capabilities is often necessary to maintain a company's cost position. Underinvestment could lead to potential downtime and production losses, which could severely damage short-term profitability. More importantly, it could also lead to long-term volume losses for auto manufacturer (customers). We combine our assessment of suppliers' historical performance with our view of their ability to manage costs in future. We may also consider trends in FOCF to sales, relative to peers across the sector. Our analysis often incorporates extended periods (historical and projected years) to help give context to the data from periods during which a company is investing heavily in future growth or is incurring high restructuring costs.

Working capital management and the ability to pass on costs: Auto suppliers' success in managing costs varies considerably across the industry. Working capital needs tend to increase when raw material prices rise. If suppliers lack an effective means of passing the rise in costs onto customers, they can find themselves in financial distress. Similarly, short-term changes in exchange rates can present a problem for global auto suppliers. As the industry becomes more globalized and competitive, a supplier's ability to adjust prices to pass on the effect of foreign currency movements also becomes more important.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Better able to manage costs than peers, including preventing fixed costs (as a proportion of sales) from rising during an upcycle.	Poor record of managing input costs, especially for vertically integrated companies that should benefit from improved sourcing (for example, battery recycling or casting and machining).
Proactively manages capacity utilization in line with OEM customers' peak-to-trough guidelines.	Inability to restructure manufacturing operations in a timely fashion to improve capacity utilization.
Demonstrated ability to mitigate exposure to fluctuations in commodity prices through long-standing pass-through mechanisms with customers; value-added products or services that increase pricing power; or a surcharge that is adjusted regularly to reflect the composition and timing of input costs.	Inability to recover more than 50% of an increase in costs through pass-through mechanisms; and exposure to commodity price volatility, especially if margins are below the industry average.
Ability to timely adjust the fixed cost base in downturns.	High operating leverage; limited record of sustaining profit margins through the cycle; or sustained operating losses.
Record of success in adjusting inventory levels in response to customers' volatile production schedules.	Evidence of operational missteps, including one-off events that caused factory downtime; and lack of consistency in investing in and maintaining production assets.
Proven ability to mitigate the impact of foreign exchange movements by using hedging or other financial tools, or by working with customers or subsidiaries to adapt the pricing of component parts.	Profitability often affected by foreign exchange movements.
Flexible labor costs (for example, hiring more workers on short-term or temporary contracts, especially in regions where severance costs are high) and a good relationship with workforce unions to minimize the risk of costly strikes.	Limited cost flexibility.
Short cash conversion cycles (defined as days' investment in inventory and receivables, less days' investment in accounts payable), which gives companies more flexibility to redeploy capital.	Longer cash conversion cycle than peers, leading to working capital outflows.

Profitability

The EBITDA margin is our primary indicator of an auto supplier's profitability. We also consider qualitative factors such as a supplier's capital intensity because capex is necessary to maintain the asset base and so sustain profitability. Suppliers are judged against the wider pool of their industry peers, rather than just peers in their subsectors. In our view, depreciation often closely approximates the capex required to maintain the asset base so, in rare cases, we may use ROC as a supplementary ratio, to help us compare companies that have similar capital structures.

Financial Risk Profile

Supplementary ratios

Given that the auto suppliers are generally capital-intensive companies with moderately high working-capital requirements, FOCF to debt is the most useful supplementary ratio for the sector. FOCF is typically volatile and can vary from year to year, depending on the timing of product launches and the extent to which the company has won or lost contracts during the year.

When analyzing an auto supplier's financial risk profile, we closely evaluate its working capital cycle and capex requirements. When auto suppliers win several supply agreements for new platforms at once, CFO will decrease because of the fixed launch costs and working capital investment needed to execute on those business wins. CFO typically improves considerably as production ramps up.

Working capital can be a significant drain on cash. Suppliers typically invest in inventories and receivables when sales are growing, which depresses cash generation and can cause funding needs to jump. We therefore evaluate working capital management using the company's record of managing inventories and payment terms (which are often dictated by OEMs) over the business cycle. Some suppliers have released working capital from inventory and receivables when sales are declining. Consequently, we focus on FOCF across longer periods or even whole cycles, rather than on FFO.

Although we view consistent free cash flow as key to identifying auto suppliers with stronger financial risk profiles, we do not usually penalize companies for growth-related spending if we consider the new business investment will support future cash flow generation and could make the company's products and services more competitive.

Section 5 | Building Materials

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Business Risk Profile

Sector description

Companies that derive more than half of their revenue from manufacturing, distributing, and selling construction materials and building products.

Subsectors	Typical CPGP
Building products (finished or semifinished goods that require additional labor or installation, such as flat and specialty glass; wallboard; roofing materials; plumbing and lighting fixtures; doors; windows; tools: hardware, heating, ventilation, and air conditioning [HVAC] equipment; and other products used in the construction, repair, maintenance, and remodeling of buildings)	Services and product focus
Construction materials (cement, bricks, concrete, and aggregates such as sand, rock, and gravel)	Capital or asset focus

Competitive advantage

To assess competitive advantage in the building materials sector, we consider:

- Market share;
- Product differentiation and demand;
- Product distribution;
- Pricing power and purchasing power; and
- Brand equity.

Market position: Market position can offer companies a significant competitive advantage, dictating whether a company can pass through cost increases and mitigating the effect of inflation on vendor costs. By comparing the trends in gross margin across direct competitors, we gain a quantitative measure of a company's relative ability to pass along cost increases. We also evaluate market share by revenue and sales volume in each of a company's product categories, key markets, and regions. In some cases, we compare market share in terms of production capacity in a market. Our assessment incorporates the size and growth prospects of each market, their geographic diversity, and the degree of market penetration.

Diversity and differentiation: Some companies in the building materials sector offer only one, basic product; others offer thousands of different lines. Basic commodities, such as cement or aggregates, offer little or no opportunity for differentiation. By contrast, highly specialized, value-added products--such as tools, plumbing fixtures, or kitchen cabinets--can be strongly differentiated. When assessing product mix, we consider the diversity of goods offered, the price points being targeted, and whether products are discretionary or not.

Product distribution: How products are brought to market can have a significant impact and typically depends on the target customer. Some companies own their distribution channels; others prefer third-party channels. With the rise of e-commerce, we have also seen a change in how direct sales are managed, especially if the company sells directly to end users, rather than to retailers. Exclusive distribution arrangements can bolster a company's pricing power with its most important customers, and may increase purchasing power with key suppliers.

Pricing and brand: Historically, a sizable market share has helped companies by offering a pricing advantage and supporting sales performance during adverse market conditions. To evaluate the degree to which a company may benefit from this effect, we consider its reputation and brand recognition, and the company's record of maintaining market share when market conditions are adverse or evolving. Tactics used to maintain market share may include product innovation, pricing, or adjusting market strategies.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Ranks No. 1 or No. 2 in its markets, by market share.	Highly fragmented markets, subject to intense competition.
Products or materials demonstrate stable demand characteristics or command high prices and margins because they add value and are well-differentiated from competitors' products.	Limited product offerings.
The ability to raise prices when costs rise. Pricing power is bolstered by product differentiation, high service levels, or strong brand loyalty.	Limited ability to adjust pricing to offset the impact of cost pressures or competition.
Relatively attractive and diverse end markets that show good growth potential.	Lack of product differentiation and brand recognition, or few value-added products compared with competitors.
Business strategy has proved effective at maintaining or strengthening market share through cycles.	Business strategy has proved ineffective at maintaining market share or penetrating new markets.
Distribution network is well established or would be difficult and expensive for competitors to replicate.	Lack of well-established distribution network.

Scale, scope, and diversity

We assess scale, scope, and diversity in the building materials sector based on:

- The size of the revenue base, compared with that of close competitors;
- The extent to which the company derives its revenue and cash flow from products, end markets, or geographic regions that are independent or have limited correlation with each other;
- The number of producing assets;
- Product diversity;
- Geographic diversity; and
- The degree of concentration by customer and supplier.

Scope: Most companies in the building materials sector serve multiple end markets, such as residential, commercial, and infrastructure markets. The cyclicality of these tends to vary widely. For example, demand from homebuilders is highly cyclical, while demand for nondiscretionary repair and replacement materials is very stable. We assess the attractiveness of a company's product mix based on the maturity, growth potential, and competitive advantages of its products. Specific items may compete on price or performance, depending on how commoditized the item is, or how specialized.

Diversity: A company that participates in a variety of attractive markets and has good operating scale will have more stable financial performance in market downturns than smaller peers that operate in fewer markets. To measure the diversity of a building material company, we consider the breakdown of sales volume or revenue by geography, brands, and product category. We also look for concentrations that could expose the company to risk; for example, reliance on a few customers, a few manufacturing or sourcing locations, or key commodities.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Larger than peers, with higher revenue, wider geographic and customer distribution, and stronger brand recognition than its nearest competitors.	A small or minority market share relative to its peers.
Multiple manufacturing or distribution assets. Markets for its products are relatively attractive and have growth potential.	A limited number (five or fewer) of manufacturing or distribution facilities.
A diverse range of products, serving different end markets at multiple price points.	Limited product offering and little brand strength or differentiation from its competitors' products.
Distinct regional or international markets, which can offset regional cyclicality.	Sales or customers are concentrated in one or two geographic regions.
The ability to serve various construction markets, such as new residential, repair, or commercial, each of which is subject to different economic cycles.	Limited ability to service various construction markets or has focused on one or a few segments.
No single-customer concentrations of over 10% of sales. An exception may be made if a building materials company supplies a large "big box" retailer with multiple, distinct, and unique products.	High customer or supplier concentrations with more than 20% of sales or purchases from one entity.

Operating efficiency

We assess operating efficiency in the building materials sector based on:

- Investment in production assets, combined with their age, size, efficiency, location, and maintenance needs;
- SG&A expenses and margins, including the ability to raise prices to pass on cost increases; and
- Vertical integration.

Characteristics of production assets: Operational efficiency is heavily influenced by the age, size, and location of a company's production assets. Newer, more-scalable production assets that are well-maintained are typically more efficient and require fewer staff and less energy to run. Although companies can reduce the cost of logistics by locating production plants close to customers, they need to balance this against the availability and cost of labor, energy, and key raw materials (such as wood, metals, and resins). The building materials industry is moderately capital-intensive. Although this varies considerably by subsector and among companies, ongoing investment in efficient production is often necessary to maintain a company's cost position.

SG&A: Costs can be significant--most building materials companies invest in their sales infrastructure and have extensive distribution assets. The ability to control these costs when a company is undergoing rapid expansion and reduce them when business is contracting, as well as the capacity to pass on cost increases through price increases, can have a meaningful effect on profitability. We view positively companies that own the distribution channel or have an efficient and short distribution chain for their finished products (such as heating, ventilation, and air conditioning products; roofing materials; or flooring products). In our experience, margins are generally higher and more stable where distribution is efficient.

Vertical integration: Although it requires more capital, when done well, vertical integration may also enable a company to benefit from sourcing its own component parts, rather than paying a supplier to produce them. Using a supplier carries a cost in terms of the supplier's margin and logistics. Some companies also access raw materials such as sand, gravel, extruded vinyl, and aluminum castings through vertical integration, although this practice is less common.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Low-cost production and distribution compared with peers.	Production assets cost more to run than those of peers.
SG&A expense margins are stable over the cycle.	SG&A expenses are higher, on average, than those of similarly sized peers.
Ability to quickly reduce costs when demand is falling.	Limited ability to raise prices to pass on increases in the cost of raw materials and energy.
Vertical integration in manufacturing operations provides a cost advantage.	Lack of vertical integration.

Profitability

When determining the level of profitability, we compare against a pool of companies that operate in the same subsector and geography, and with similar level of vertical integration. We also consider where the subsector is in the cycle because this may significantly alter profitability compared with peers in the wider sector.

Financial Risk Profile

Supplementary ratios

If the preliminary cash flow/leverage assessment is intermediate or stronger, our preferred supplementary ratio for most manufacturers and distributors of building materials is CFO to debt. This ratio helps us allow for the large intrayear and multiyear working capital swings that affect sources and uses of cash.

In other cases, FOCF to debt allows us to gain additional insight into the cash flow available to meet capex requirements and other obligations. For example, we find FOCF to debt useful where heavy material or other asset-intensive building materials companies have curtailed their capex for a sustained period in response to low capacity utilization.

Section 6 | Business And Consumer Services

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Business Risk Profile

Competitive advantage

We assess competitive advantage for a company in the business and consumer services sector based on:

- Business strategy;
- Brand equity and reputation; and
- Market position.

Business strategy: A company's ability to successfully establish leadership positions in the markets in which it competes, and to protect or grow its share of those markets profitably, is heavily influenced by its business strategy. Poor choices may lead to missed opportunities and increases risks relative to competition. Some companies focus on cost leadership, others on differentiation; some pursue both. We look for evidence that the company's actions are consistent with its strategy. In addition, we track market share in key markets and regions, and how it is evolving. We also evaluate the attractiveness of the markets and regions in which the business operates.

A sound marketing strategy and an effective sales force are especially important for companies pursuing a differentiation strategy or expanding into new segments. We compare the relationship between revenue growth and sales force or advertising growth to judge the success of investments in these areas. Many business and consumer services issuers--especially those participating in highly fragmented markets, where scale can provide an advantage--supplement organic growth with growth through acquisitions. We monitor the degree to which a company's execution of its acquisition strategy enhances its competitive advantage.

Brand equity and reputation: Brand strength is typically created through superior service quality and leads to market-share gains and above-average profitability. Superior quality helps a company attract and retain customers, while strong brands can command a clear price premium over competitors. We use contract retention rates and cross-selling of new services to measure the quality of service and strength of customer satisfaction.

Strong brand equity and reputation can also help companies to successfully harness existing brand names when expanding into new service categories. By contrast, where brand equity and reputation are poor, there is potential for asset impairments.

Market position: Companies can use their market position to create barriers to entry. For example, a company that can integrate its service offerings into a customer's operations or bundle services increases switching costs, and thereby enhancing its market position. Higher switching costs are typically linked to higher customer retention and contract renewal rates. Conversely, a lack of

Sector description

Companies that derive more than half of their earnings by offering businesses a more cost-effective way to carry out noncore activities, or by providing a variety of services to consumers.

Subsectors	Typical CPGP
Consumer services	Services and product focus
Distributors	Services and product focus
Facilities services	Services and product focus
General support services	Services and product focus
Professional services, including contract research organizations	Services and product focus

differentiation, poor service quality, and ease of migration to a new provider typically makes companies more vulnerable to competitive pressure. Revenue may decline following relatively small pricing movements by competitors.

We also consider the ability to match the national and multinational reach of larger customers to be important because these customers usually prefer to limit the number of service providers they contract with. This also creates a barrier to entry for new competitors.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Market leadership is supported by customer retention rates above those of peers and a consistent business strategy that maximizes opportunities and mitigates risks relative to competition.	An inconsistent business strategy that leads to missed opportunities and increased risks because it is not well-adapted to marketplace conditions. Customer retention rates are below those of peers, or the company's actions are inconsistent with its strategy.
Competitors find it difficult to achieve a comparable low-cost position or provide a comparable service offering.	Competitors typically have either a better cost position or better differentiation.
Strong brand equity and reputation is bolstered by strong service quality and customers are confident that the price of their purchase is justified by its quality.	Company has been unable to increase the volume of existing service offerings or expand through new ones and its poor brand equity and reputation make its portfolio of services susceptible to extraneous factors.
Favorable market position, with barriers to entry that effectively reduce--or even eliminate--the threat of new market entrants.	Unfavorable market position and a lack of barriers to entry makes the company vulnerable to competitor actions.

Scale, scope, and diversity

We assess scale, scope, and diversity for a company in the business and consumer services sector based on:

- Market share, relative to peers; and
- Revenue and profit diversity by customers, suppliers, geography, and services.

Market share: Participating in a variety of attractive target markets, combined with greater operating scale, typically results in more stable financial performance during market downturns, in our experience. As such, we evaluate the market share of a company relative to that of close competitors, while considering the size of the target markets. Scale is especially important for a company that aims to lead the market by having the lowest cost of operation.

Diversity: Depending on information availability, we measure diversity in terms of revenue and profitability by customer, end market, and service. We also examine a company's revenue and profit mix between developing and developed markets. In addition, we measure supplier concentration as a percentage of total purchases. Being reliant on a particular supplier or group of suppliers is particularly problematic for distributors, which have less control over the price of the products being distributed, especially if they distribute products where demand is discretionary. We look at both direct and indirect exposure to product pricing; indirect exposure relates to the potential for volume declines because a price increase has reduced consumption.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
No customer or end-market concentrations that would create a dependency.	Concentrations create reliance on one or more customers or end markets.
Group purchasing organizations (GPOs) do not exist or have little negotiating power.	Existing GPOs have strong negotiating power.
No reliance on a particular supplier or group of suppliers.	Reliant on a particular supplier or group of suppliers, especially for distributors exposed to product pricing.
Broad geographic diversification, so that the company is not overly dependent on a single regional or local market.	Narrow geographic focus and reliance on a single regional or local market.
Offers a wide range of services.	Offers a limited range of services and has been unable to expand its service offerings.

Operating efficiency

We assess operating efficiency for a company in the business and consumer services sector based on:

- Expense structure;
- Working capital management;
- Per unit metrics; and
- Reinvestment needs.

Overall, our aim is to measure a company's ability to withstand lower demand or input cost pressures, relative to industry peers.

Expense structure: A flexible cost structure can bolster a company's ability to adjust staff or inventory levels without damaging its service quality, enabling companies to achieve above-average profitability, even if capacity utilization or demand is less than ideal. For example, distributors can reduce expenses by improving their route density. For sales and marketing agencies, the use of full-time, part-time, and seasonal staff can enable them to maintain a staffing level and national presence appropriate to the changing demand level. Where available, we assess the expense structure by examining trends in direct labor expense as a percentage of revenue.

For some segments, such as distribution services, inventory management is a major part of the business model; in these cases, we also assess fill rates (that is, product shipped as a percentage of product ordered).

Working capital management: Most business and consumer service companies have low inventory requirements, except for distribution services companies. Therefore, trends in accounts receivable generally drive their working capital management and we focus on the company's cash conversion cycle and total asset turnover. Volatility in the level of working capital typically stems from delays to the receipt of customer payments. We consider that a company which generates significant revenue from government agencies may be vulnerable to payment delays.

Per unit metrics: Generally, we consider revenue and profit per employee, per facility, and per vehicle, and find that peer comparisons are most useful if we limit the peer group to close competitors operating in similar markets. For asset-light general support services and professional services companies, we typically find per-employee metrics to be the most relevant;

per-facility and per-vehicle metrics are usually most relevant for asset-intense distribution services companies.

Reinvestment needs: Our assessment looks at the reinvestment required to maintain existing operations. Most commonly, we base our view on the level of capital spending on maintenance, as a percentage of revenue. A company's history of overinvestment or underinvestment in its operations will influence its reinvestment needs. In some cases, management provides an estimate of maintenance capex; in other cases, we use our own estimate.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
A flexible cost position that supports above-average profitability, even when demand dips.	Cost position is weaker than peers, for example, because labor is unionized or facilities less efficient.
Ability to adjust staff levels to changes in demand without hurting product and service quality.	Limited capability to manage fixed costs, most of which are staffing costs.
Superior working capital management, such that the level of working capital remains consistent.	Poor working capital management, such that the level of working capital shows swings and volatility.
Solid investment in technology and infrastructure that has boosted growth prospects in terms of revenue and profitability.	Lack of investment in technology and infrastructure has led to a higher cost structure and operations that are less efficient than peers.

Profitability

The EBITDA margin is our primary metric for evaluating the profitability of companies in this sector. However, because margins across the industry's various segments vary significantly, when assessing profitability we may give greater weight to peer comparisons than to the profitability thresholds. For example, food service distribution companies typically have lower EBITDA margins than the rest of the distribution services sector. By comparing against peers that have a similar product mix and regional focus, we can more appropriately assess profitability.

Most significant merger and acquisition transactions in this sector are leveraged buyouts, which distort ROC because asset values are typically written up following these transactions. Given that significant acquisitions can also distort EBITDA, we may instead calculate the SER for a company's historical EBITDA margins. This is usually part of our assessment of the volatility of profitability.

Similarly, where EBITDA has been distorted by currency fluctuations, we will determine SER based on EBITDA margins or ROC.

Financial Risk Profile

Supplementary ratios

Our preferred supplementary ratio for companies that have low working capital or capex requirements is FOCF to debt because we consider that FOCF gives a more accurate indication of how cash flow relates to their financial obligations.

That said, for companies that have high dividend payout ratios in addition to low working capital and capex requirements, we generally consider DCF to debt to be more appropriate because the cash flow available after dividends is a more accurate measure of how much is available for debt service.

Many business and consumer services companies that are owned by financial sponsors have issued debt that requires or allows a portion of interest to be accrued or paid-in-kind. In these cases, we give greater importance to FFO plus cash interest paid to cash interest paid.

Section 7 | Capital Goods

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Business Risk Profile

Competitive advantage

We assess the competitive advantage in the capital goods sector based on:

- Business strategy and market position;
- Product or service mix, including differentiation attributes, and bundling potential;
- Effectiveness of the distribution strategy; and
- Business backlog and record of execution on project work.

Market positioning: Our view of competitive advantage for capital goods companies depends on their relative position in the markets in which they operate, and the characteristics of those industry segments. Strong strategic positioning enables a company to protect or expand its market share while maintaining profitability. We evaluate industry segments on their growth prospects, barriers to entry, capital intensity, and supply-and-demand profile.

Product or service mix: Our assessment of a capital goods company's product or service profile incorporates the degree of uniqueness, customization, or specification in a product portfolio, as well as its expertise in manufacturing, technology, and engineering, and its product development and innovation capabilities. In our view, a company's competitive position is enhanced if it can sell both new equipment and aftermarket parts or services. Aftersales care, including servicing contracts, can increase customer switching costs and provide companies with a more stable income stream that typically has a higher margin.

Effectiveness of distribution strategy: Strong distribution channels often act as effective barriers to entry. In some segments, the ability to provide financing to customers can also help companies differentiate themselves and effectively support product sales. In reviewing distribution strategy, we consider the company's sales force and its distributor or dealership network. We also assess its ability to support technical product sales and cross-sell products, its coverage for technical support and repairs, the timeliness of responses to customer demands, and whether it benefits from exclusivity.

Record of project execution: For capital goods companies that are involved in engineering projects, a demonstrated strong record of project execution, in addition to technical competencies, will often be a key advantage in securing new contracts and customer loyalty and will enhance pricing power. Conversely, a subpar record of project execution, in addition to hurting profitability, will often hinder a company's ability to win new contracts, create a backlog of products, and may limit pricing power.

Sector description

Companies that derive more than half of their revenue from manufacturing, servicing, renting, or distributing industrial equipment or industrial equipment parts.

Subsectors	Typical CPGP
Construction equipment for hire	Capital or asset focus
Electrical components and equipment	Capital or asset focus
Heavy equipment and machinery	Capital or asset focus
Industrial componentry and consumables	Capital or asset focus
Industrial distributors that have an identifiable brand and competitive standing in their market segment	Services and product focus
Companies that have below-average fixed capital intensity and generate more than one-third of revenue from the sale of services	Services and product focus

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Successful strategic positioning, with a stable or growing share of the key markets in which it competes.	No clear strategic advantage, such that market positions are eroding or show a lack of leadership.
Participates in one or more industry segments that have favorable medium-to-long term growth prospects or are well-balanced in terms of supply and demand.	Participates in one or more industry segments that have unfavorable mid-to-long term growth prospects, or where demand is weaker than industry supply.
Achieved pricing power or leadership by using product technology, quality, or service to differentiate its brand and gain recognition.	Unable to differentiate its brands or products in order to command pricing power or leadership.
Generated customer loyalty and gained a degree of negotiating power through one or more of the following: long-term supply contracts, long-standing relationships, product specification into customers' end products, an extensive or exclusive distribution network, proprietary aftermarket parts, and servicing contracts.	Customer loyalty is weak, with low retention or contract renewal rates, and high cancellation rates affecting the backlog. This may be exacerbated by the ease of switching. Revenue from aftermarket sales or service contracts is lacking.
Good bargaining power with suppliers.	A lack of leverage with key vendors and suppliers.
Strong record of project execution.	Record on project and contract execution is lacking or subpar.

Scale, scope, and diversity

We assess scale, scope, and diversity in the capital goods sector based on:

- Size of revenue base, compared with size of target markets;
- Depth and breadth of the product offering;
- End-market diversity;
- Geographic balance of sales, profits, and manufacturing presence; and
- Concentration by customer and supplier.

Although some downturns are severe enough to affect all markets, participating in a variety of attractive markets generally supports more stable financial performance at capital goods companies. Our assessment of scale, scope, and diversity is influenced by the relative attractiveness of a company's markets, in terms of size, expected growth, cyclicality, barriers to entry, and intensity of competition, and how the company has positioned itself in those markets.

Demand for capital goods companies' products may be correlated to the general economic cycle and is therefore often characterized as early, mid, or late cycle. In addition, the length of the production cycle for capital goods may be very short--counted in days--or may last months or even years. Capital goods companies that have a balanced market and product profile typically see more stable revenue and profitability than those that have a more concentrated product portfolio.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Significant product breadth across a variety of business segments and target markets offers a good mix of revenue and profit sources and supports a higher market share.	Limited revenue base or fewer target markets than competitors, or the product mix, revenue, and profit sources demonstrate a lack of diversity.
Participates in a variety of industrial end markets that generally have favorable long-term growth prospects or are not closely correlated.	Participates in only a few markets, in markets that have limited growth prospects, or in markets that are closely correlated.
A good balance of new equipment and replacement, aftermarket, and service revenue.	Narrow product or service breadth, with some commoditization in aftermarket parts and service.
A geographically diversified revenue base and production presence.	Limited geographic diversification (especially for capital goods companies operating in segments of the industry where competition is global) or a concentrated production footprint.
No significant concentration, by customer or supplier, that is not mitigated.	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

We assess operating efficiency in the capital goods sector based on:

- Relative cost position compared with industry peers;
- Cost structure and its ability to absorb a decline in demand or rising input costs; and
- Cost management and working capital characteristics.

Exposure to cyclical demand patterns often makes operating efficiency the most significant determinant of competitiveness in this sector.

Cost position: The main measure we use to compare a capital goods company's cost position with that of its peers is its EBITDA margin profile. We supplement our analysis by using a variety of ratios that highlight different aspects of cost efficiency and capital intensity, such as gross margin, SG&A expenses to sales, and capex to sales. We also compare the company's overall cost and margin profile with those at its various reporting segments in our assessment.

Capital goods companies can achieve efficiencies by using low-cost production facilities or automation, improving the utilization of plant capacity or the rental fleet, and even through proximity to their customers. Conversely, weaker efficiency may stem from structural overcapacity; higher-than-average input costs; labor inflexibilities; outdated asset base or production technologies; or high SG&A expenses.

Cost flexibility: The more flexible a company's cost structure, the more likely it is to be able to limit margin deterioration in a downcycle by reducing costs and passing on increases in input costs. An ability to adjust labor costs in a downcycle or to limit labor cost inflation, and the capacity to pass through raw material prices, are important drivers of flexible cost structures and lower operating leverage compared with peers. We evaluate cost flexibility based on indicators including:

- The proportion of fixed and variable costs (operating leverage);
- Vertical integration and outsourcing;
- The cost of labor, including characteristics such as unionization rates and pension costs; and
- Exposure to raw material or component costs, and the related pass-through profile.

Cost management: Cost management is evaluated by reviewing a company's record of reducing costs, in both good and bad times; the effectiveness of its restructuring programs or lean manufacturing programs; its record of successfully integrating acquisitions; and its working capital management metrics. Some companies--such as power equipment, rail infrastructure, or other companies that undertake engineering procurement and construction contracts--typically carry a backlog of orders or project work. For these, we also compare their production lead times against their peers; the margins associated with the projects in backlog; and the degree of project risks to which companies are exposed.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
EBITDA margins are consistently higher than peers, considering any differences in sales mix.	EBITDA margins are consistently lower than peers, considering any differences in sales mix.
Able to sustain a cost advantage and has demonstrated stronger-than-peers cost management over the business cycle.	At a disadvantage in terms of costs and cost management metrics are weaker than peers.
The cost structure is relatively flexible.	The cost structure is less flexible than average.
Ongoing improvements to the cost structure through the economic cycle, such as lowering structural labor costs; implementing low-cost sourcing; or reducing the number of production facilities and eliminating bottlenecks.	Previous restructuring has not offered tangible savings or there have been operational missteps that frequently prompted recalls, marred quality, or lengthened lead times.

Financial Risk Profile

Supplementary ratios

FOCF to debt is our preferred supplementary ratio for capital goods companies because working capital and capex cycles can significantly shape cash flow generation patterns through the cycle. Historically, capital released by liquidating inventories and trade receivables has meant that FOCF to debt may be stronger than FFO to debt in the early stages of a downturn. Conversely, during an upturn, the need to fund additional working capital can often depress FOCF to debt. Although we may choose to adjust our cash flow/leverage assessment based on the supplementary ratio analysis, if core ratios are improving, we may choose not to adjust.

Equipment rental companies typically incur significant capex during an upturn to maintain and rejuvenate their rental fleet. During a downturn, by contrast, they let the fleet age and often cut capex to a minimum. Therefore, we frequently adjust the cash flow/leverage assessment in the direction of the FOCF-to-debt ratio, if they diverge.

Section 8 | Commodity Chemicals

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Business Risk Profile

Sector description

Companies that derive more than half of their revenue from producing commodity chemicals such as petrochemicals, inorganic chemicals, or fertilizers and other agricultural chemicals.

Subsectors	Typical CPGP
Commodity chemicals	Commodity focus/cost driven
Diversified chemicals	Commodity focus/cost driven
Fertilizers and agricultural chemicals	Commodity focus/cost driven

Competitive advantage

We assess competitive advantage in the commodity chemicals sector based on:

- Market position, and whether we view the company's business strategy as robust and sustainable; and
- Record of executing projects successfully and maintaining sufficient capital investment.

Business strategy: Commodity chemical companies can build up a competitive advantage by selecting and executing strategies that align with their strengths in the markets they participate in. Those that have a more favorable cost position than peers are better able to defend or expand their market share.

Project execution and capital investment: Because many capital projects take several years to complete, we view a record of competent market forecasting and good project execution as imperative to maintaining long-term profitability in the commodity chemicals market. This should be supported by strong technological skills and a history of successful R&D.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Leading or near-leading market positions and has demonstrated the success of its strategic positioning by profitably protecting or growing its share of the key industry segments in which it competes.	Market position is weak, or eroding, and strategic positioning is much weaker than those of the leaders in the industry segments in which it competes.
Participates in one or more industry segments that have favorable growth prospects over the medium-to-long term, and where the balance of supply and demand is advantageous.	Participates in one or more industry segments that have unfavorable growth prospects over the medium-to-long term, and where the balance of supply and demand is detrimental.
Long-term supply contracts or long-standing relationships show that the company has leverage with customers, including recurring customers.	Less stable customer base.
Strong R&D and technology capabilities.	Limited or no R&D or technology capabilities.
Strong record of executing capacity expansions in a timely and efficient manner.	Limited, or no record of expanding capacity or product lines in a timely manner and on budget.

Scale, scope, and diversity

We assess scale, scope, and diversity in the commodity chemicals sector based on:

- Size of revenue base, compared with the size of target markets;
- Diversity of product mix;
- Supplier and customer concentrations;
- Diversity of raw material inputs and end markets; and
- Geographic diversity of its sales, profits, and manufacturing.

Where we assess scale, scope, and diversification as stronger for a commodity chemical company, we would expect exposure to event risk and fluctuations in the market to be lower, and therefore earnings and cash flow to be more stable. Many rated issuers in the commodity chemicals industry are relatively small, niche players that have limited product and geographic diversity and are heavily dependent on a small number of customers or end markets. As a result, they tend to be highly sensitive to small changes in demand, any loss of market share, or adverse market conditions.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Revenue base or target markets are larger than those of other industry players.	Revenue base or target markets are smaller than those of other industry players.
Portfolio is well diversified and products are not all subject to the same external factors--for example, they use different raw materials, and are subject to different regulations and economic cycles.	Portfolio has a narrow focus because the company participates in a very small number of end markets, regions, or product categories, and these have limited growth prospects or are closely correlated to one another.
Products are aimed at variety of end markets that are not closely correlated and have favorable supply and demand fundamentals, with cyclical and noncyclical demand well balanced.	Supply and demand show unfavorable imbalances.
The revenue base and production facilities are both spread across developed and developing markets in different geographic regions or countries.	Production is concentrated at a single location or a very small number of facilities.
There is little reliance on specific suppliers, no significant dependency on a single raw material, and customers are well-diversified.	Customer, supplier, or raw material concentration is high (for instance, the largest customer accounts for 10% or more of sales or operating profit), and this is not mitigated by the characteristics of the customer or supplier base.

Operating efficiency

We assess operating efficiency in the commodity chemicals sector based on:

- Cost position relative to industry peers;
- Flexibility to absorb volatility of demand or input costs through the cost structure; and
- Flexibility of production.

Cost position relative to peers and flexibility of production: These factors are particularly important in the commodity chemical sector. The cost of raw materials and production typically varies by region, so the relative cost and availability of raw materials, energy, and labor can significantly affect a company's cost of production and, thus, its profitability. Companies that focus on bulky or hard-to-ship chemicals can benefit from proximity to key end markets, which can cut transportation costs significantly. Some companies gain a cost advantage through economies of scale or efficient production, including low-cost sourcing and more-efficient production technology. Conversely, structural overcapacity, suboptimal operating rates, outdated production technology, and poorly situated production facilities can weigh on the cost position.

Flexibility of the cost structure: A flexible cost structure offers many benefits, including lower operating leverage than peers, the ability to cut labor costs in a downcycle, and the ability to invest in ongoing efficiency improvements. Combined with good working capital management, it can reduce a company's profit sensitivity to fluctuations in costs. In some cases, commodity chemical companies can change the amount or type of raw material they use as production inputs, either selecting an entirely different material or a different grade of the same material. This bolsters profitability and improves the company's competitive position, relative to peers.

The main measure we use to compare a commodity chemical company's cost position with that of its peers is its EBITDA margin profile. We supplement our analysis by using a variety of ratios that highlight different aspects of cost efficiency and capital intensity, such as the margin over raw material costs, the capacity utilization rate, and the ratio of capital spending to sales.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Profitability is consistently higher than peers, taking into account any differences in sales mix that would affect EBITDA margins.	Profitability is consistently lower than peers, taking into account any differences in sales mix that would affect EBITDA margins.
Able to sustain its cost advantage relative to peers through low-cost production and sourcing.	Cost management is weaker than peers.
Raw materials are internally sourced or raw materials and energy are supplied under beneficial long-term contracts.	Access to raw materials is somewhat constrained.
The cost structure is relatively flexible.	A cost structure that is less flexible than average.
Global production can be optimized by altering the balance of raw material inputs or shifting production to more favorable facilities.	Limited or lack of production flexibility.
Operations show a high degree of vertical or horizontal integration.	Limited integration of operations, which hampers efficiency improvements.

Financial Risk Profile

Supplementary ratios

FOCF to debt is our preferred supplementary ratio for commodity chemicals companies where the core ratios indicate a cash flow/leverage assessment of intermediate or stronger because working capital and capex cycles can significantly shape cash flow generation patterns.

Where the core ratios indicate a cash flow/leverage assessment of significant or weaker, we prioritize a company's ability to service outstanding debt on a near-term basis and would use EBITDA to interest. It is less common for noncash interest to represent a significant portion of interest expense, but in these cases, we may use FFO plus cash interest paid to cash interest paid.

Section 9 | Consumer Durables

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the consumer durables sector based on:

- Market position, including approach to balancing volume growth and margins;
- Presence in a range of consumer markets and distribution channels;
- Product range and differentiation, including brand equity, product innovation, and underlying price power compared with competitors;
- Degree of focus on sustainability; and
- Reinvestment in production, innovation, sales, and marketing.

Market position: Companies in this sector frequently need to adjust their strategy in light of evolving market conditions. Market changes may include a market's pattern of demand and growth prospects, supply capacity in the industry, or the level of promotional activity. When reviewing a company's business strategy, we assess its ability to establish leadership positions in the markets in which it competes, and to protect or increase its market share while maintaining profitability. In our view, even the larger players have limited ability to achieve procurement discounts on raw materials sourcing. That said, strong brand equity can protect gross margin by enabling the company to raise prices without significantly affecting sales volumes.

Market presence and distribution channels: We assess companies on their ability to get products to customers, on their presence in large consumer markets, and on their distribution strategy. Broad, fast-growing distribution channels can enable a company to reach more prospective customers, so we see a variety of channels and strong relationships with the main retailers as positive. Manufacturers may participate in promotional activity to support sales growth and may support their key retail accounts by offering favorable payment terms.

Product range: We look at the number of product segments in which a company operates and the size of its product range in each of these segments. In our view, consumer durables companies that can offer differentiated products or services, or can capitalize on a strong brand name, will generally benefit from greater pricing power. Therefore, we assess the company's record of success with new product launches, and the degree of customization in a company's products, against those of competitors. Products that have innovative features and are more unique tend to inspire greater customer loyalty than more-commoditized products.

Reinvestment: Reinvestment is vital to maintaining a manufacturer's competitive advantage. We expect to see a consistent pattern of cash flow being ploughed back into modernizing production capacities to improve productivity; into R&D to support product innovation and differentiation; into sales infrastructure to increase

Sector description

Companies that derive more than half of their revenue from manufacturing and marketing a variety of durable goods for consumer use.

Subsectors	Typical CPGP
Home furnishings	Services and product focus
Household appliances	Services and product focus
Housewares and specialties	Services and product focus
Leisure products	Services and product focus
Small appliances	Services and product focus

the presence in all distribution channels and to reach consumers; and into marketing to promote the brand and support the pricing power.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Global or regional leading market positions, and a business strategy that supports profitable growth.	Business strategy is inconsistent or poorly adapted to market conditions.
A significant presence in the largest consumer markets, or in fast-growing markets.	Small, local manufacturer in a declining market.
Large product range and presence in the most dynamic product segments, and a history of superior product innovation and strong customer satisfaction.	Most products are commoditized and could be replicated at lower cost by competitors.
Strong brand equity that gives the product a clear price premium relative to most competitors.	Branding is weak and offers no price premium relative to competing brands.
Proven ability and willingness to reinvest in the manufacturing base, combined with a record of successful product launches.	Limited investment in product innovation or production capacity.
Ability to maintain volume growth and strong pricing power.	When the cost of raw materials increases, the company is unable to raise prices without losing market share.
Strong focus on sustainability, which encompasses product design, manufacturing, energy efficiency, service, and repair.	Low or no focus on sustainability.

Scale, scope, and diversity

We assess scale, scope, and diversity in the consumer durables sector based on:

- Geographical diversity by volume of sales and earnings;
- For each product segment, the size and growth potential of each market;
- Depth and breadth of the product offering;
- Localization and variety of production capacities and presence in main distribution channels; and
- Concentration by supplier and customer.

Geographical diversity: Although some downturns are severe enough to depress multiple markets, we consider that participating in a variety of markets will generally support more stable financial performance during market downturns. Our assessment of both scale, scope, diversity, and of competitive advantage is influenced by a consumer durable company's position in its markets and the attractiveness of those markets by size, expected growth, cyclicality, barriers to entry, and intensity of competition. Geographical diversity can protect companies against a decline in demand for durable goods in a particular region or country. Compared with national players, we expect worldwide manufacturers to be better positioned to offset a drop in demand in a specific region, because they can pivot to another region or country that displays more positive market dynamics.

Product diversity: Consumers generally show a preference for brands that meet their needs through a wide range of innovative options. Therefore, a product mix that encompasses a large number of products across several segments also tends to support more stable revenue, by enabling companies to offset a decline in sales within a particular segment.

Production capacities and distribution channels: Manufacturers frequently have to adapt their production capacities and supply chains to meet changes in demand trends, and their ability to do this quickly generally depends on the size and location of their production facilities. We view both size and global reach as important to maintaining access to consumers. Our assessment incorporates how products are distributed and whether companies use multiple online and store-based retail distribution networks.

Customer and supplier concentrations: Manufacturers of consumer durables typically sell to retailers, rather than directly to end buyers, and this can expose them to customer concentration risk. The failure of a major retailer could leave the manufacturer with a large number of unsold products, which will depress revenue and operating cash flow. In cases where the manufacturer recovers its merchandise, it typically incurs additional inventory and transportation costs. Ultimately, the products may be sold at a discount.

We also watch out for supplier concentrations. A default or operational issues at a key supplier can severely disrupt a manufacturer's supply chain and may halt production entirely, weighing on volumes and delaying deliveries to the manufacturer's own customers.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Industry-leading market share.	Low market share and limited growth prospects.
Production facilities are large, as are the revenue and EBITDA base.	Small in terms of production capacity, revenue, or earnings base.
A comprehensive range of products or service offerings, or a large portfolio of well-known brands.	A single product, or limited range of products.
Geographically diverse earnings, generated in markets that have favorable growth prospects.	Present in only a few markets.
Geographically diverse manufacturing base, with little dependence on specific suppliers.	A concentrated manufacturing base, or reliance on a specific or declining distribution channel.
Diverse customer and distribution channels with no large single-name concentrations.	Significant manufacturing and sourcing concentration, or heavy reliance on a single or few customers.

Operating efficiency

We assess operating efficiency in the consumer durables sector based on:

- Flexibility of the cost structure, and its ability to absorb a decline in demand or rising input costs;
- Quality of cost management and working capital management;
- Use of technology and automation; and
- Cost position relative to industry peers.

Cost structure: A flexible cost structure reinforces a company's ability to reduce costs to limit margin deterioration in a downcycle, or to pass on increases in input costs. In assessing cost flexibility, we calculate the proportion of fixed to variable costs, the degree of operating leverage, and productivity and capacity rates. We also evaluate exposure to the price of raw materials and components and to labor and pension costs, as well as examining the flexibility of labor contracts.

Cost position: We consider a company's cost management by reviewing its record of cost reduction during good and bad times, the effectiveness of its restructuring and lean manufacturing programs, its record of successfully integrating acquisitions, and its working capital management, especially when managing inventory and cash conversion. Metrics that have a bearing on our assessment include EBITDA margin, gross margin, and SG&A expenses to revenue. We compare these metrics against peers.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Strong ability to manage working capital swings and operate with high capacity utilization.	Low average capacity utilization at manufacturing facilities.
Size and scale are large enough to enhance purchasing power.	Small size or poor procurement creates an inability to adequately source raw materials or hedge prices, and labor costs are high and rigid.
High productivity levels.	Supply-chain deficiencies prevent the company from controlling costs when the cost of raw materials rises.
Profitability is supported by a lower share of fixed costs and better sourcing capacities than peers.	Cost structure includes a higher share of fixed costs than peers, leading to swings in profitability as soon as demand for products drops.
Extensive use of technology to improve efficiency in manufacturing, logistics, and distribution.	Lack of automation creates inefficiencies in manufacturing, logistics, and distribution.

Financial Risk Profile

Supplementary ratios

FOCF to debt is our preferred supplementary ratio for companies in the consumer durables sector because working capital and capex cycles can significantly shape cash flow generation patterns through the cycle. Historically, cash released from working capital has meant that FOCF to debt may be stronger than FFO to debt in the early stages of a downturn. Conversely, during an upturn, increased working capital needs can depress FOCF to debt. Although we may choose to adjust our cash flow/leverage assessment based on the supplementary ratio analysis, if core ratios are improving, we may choose not to apply a negative adjustment based on a weaker supplementary ratio.

If the preliminary cash flow/leverage assessment is significant or weaker, then we generally give the two coverage ratios--FFO plus cash interest paid to cash interest paid and EBITDA to interest--greater importance. These ratios are important in our analysis of companies that have highly seasonal businesses and therefore demonstrate significant intrayear swings in their working capital investment needs. Such companies typically borrow to fund their increased working capital investment--the coverage ratios capture all their annual interest costs.

Volatility adjustment

We may adjust our cash flow/leverage assessment using the volatility adjustment, depending on company-specific factors, economic cycles, or the company's historical performance within the various subsectors or markets it operates in. For instance, we may classify furniture manufacturers as either volatile or highly volatile.

Section 10 | Consumer Staples And Branded Nondurables

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the consumer staples and branded nondurables sector based on:

- Brand equity;
- Market share and ability to defend and increase market share;
- Effectiveness of the marketing strategy and sales force; and
- Pricing and purchasing power.

Brand equity: We would expect a company that has strong brand equity and a good reputation to command a clear price premium. A strong brand name can also enable companies to successfully extend its use into new product categories. By contrast, asset impairments or the potential for brand impairments may indicate poor brand equity and reputation. Where available, we use third-party independent brand rankings and valuations to support our assessment of brand equity. These measure the strength of brands and provide year-on-year trends.

Market share: To assess a company's current market share and its ability to defend it or increase it, we evaluate the size of its markets and their growth prospects; its share in its key categories, markets, and regions; and its recent and projected performance. In our view, a company that can defend and increase its market share is more likely to adjust its strategy in response to evolving market conditions; be more innovative; enjoy some pricing advantage; and maintain sales growth and profitability, even during adverse economic conditions. Where a company's business strategy is not well adapted to marketplace conditions, it may miss opportunities and be exposed to higher risks than competitors.

Marketing strategy and sales force: An effective marketing strategy and sales force will support the introduction of new products and innovation. We measure revenue from new products as a percentage of total revenue to assess effectiveness. We also examine how favorable a company's sales mix is, and whether it benefits overall margins. Some companies pursue a business strategy based on cost leadership, while others focus on product differentiation. We expect a company's actions to be consistent with its chosen strategy.

Pricing and purchasing power: Pricing power bolsters the company's ability to pass through cost increases to key customers. On the other hand, purchasing power with key suppliers would enable it to avoid accepting cost increases. We compare gross margin trends with those of direct competitors to gauge the company's strength in these areas. We also take into account the company's relationships with customers and suppliers.

Sector description

Companies that derive more than half of their revenue from manufacturing, marketing, and selling branded or private-label nondurable products for consumer use.

Subsectors	Typical CPGP
Alcoholic beverages	Services and product focus
Apparel, footwear, accessories, and luxury goods	Services and product focus
Household products	Services and product focus
Nonalcoholic beverages	Services and product focus
Packaged foods	Services and product focus
Personal products	Services and product focus
Tobacco	Services and product focus

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Products typically command a price premium relative to competitors thanks to its brand equity.	Poor brand equity or high private-label penetration limits the price premium that the company's products can command.
Industry-leading market shares--typically a No. 1 or No. 2 position in its markets, or globally--and a relatively stable or growing share of sizable categories. Key markets and regions have attractive growth prospects.	Market share indicates that it is a follower in its key markets. It may have a stronger position in smaller product categories that have poor growth prospects or are subject to private-label competition.
A realistic business strategy that has proved effective at maintaining or strengthening market share. Competitors typically find it difficult to achieve a comparable low-cost position or offer a comparable product.	Business strategy is inconsistent, poorly executed, or not well-adapted to marketplace conditions. Competitors typically have a better cost position or stronger product differentiation.
Strong product development and innovation has given the company a continuous pipeline of successful high-margin new products.	Innovation has not consistently been successful, and the company is slow to develop and market new products, which limits its ability to raise prices.
Gross margins remain at or above the peer average, even during periods of high inflation.	Gross margins are weaker than peers.
A strong focus on sustainability across product design, sourcing, manufacturing, the supply chain, and customer use.	Sustainability is not well integrated into the business strategy and is limited to a few product lines or business processes.

Scale, scope, and diversity

We assess scale, scope, and diversity in the consumer staples and branded nondurables sector based on:

- 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.

A company that participates in a variety of attractive markets and has good operating scale will have more stable financial performance in market downturns. To measure diversity, we consider sales volume or revenue, and profitability by geography, brands, and product category. We also examine a company's exposure to emerging and mature markets and look for concentrations that could expose the company to risk. These may include reliance on a few customers, a few manufacturing or sourcing locations, or on key commodities.

Companies that operate several sizable brands, or across multiple product categories, have greater protection against concentration risk. Smaller companies may be reliant on one or a few manufacturing facilities or have sourcing concentrations that could expose them to supply-chain disruptions or production delays. That said, we note that concentrations in very large, global product categories carry less risk.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Net sales base is larger than competitors and the company has a dominant market share at the regional or global level. Companies that significantly outpace competitors on net sales and dominate both global and regional markets are typically assessed as strong; those that have net sales below those of the global leaders and lead only in regional markets would be assessed as strong/adequate.	A leading, but not dominant, share of a fragmented and relatively small product category (or a subset of a larger category) that has limited growth prospects, on a regional or national basis.
A comprehensive range of products, product categories, and service offerings.	Offers only a few products and participates in only one or a few niche product categories.
More than five sizable brands and brand extensions with limited brand or category concentration. No more than 50% of revenue is generated from one brand or category.	Few, lesser known, small, or regional brands.
Revenue is generated in several regions and the company is exposed to a mix of developed and developing markets, with no country concentrations over 50%.	Participates in only one region, or a few regions, with limited growth prospects.
A diverse manufacturing base as well as sourcing. The company can switch manufacturing to other facilities, if necessary, and is not reliant on specific key commodities or suppliers.	Significant manufacturing and sourcing concentrations and reliant on a few key suppliers for its top raw material needs.
No single customer contributes more than 25% of net revenue and distribution channels, including e-commerce, are varied.	The company relies on few distribution channels and on one or a few customers, with a single customer accounting for more than 25% of revenue.

Operating efficiency

We assess operating efficiency in the consumer staples and branded nondurables sector based on:

- Operating leverage;
- Cost position and flexibility relative to peers; and
- Sensitivity to volatility in the cost of raw materials and energy.

Operating leverage: We measure operating leverage (that is, fixed costs, relative to variable costs) using statistics such as the percentage change in EBIT over the percentage change in sales; return on assets; or invested capital. We also evaluate working capital productivity based on the company's total asset turnover, inventory turnover, and cash conversion cycle. Higher operating leverage provides a company with the ability to realize scale benefits in product development and production, but can lead to lower profits when sales decline.

Cost position and flexibility relative to peers: Companies that produce consumer staples and branded nondurables can achieve efficiencies by using superior technology and their size and scale to gain cost advantages. For example, they may be able to push suppliers for discounts or improve their profits (measured by gross or EBITDA margin) compared with the peer group, through economies of scale, automation, and investment in technology. Stronger companies are likely to have greater penetration and well-established sales and distribution networks, including a robust e-commerce presence, especially in developed markets. In emerging markets, stronger companies bolster their reach by establishing relationships with large customers or by engaging in joint ventures.

We evaluate cost flexibility based on indicators including:

- The proportion of fixed and variable costs;
- The degree of operating leverage;
- Vertical integration and outsourcing; and
- The cost of labor and other characteristics, such as how much of a company's workforce is unionized and other cost considerations that affect its workforce remuneration.

Sensitivity to volatility in the cost of raw materials and energy: A company that is sensitive to the cost of raw materials and energy may be less able to limit margin deterioration when costs are rising, or mitigate or offset exposure to volatile commodity price swings. Less-sensitive companies are more able to reduce costs and pass on increases in input costs to customers.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Profitability is consistently higher than peers, taking into account any differences in sales mix and average selling price that would affect profit margins.	Profitability is consistently below that of peers.
Strong purchasing power--for example, the volume of its purchases enables the company to demand discounts on key input costs.	Less able than peers to source an adequate supply of raw materials at a good price, potentially because of a lack of size or scale, or because of less-sophisticated procurement processes.
Operating costs as a percentage of sales are below the peer average.	Sales can only be increased by raising operating expenses to noncompetitive levels.
Demand is supported by extensive reach and strong distribution networks, including online channels.	Substantial seasonality in the business and working capital requirements that could lead to excess inventory if seasonal demand is weaker than anticipated.
Extensive use of technology to improve efficiency in manufacturing, logistics, and distribution.	Underutilization of manufacturing facilities.
Focus on energy efficiency, water conservation, waste reduction, and raw material usage through continued investment in production processes, the supply chain, and logistics.	A record of execution issues or disruptions that are likely to contribute to supply-chain deficiencies and operating inefficiency.
Ability to adjust costs through internal efficiencies or outsourcing.	Operating issues or weak execution leading to higher costs.

Profitability

We may adjust our view of a company's profitability based on qualitative factors such as asset turnover or comparison with the peer group. A company with an EBITDA margin slightly below the profitability thresholds may have excellent asset turnover, which boosts ROC. In such a case, we may assess the profitability as stronger than the EBITDA margin table would indicate. Conversely, poor asset turnover may dampen our view of profitability, even when a company has an EBITDA margin slightly above the guideline range. Similarly, we may view profitability as stronger than indicated by the EBITDA margin alone, for a private-label company whose profitability exceeds that of its closest competitors.

Section 11 | Containers And Packaging

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Business Risk Profile

Sector description

Companies that derive more than half of their revenue from manufacturing packaging products out of plastic, paper, metal, or glass.

Subsectors	Typical CPGP
Metal and glass containers	Capital or asset focus
Paper packaging	Capital or asset focus
Plastic packaging	Capital or asset focus

Competitive advantage

We assess competitive advantage in the containers and packaging sector based on:

- Market position and attractiveness;
- Product differentiation;
- Stability of demand;
- Substitution risk from alternative materials; and
- Record of executing strategies to support long-term profitability.

Market position and attractiveness: The packaging industry is typically segmented by the materials it uses: for example, metal, glass, plastic (rigid and flexible), and paper. In assessing the market attractiveness of packaging segments, we evaluate the extent of industry consolidation, and the balance between supply and demand. The level of consolidation among packaging companies and customers affects the competitive dynamics of the various packaging segments, as does pricing discipline among industry players. For example, concentration in the metal can and glass container segments, combined with downsized operations, has tightened the supply/demand balance, allowing companies to raise prices. Meanwhile, overcapacity and intense competition in segments that focus on commoditized products, such as oriented polypropylene film and stretch film, make it difficult to fully pass through increases in the cost of raw materials. Accordingly, we view participation in these segments as a negative rating factor. Although the plastics segment remains highly fragmented, companies can gain a competitive advantage by acquiring complementary products and technologies, or by expanding their geographic and customer bases. Some companies in the segment have also chosen to focus on gaining a leading position in niche markets that attract fewer large players.

Product differentiation: Packaging products are used as advertising at the point of sale, and consumer product companies often relaunch products through improved or distinctive packaging. Therefore, companies typically enjoy higher, more stable profitability if they offer value-added products; for example, offering innovative or unique product designs, or using proprietary technology in the development of products. In our view, graphic design, and features that enhance convenience or functionality are key product differentiators and enable a company to stand out from its competitors. Strong product innovation and the use of innovative technology also serve as barriers to entry and enable packaging companies to build stronger relationships with customers. The stringent requirements that apply to packaging for medical and certain food products, especially the strict regulatory approvals required for pharmaceutical packaging, typically limit a customer's ability to switch between packaging suppliers.

Stability of demand: We consider most packaging demand to be recession-resistant, as the industry primarily serves relatively stable end markets, such as beverages, food, household cleaning products, personal care products, and medical products. To a large extent, the higher the proportion of sales generated in nondiscretionary, stable end markets; the more stable the demand for a company's products will be. Therefore, we view participation in less-stable markets, such as industrial and protective packaging applications, as less favorable. Demand for many containers is seasonal and may be weather-dependent. For companies that rely heavily on the sale of beverage containers, unseasonably cold weather during the peak months (that is, spring and summer) is likely to weigh on operating performance. Demand for agricultural packaging, such as metal food can and fiber-based boxes and containers, is also driven by seasonal changes. These affect both food production and consumer buying habits--volumes may fall if disease, drought, or excessive rain makes vegetable or fruit harvests smaller.

Substitution risk: For packaging companies, substitution risk can arise because a customer switches to a direct competitor, or because it chooses to use an alternative material for its packaging. Some customers also have in-house capabilities that could pose a threat to their suppliers. This is a particular threat for companies that make commodity-like products.

Record of executing strategies: Packaging companies that can demonstrate reliable results have an advantage when bidding for new contracts and find it easier to maintain existing contracts. A strong record of executing changes, such as expanding capacity and launching new products, combined with a history of successful product innovations, ultimately translates into greater pricing power. It also helps companies develop long-standing customer relationships. Conversely, a subpar record can make it more difficult to retain existing customers or secure new contracts.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Able to profitably protect or grow leading market shares in the key industry segments in which it competes, indicating a strong market position.	Low or declining market share in the key industry segments in which it competes, indicating a weak market position.
Participates in attractive markets that have favorable medium- and long-term growth prospects or a good balance between supply and demand.	Participates in unattractive markets that have unfavorable medium- and long-term growth prospects and excess capacity.
Strong pricing power, or price leadership, based on a high degree of product differentiation and innovation.	Limited pricing power and few products that can easily be differentiated from competitors.
Sells a high percentage of products into stable end markets where substitution risk from alternative materials is low.	Sells relatively few products into stable end markets and has high exposure to substitution risk.
Long-term supply contracts, long-standing relationships, or products tailored to meet a customer's specifications provide a strong bargaining position when negotiating with customers and there is evidence of customer loyalty.	High switching rates compared with peers indicate that customers show little loyalty and commoditized products with minimal innovation limit the company's ability to negotiate with customers.
Strong position when negotiating with suppliers of raw materials.	Weak position when negotiating with suppliers of raw materials.
Pricing power and profitability are supported by strong record of executing capacity expansions, developing innovative products, and winning contracts with new and existing customers.	Pricing power and profitability are undermined by a weak record of executing capacity expansions, developing innovative products, or winning contracts with new and existing customers.

Scale, scope, and diversity

We assess scale, scope, and diversity in the containers and packaging sector based on:

- Depth and breadth of a company's product offerings;
- Size of its revenue base, relative to that of its target markets;
- Customer and supplier concentrations;
- Diversity of types of packaging material;
- Diversity of its end markets; and
- Geographic balance of its sales, profits, and manufacturing presence.

Product and target market depth and breadth: Increasingly, size and scale are becoming key competitive differentiators, as many customers are choosing to work with fewer suppliers. Packaging companies that have significant market share and scale can spread their overhead costs, better serve customers globally, and make more efficient use of their R&D spending over a wider range of products. They may also benefit from marketing, distribution, purchasing, and economy-of-scale advantages. We consider smaller suppliers to be more vulnerable. They have a weaker negotiating position with customers and their lack of scale undermines their ability to manufacture at a lower cost.

Often, larger operations with greater size and scale also have stronger product diversity, which we view as essential. A broad product mix provides better credit protection and can make earnings and cash flow more stable. Conversely, a narrow product mix makes a company vulnerable to competitive pressures, substitution from alternative materials, and changes in customer preferences.

Customer and supplier concentrations: Levels of interdependence between packaging suppliers and customers vary across the industry subsegments. This could somewhat offset the risks associated with a dependence on a few customers, but in general, we find that significant customer concentrations typically limit pricing flexibility. Where sales to a single customer exceed 10% of total sales, operating performance could be damaged if that customer were to face its own business or financial challenges. That said, we see sole-supplier arrangements with customers as favorable, and product development and proprietary technologies can often result in long-standing customer relationships.

Packaging material and end-market diversity: Offering packaging in a variety of materials can mitigate substitution risk, to some extent, especially where a rise in input costs makes one material less convenient than another. Regulatory changes or consumer preferences sometimes trigger a rapid change in packaging preferences in a specific end market. In these cases, diversity by packaging type or end market can reduce the impact. End-market diversity also protects beverage and food packaging companies against seasonal- or weather-related declines in demand.

Geographic diversity: Successful companies that have global leadership positions in their respective products are better able to serve the growing needs of multinational customers that operate in food and beverage end markets. Demand for packaging in developed countries is generally stable, reflecting the maturity of the markets. Companies can benefit from growing demand if they successfully expand into emerging regions, where product penetration and per-capita consumption may be low. That said, they may also face increased country risks, including those stemming from political issues or adverse foreign exchange movements. In addition, competition may be more intense in markets that have higher long-term growth potential.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Significant product breadth and diversity in terms of business segments, substrates, revenue mix, or profit sources enables the company to achieve a larger revenue base or target larger markets than other industry participants.	Revenue base or target markets are smaller than those of other industry participants because of a narrow product mix or limited diversity in terms of business segments, substrates, and sources of revenue and profit.
The markets in which the company participates are varied, not closely correlated, and generally have favorable long-term growth prospects.	The markets in which the company participates are limited in number, have limited growth prospects, or are closely correlated to one another.
Good balance of revenue and profit, generated from different substrates.	Concentrated in one substrate or a subsegment of one substrate.
Revenue base and production facilities show geographic diversity.	Revenue base and production facilities are geographically concentrated.
Customer or supplier concentrations are either insignificant or mitigated.	The largest customer accounts for 10% or more of sales or operating profits, indicating a high degree of customer concentration and the customer or supplier base has no characteristics that could mitigate concentrations.

Operating efficiency

We assess operating efficiency in the containers and packaging sector based on:

- Cost position compared with industry peers;
- Ability to pass through the cost of raw material;
- Capacity utilization rates;
- Proximity of manufacturing facilities to customer locations; and
- Use of lean manufacturing practices.

Cost position and management: We primarily analyze a packaging company's cost position on its EBITDA margin profile. We also consider various indicators of cost efficiency and capital intensity, such as the mix of raw materials, what percentage of contracts include pass-through provisions for raw material costs, the time lag before any increase in these costs are passed through, and capex to sales. Our analysis takes into account the overall cost and margin profile for a packaging company, as well as those of its various reporting segments.

A record of successfully improving working capital management, integrating systems, or integrating acquisitions indicates strong cost management. Packaging companies can achieve efficiencies through economies of scale; production efficiencies and higher operating rates; lower costs or better sourcing arrangements; proximity to customers; effective quality controls; or lower overhead costs.

Conversely, where a company's cost-management measures are unsuccessful, we may see structural overcapacity; suboptimal operating rates; higher-than-average input costs for labor and raw materials; or high SG&A expenses. Companies may also operate at a greater distance from customers and apply limited quality controls.

Maintaining its focus on enhancing operating efficiency and reducing costs is critical to preserving a company's profitability over time, in our view. Competition has become so intense that some companies grant pricing concessions during renewal negotiations, in order to retain multiyear contracts with customers. Maximizing operating rates is key to producing glass and metal containers profitably; companies typically achieve some capacity enhancement as they make ongoing improvements to their operating efficiency. By contrast, in the plastic packaging industry, optimal operating rates vary because products come in a much broader range of shapes and sizes. Sometimes, plastic packaging manufacturers make shorter runs because the required volume for a customized product is much lower.

Proximity of manufacturing facilities to customer locations: Although imports pose a growing threat for packaging that is easier to transport, such as commodity-type films, shipping heavier containers over long distances remains uneconomical. We consider that having manufacturing facilities close to customer locations still bolsters operating efficiency, in most cases. Proximity lowers shipping costs and improves logistics for most types of packaging, and can strengthen customer relationships in general.

Ability to pass through the cost of raw materials: Excluding disposable foodservice packaging and film and flexible plastic packaging, the contracts under which metal, glass, and rigid plastic packaging products are sold mostly include clauses allowing producers to pass through fluctuations in the cost of raw materials or energy to customers, after a time lag. We consider this ability to be a critical factor when determining the operating efficiency of packaging companies.

Raw materials such as plastic resins, steel, and aluminum account for about 50%-60% of the cost of goods sold for plastic and metal packaging. If suppliers lack an effective means of passing on the often-volatile price of these materials to customers, it is difficult to preserve operating margins, which affects our assessment of business risk at packaging companies.

This is particularly important for manufacturers of glass packaging, which is significantly more capital- and energy-intensive and susceptible to swings in the cost of raw materials such as soda ash. We view the ability of glass packaging manufacturers to hedge energy costs and pass through higher energy and raw material costs as crucial for preserving operating profitability.

We generally view film and flexible packaging producers less favorably than we view more value-added rigid plastic packaging producers, because the former have limited ability to pass through higher costs to customers, compared with the latter. For example, when resin costs increase, film and flexible packaging producers must temporarily absorb them. This erodes their operating results and depresses internally generated cash flow.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Profitability is consistently higher than peers, taking into account any differences in sales mix that would affect profit margins.	Profitability is consistently lower than peers, taking into account any differences in sales mix that would affect profit margins.
Benefits from a sustainable cost advantage compared with peers over the business cycle, based on successful cost-management measures.	At a disadvantage in terms of costs, so that cost management metrics are weaker than peers.
A strong ability to pass through raw material costs and a high percentage of contracts that include raw material pass-through provisions	A lack of contractual or other protections makes it difficult to pass through raw material costs effectively.
Ongoing improvements to the cost structure, such as reducing the cost of labor, implementing low-cost sourcing, rationalizing capacity or other lean manufacturing practices that have a measurable effect.	Lack of measurable lean manufacturing practices and limited record of cost-reduction initiatives, which have not offered tangible savings, so that labor or sourcing costs remain above the industry average and there is excess capacity.

Financial Risk Profile

Supplementary ratios

FOCF to debt is our preferred supplementary ratio for packaging companies because working capital and capex cycles can significantly shape their cash flow generation patterns. Historically, capital released from working capital has meant that FOCF to debt may be stronger than FFO to debt in the early stages of a downturn. Conversely, during an upturn, the need to fund additional working capital can often depress FOCF to debt. Although we may choose to adjust our preliminary cash flow/leverage assessment based on the supplementary ratio analysis, if the preliminary assessment is improving, we may choose not to apply a negative adjustment based on a weaker supplementary ratio.

For companies that return more than one-half of their FOCF to shareholders through dividends, we may consider DCF to debt to be the most relevant supplementary ratio.

Section 12 | Contract Drilling

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the contract drilling sector based on:

- Technological complexity of equipment and asset quality;
- Revenue predictability, measured through the business backlog;
- Market position and customer relationships; and
- Operating record.

Asset quality: Over the course of a business cycle, we would expect a contract drilling company that has a fleet of higher-quality assets to achieve higher margins and less volatile profits. Customers will pay a premium for newer rigs that have the latest technical capabilities, especially those that can be used for ultra deep-water or harsh-environment drilling.

Revenue predictability: The length and terms of the company's contracts may enhance the stability and predictability of its revenue and cash flow and bolster the quality of its backlog. In reviewing the business strategy and market positioning of a contract driller, we consider characteristics such as growth prospects and the balance between supply and demand of the specific industry subsegments, markets, and regions in which the company operates. Where applicable, we take into account whether drilling activities are seasonal.

Customer relationships and operating record: Contract drilling companies that maintain their equipment well and have exemplary safety and environmental records, and skilled crews, can foster strong, lasting relationships with the most desirable customers: major oil companies and large independent companies. These customers typically plan sizable, multiyear drilling programs, well in advance. In addition, their capex tends to be larger and less volatile than that of smaller upstream firms, which supports stronger credit quality. We see safety and environmental controls as important because these reduce the risk of a catastrophic operating failure.

Sector description

Companies that derive more than half of their revenue by leasing drilling rigs to exploration and production companies, enabling them to find and extract crude oil and natural gas.

Subsectors	Typical CPGP
Offshore	Capital or asset focus
Onshore	Commodity focus/scale driven

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
A fleet of relatively new, high-specification rigs that can command a premium, such as drillships, late-generation semisubmersibles, and heavy-duty jack-up rigs.	A fleet weighted toward commodity drilling rigs such as low horsepower onshore rigs or standard jack-ups, or that comprises older and less technically capable assets.
Most business is subject to long-term contracts so that revenue and margins are protected from a potential drop in market day rates or competition from other companies.	A prevalence of short-term or spot contracts, or revenue is highly seasonal.
Participation in industry segments that have favorable medium- and long-term growth prospects or positive supply-and-demand characteristics.	Participation in industry segments that have unfavorable medium- and long-term growth prospects or negative supply-and-demand characteristics.
A strong operating record, including good safety and environmental records, well-maintained equipment, skilled crews, excellent customer service, and long-standing relationships with high-quality customers.	A weak or short operating record and few established relationships with major oil companies, or customers present higher risks.

Scale, scope, and diversity

We assess scale, scope, and diversity in the contract drilling sector based on:

- Relative size of the fleet;
- Geographic and product diversity; and
- Concentration by customer.

Fleet size: Contract drilling companies that have large fleets tend to exhibit less performance volatility than those with smaller fleets.

Geographic and product diversity: A driller's presence in multiple markets improves its geographic diversity and competitive position by enhancing its ability to serve larger customers. Major exploration and production (E&P) companies prefer to contract with companies that have greater geographic reach and are better able to support global operations. Therefore, geographically diverse fleets tend to improve performance and reduce volatility for contract drilling companies. Offshore contract drillers can follow demand and redeploy assets to other geographic regions, which we view as a positive rating factor.

Certain country or jurisdiction risk factors relevant to the contract drilling industry may not be captured in our country risk assessment. Examples include the requirement to use local logistics support and infrastructure, and the nature and extent of regulations specific to drilling for oil and gas.

Customer diversity: Our assessment of customer diversity is based on the percentage of revenue and profit derived from each of the top 10 customers. We also consider our own assessment of the major customers' prospects, their likely future spending on exploration and development, and their record of paying suppliers on time. Certain national oil companies have historically paid suppliers erratically.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
A sizable fleet with multiple classes of equipment.	A small number of rigs.
Participation in five or more basins, with assets showing no significant concentration in any one of those basins.	Participation in only one or two regions, which account for most of a company's assets employed.
Participation in several uncorrelated geographical markets and regions that have generally favorable characteristics, long-term growth prospects, and relatively low country risk.	Participation in one or a few correlated geographical markets that have unfavorable characteristics, such as limited growth prospects, high country risk, or unfavorable regulation specific to the sector.
No significant customer concentration that is unmitigated.	Significant customer concentration.

Operating efficiency

We assess operating efficiency in the contract drilling sector based on:

- Cost position compared with industry peers;
- Flexibility of its cost structure; and
- Cost management practices.

Cost position: We primarily base our view of contract drilling companies' cost positions, relative to peers, on their EBITDA margin profile over the cycle. In addition, we consider various indicators of cost efficiency and capital intensity, such as gross margin, SG&A expenses to sales, and capex to sales. Our analysis considers the overall cost and margin profile for a contract drilling company, as well as those of its various reporting segments.

Flexibility of the cost structure: A flexible cost structure will enable companies to absorb declining demand or withstand rising input costs. In our assessment, we consider the company's ability to contain its operating costs during both good and bad times, and its ability to maintain profitability, even when the cycle has reached its trough. This may be affected by the degree to which costs have escalated, labor cost characteristics, and its success in implementing cost-cutting actions. Other indicators include the company's historical asset utilization rates, compared with industrywide asset utilization rates; and its record of successfully integrating acquisitions. On the technology side, we evaluate its ability to construct, mobilize, and start up new rigs, and its capacity to develop improved technology.

Cost management practices: In reviewing cost management practices, we may assess customer contracts based on their provisions. For example, we look at the extent to which contracts protect against cost escalations affecting raw materials and other inputs; payment terms; the extent of counterparty credit risk and currency risks; and force majeure and other termination provisions. We also consider the enforceability of contracts. Pragmatic, commercial considerations may outweigh the legally enforceability of a contract, in some cases. It is unlikely, for example, that the company would take legal action against a major customer, when it could agree to renegotiate the contract provisions.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
High asset utilization rates over the cycle, compared with the industry average.	Low asset utilization rates, compared with the industry average.
Profitability measures exceed those of peers over the cycle.	Profitability lags that of peers due to a cost disadvantage.
The cost structure is relatively flexible and includes the ability to lower labor costs during a downturn.	A cost structure that is less flexible than the industry average.
Ongoing improvements to the cost structure over the cycle, such as lowering structural labor costs; implementing low-cost sourcing; or reducing the number of production facilities and eliminating bottlenecks.	Cost structure is burdened by high fixed or semifixed costs, labor inflexibilities, outdated asset base or production technologies, or vertical integration that did not create tangible savings.
Good record of acquiring or constructing new rigs and mobilizing them.	Poor record of acquiring or constructing new rigs and mobilizing them.

Profitability

Because the performance of contract drillers is subject to cyclical fluctuations, we do not assess profitability based on global benchmarks over a whole cycle. Instead, we compare financial measures against peers within the oilfield service and contract drilling sector: the top 25% of the peer group are classified as above average, the middle 50% as average, and the bottom 25% as below average. Some companies may have strengths and weaknesses that create a bias toward above- or below-average profitability, in which case we may override the quartile-based assessment.

Financial Risk Profile

Supplementary ratios

FOCF to debt is our preferred supplementary ratio for contract drilling companies because capital spending cycles can significantly shape cash flow generation patterns through the cycle. These companies typically incur significant capex in an upturn because they have to maintain and upgrade their fleet. During a downturn, by contrast, they typically let their fleets age and often cut capex to a minimum. Therefore, we frequently adjust the cash flow/leverage assessment in the direction of the FOCF-to-debt ratio.

We may use DCF to debt for companies that pay a material proportion of their cash flow to shareholders as dividends or via share repurchases. This helps us to evaluate how they use cash and how that may affect debt repayment. Companies that make more aggressive shareholder returns, as indicated by a weak ratio, may see reduced liquidity when crude oil and natural gas prices are falling and demand for rigs is declining, which could weaken their ability to service their debt.

Modifiers

Financial policy

If a company lacks a credible plan to finance the high cost of a new rig well ahead of the delivery date, we typically view this as negative to our rating and may adjust our anchor down to reflect this risk. Most new rigs are tied to multiyear contracts, signed in advance. Speculative newbuilds, which are not tied to a pre-signed contract, are especially risky.

Section 13 | Engineering And Construction

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the engineering and construction (E&C) sector based on the company's:

- Share of its key markets or regions, as an indicator of its brand effectiveness or ability to execute;
- Reputation and brand recognition;
- Perceived financial stability; and
- Technology offering.

Market position: A strong market position offers a significant competitive advantage. In our experience, most E&C companies that have a sizable backlog under contract and larger market shares relative to the addressable market are able to gain a pricing advantage and those with effective sales teams can maintain sales performance when market conditions are unfavorable.

Reputation and brand recognition: Clients in the E&C sector are reluctant to award contracts to lesser-known companies that may not have the experience to successfully execute a contract. A strong reputation is therefore vital if an E&C company is to secure contracts--particularly larger ones. Reputation can also influence customer loyalty and pricing power. In our view, the leaders in this sector have demonstrated the capacity to operate in various regions and successfully execute projects around the world. In assessing reputation, we consider a company's history of completing contracted work on time and on budget, while complying with local and regional laws and regulations. We also examine safety records, including the frequency of safety incidents.

Perceived financial stability: Large E&C projects can sometimes take years to complete. Clients do not want to have to change contractors in the middle of the project because their contractor is in financial distress. Indeed, they sometimes require companies to provide letters of credit (LOCs) from banks or surety bonding lines in order to bid for and secure work. If an E&C company is to continue to secure work, it is therefore important that both clients and the providers of LOCs and surety bonds perceive it as financially stable.

This provides customers with the necessary assurance that an E&C company has sufficient financial strength to withstand unexpected occurrences, such as large cost overruns. In assessing the perception of financial stability, however, we also incorporate the company's record of winning long-term projects and of providing ample surety bonding and LOC capacity for bidding purposes. Where companies exhibit a willingness to take on more leverage, or have little or no capacity to offer surety bonds or LOCs, we see perceived financial stability as weaker.

Technology offering: E&C companies can gain a considerable competitive advantage through a strong technology and engineering offering. Those that can

Sector description

Companies that derive more than half of their revenue from engineering, design, construction, and maintenance work.

Subsectors	Typical CPGP
Capital-intensive projects such as concession investments	Capital or asset focus
Design and traditional engineering and construction services	Services and product focus

offer differentiated services generally benefit from stronger pricing power than those offering more commoditized services. Customers may also prove more loyal to companies that have more-specialized technology offerings, such as in-demand, proprietary technologies or designs. We see companies that provide commoditized E&C services as vulnerable to new competitors entering their markets and to increased pricing pressure from customers.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
A strong reputation and brand recognition.	A weak reputation and limited brand recognition.
A stronger market position compared with peers.	A weaker market position compared with peers.
An ability to win projects based on perceived financial stability and surety bond capacity or LOCs for bidding purposes.	Not perceived as financially stable, or limited surety bond or LOC capacity when bidding on contracts.
A more-specialized technology offering.	A more-commoditized product offering.

Scale, scope, and diversity

We assess scale, scope, and diversity in the E&C sector based on:

- Size of a company's revenue base or sales volume, by number of projects or contracts;
- Diversity and attractiveness of the end markets it participates in;
- Degree of concentration by customer and type of contract; and
- Range of services provided.

Revenue base: The size of an E&C company's revenue base, compared with the size of its target markets, can indicate the strength of its market position. Because E&C companies that have larger revenue bases typically also have the market share, reach, scale, and capacity to operate in various regions, they gain an advantage when bidding for contracts. Clients, especially those with complex global projects, are reluctant to award contracts to companies that may lack the scale or resource infrastructure to successfully execute them.

When assessing the revenue base, we may exclude any flowthrough revenue derived by purchasing material or equipment on behalf of clients without making any profit on the transaction. Conversely, we may include revenue that was excluded from total sales because the E&C company attributed it to a joint venture.

Diversification: Participating in a variety of attractive end markets generally supports more stable financial performance at E&C companies, especially if the various end markets operate on different cycles. Although some downturns are severe enough to affect all markets, diversification helps E&C companies limit exposure to risks related to any one of its projects, or to a single region, end market, or client. Our assessment of scale, scope, and diversity is influenced by the number of contracts a company typically works on, and their diversity in terms of contracted amount. We also consider the degree of concentration in the backlog by end markets, geographies, and clients. If we regard diversification as stronger than average, we would not expect the company to be significantly hampered by difficulties affecting a single project or customer.

Range of services: In general, we expect a broader range of service offerings to boost a company's scale, scope, and diversity. The types of service most commonly offered by E&C

companies are engineering and design, construction, and maintenance work. Of these, we consider that construction carries the most risk, with large, complex, first-of-a-kind, fixed-price construction projects being the riskiest because of their higher potential for cost overruns.

As projects become more complex, E&C companies that can provide a range of services throughout the project life cycle gain an advantage. Such companies tend to be more successful in securing repeat contracts and can capitalize on their long-term relationships with customers. In some cases, construction companies will collaborate with their client throughout the construction process to minimize costs for the client.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Revenue base and target market are larger than those of other industry participants.	Revenue base and target market are limited in size compared with those of other industry participants.
Contracts and backlogs are well-diversified by geography, end market, client, and contract size.	Contracts and contract backlogs show some concentration to a single or a few regions, end markets, clients, or contracts.
Offers a wide range of services, including engineering and design, procurement, construction, and maintenance work.	Offers a limited range of services or provides a niche service.

Operating efficiency

We assess operating efficiency in the E&C sector based on:

- The company's record on contract wins; changes to the value of its contract backlog; and the rate of order cancellations by market, compared with peers;
- Project execution, measured by the size and frequency of realized contract losses; and
- The degree of flexibility in the company's cost structure.

Contracts: Highly competitive bidding processes can distort rates of contract wins for E&C issuers, particularly if the process is undisciplined. If the number of contract wins is temporarily elevated or unsustainably high, it could signal weaker operating efficiency and margin degradation. We look at each company's contract wins, the changes in the value of its backlog, and its record of order cancellations, over a period of time, to normalize for one-time events.

Execution: Completing an E&C project profitably and on time is difficult. As a result, reported results can be highly variable. Project execution risks inherent in the industry include client cancellations and delays, change orders, client litigation, the availability of raw materials, problems with labor availability and productivity, weather events, and subcontractor risk. That said, an E&C company can significantly improve its operational performance if it has effective internal risk management policies and procedures. These may relate to project selection, contract provisions, management of subcontractors, or pricing, and can steer a company away from projects that are exposed to more risk.

We acknowledge that it is impossible to avoid all project risks, all the time. Therefore, all E&C companies, even those we assess as strong, will experience occasional cost overruns. However, in our view, companies that experience infrequent, smaller cost overruns are better operators than those that more frequently incur charges against projects or face very large cost overruns. Historically, fixed-priced contracts have proved to be most exposed to cost overruns--reimbursable contracts mitigate cost volatility and typically generate steady earnings and cash flow.

Cost structure: Most companies in the E&C industry have a relatively low proportion of fixed costs, which is an advantage. A low fixed-cost base allows a company to quickly scale back overhead expenses during a cyclical downturn. Nevertheless, because the level of vertical integration varies from company to company, so does their cost structure. Some companies are deeply vertically integrated and have in-house building material sites and machinery fleets. This can provide them with direct access to strategic raw materials, often at a low cost. Although this is an advantage when capacity utilization is high or raw materials are in short supply, it can be a burden when capacity utilization falls. Where the bulk of services are performed in-house, cost flexibility in a cyclical downturn is generally lower and capital intensity may be relatively high.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Compared with peers, contract win rate is high, the backlog is sizable, and there are fewer order cancellations.	Lower contract win rate and smaller backlog than peers.
Contract losses are infrequent compared with peers.	Frequent contract losses or prolonged delays.
Project execution has been successful over several years, with most projects being profitable for the contractor and delivered on time and on budget.	Project execution has been poor for several years, with the contractor making sustained losses on projects following delays or cost overruns.
A relatively flexible cost structure, as demonstrated by lower operating leverage than peers.	Cost structure is less flexible than average because of high fixed or semifixed costs.
Profitability is less sensitive than peers to inflation or other fluctuations in the cost of labor or raw materials.	Profitability and margins are highly sensitive to inflation or other fluctuations in the cost of labor or raw materials.

Financial Risk Profile

Supplementary ratios

Because E&C companies are often subject to high working capital swings, FOCF to debt is our preferred supplementary ratio. We consider it likely to offer a more accurate measure of a company's cash flow in relation to its financial risk profile than EBITDA or FFO, which may overstate financial strength. Working capital may be affected by advanced payments on projects, delays in collecting accounts receivable in a downturn, or fast growth.

Capex on maintenance, as a percentage of sales, is typically fairly low for E&C companies, which supports their FOCF generation. Where a company's capex as a percentage of sales is relatively high, compared with peers, CFO to debt may be a more useful supplementary ratio.

Volatility adjustment

CFO at many E&C companies is volatile because they experience large working capital swings and may be subject to unexpected (and often large) cost overruns. Therefore, our final cash flow/leverage assessment for some E&C companies may include a volatility adjustment.

Modifiers

Liquidity

E&C companies--especially general contractors that take on large, fixed-price contracts--often receive sizable payments in advance. These are worked off over a relatively short period of time as the project moves from the engineering phase to the procurement and construction stages. Thus, the total cash balance, by itself, does not allow us to assess liquidity in full. Our assessment of liquidity therefore incorporates the potential for working capital swings associated with advanced payments or contract-related liabilities.

In addition, clients often require E&C companies to offer a large LOC as proof of financial security when they bid on a contract. In our view, such a financing arrangement can erode the overall liquidity position. The banks typically take the amount covered by a LOC out of an existing line of credit, such as a revolving credit agreement. For each project requiring a LOC that a company bids on, or is executing, it has to restrict a portion of its liquidity. Therefore, we subtract the LOC outstanding from the available revolving credit facility.

Section 14 | Environmental Services

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the environmental services sector based on:

- Market position;
- Quality of service; and
- Asset base.

Market position: Having a leading share of a market can give a company a significant competitive advantage over peers, by helping to bolster pricing and protect sales performance in a downturn. When assessing market position, we consider the size of a company's revenue base, its market share by region and segment, and the degree of competition in the markets in which it participates. In some specialized markets, environmental services companies benefit from contractual protections, which increase their pricing power and make their customer base more stable. Therefore, we consider companies that focus on specialized markets more favorably than those that are heavily exposed to price-competitive markets. Market position may also be strengthened by effective marketing strategies, a strong sales force, and demonstrated technical expertise, particularly as new opportunities for growth arise.

Quality of service: Demonstrably better service quality, as measured by the timeliness of service and low number of missed pick-ups, can also give environmental services companies an advantage and help them generate sales. Other measures we consider when evaluating the quality of service include contract renewal rates, reputation, and brand recognition in the marketplace.

Asset base: Access to suitable waste stream disposal facilities that have ample capacity can represent a significant barrier to entry. Fixed assets such as landfill sites and incinerators are important, highly profitable, and rarely available for acquisition. Constructing new facilities, including installing the plant and equipment required, is time-consuming and entails significant capital investment. Most importantly, it is usually difficult to secure the government support and permits necessary to construct such facilities. In our view, companies that only control one aspect of the waste disposal process are at a disadvantage, compared with vertically integrated environmental services companies. In our view, integrated firms are more likely to sustain solid profitability through commodity price cycles. We consider specialized equipment, such as truck fleets enabled with telematics to optimize routing efficiency or those that run on alternative fuels or power sources to optimize operational costs, to be part of a healthy asset base.

Sector description

Companies that derive more than half of their revenue from the collection, treatment, transportation, and disposal of various waste streams.

Subsectors	Typical CPGP
Environmental facilities	Services and product focus
Solid waste	Capital or asset focus

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Leading market share positions in the markets in which it competes.	Rarely holds a leadership or near-leadership position in the markets in which it participates.
Participation in favorable markets, such as those where contractual protections apply.	Operates in unfavorable markets subject to intense price competition, where pricing gains are difficult to achieve.
High contract renewal rates, timely collections, greater ease of billing, favorable brand recognition, and other factors indicate that quality of service is high.	Quality of service is average or poor.
Vertical integration offers control over multiple aspects of the value chain, including the possession of (or cost-effective access to) key fixed assets such as landfill sites and incinerators that have sufficient capacity.	Operations are not vertically integrated, or the company is unable to obtain access to disposal sites and other fixed assets at an affordable price, forcing it to pay high prices to suppliers for access.

Scale, scope, and diversity

We assess scale, scope, and diversity in the environmental services sector based on:

- The location and diversity of the markets in which the company operates;
- Market characteristics such as supply and demand and the range of services on offer; and
- Concentration by customers and suppliers.

Although some downturns are severe enough to affect all markets, we generally expect participation in a variety of attractive markets to support more stable financial performance during market downturns. We evaluate the relative attractiveness of markets based on size, demographics, growth prospects, and the intensity of competition. Potential profitability and exposure to downside risks are both heavily influenced by the diversity and attractiveness of the markets in which an environmental services company competes, and how it has positioned itself in those markets. We therefore examine its pricing and service offerings in each market. Customer and supplier relationships and concentrations are also important to our assessment.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Participates in multiple markets that have favorable supply-and-demand fundamentals and are not closely correlated.	Participates in only a few markets and these have limited growth prospects, are highly competitive, or are closely correlated to one another.
Offers a range of services that cover different aspects of waste management, or different types of waste.	Services are narrowly focused on a particular customer segment or type of waste stream, especially a competitive or downscale segment that is more capital-intensive, cyclical, or commodity price-dependent.
Customers and suppliers show broad diversification.	Customers or suppliers are highly concentrated.

Operating efficiency

We assess operating efficiency in the environmental services sector based on:

- The company's ability to achieve economies of scale;
- Cost position, relative to peers;
- Relative flexibility of the cost structure; and
- Productivity, including how that is affected by the efficiency of the company's route network.

Economies of scale: More efficient operations generally enable an environmental services company to generate larger profit margins than its peers, whatever the prevailing market conditions. Companies typically achieve better operating margins than their peers by commanding higher prices and through the stronger operating leverage provided by scale. Larger companies gain an advantage when competing at a national level for contracts with commercial customers. If they have centralized purchasing functions, they can harness their size to obtain lower prices from fleet and equipment suppliers and negotiate lower interest rates and insurance costs. They also have the resources required to invest in technology, including up-to-date information systems and routing software. In small, local markets, scale may boost the pricing power of an environmental services company, but only by a limited amount.

Cost position: We also consider its relative cost position versus industry peers; whether its cost structure is flexible enough to absorb 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.

Our primary measure of a company's cost position is its EBITDA margin profile. We also monitor other measures that help us evaluate the company's cost efficiency and capital intensity. These include gross margin, SG&A expenses to sales, and capex to sales. We consider both the overall cost and margin profile of the company and those of its various reporting segments to be important aspects of our analysis. For example, the ratio of SG&A expenses to sales is compared against peers to establish whether overhead costs are being managed at a competitive level.

Cost structure: A flexible cost structure reinforces a company's ability to reduce costs to limit margin deterioration in a downcycle, or to pass on increases in input costs. In assessing cost flexibility, we calculate the proportion of fixed to variable costs, the operating leverage, and exposure to fuel costs and third-party disposal costs (including the pass-through profile for such costs). We also evaluate the effectiveness of vertical integration and outsourcing, the extent of unionization in the workforce, and any pension cost considerations.

Route efficiency: Efficient routing is vital for transport-intensive services such as solid waste collection. The strongest companies are able to ensure that their collection routes are optimized to reduce the time and expense required to service a given route. Relevant factors include route length, number of customers served, and types of waste collected. Increasingly, services companies have outfitted truck fleets with telematics and sensors to assist in this effort.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Economies of scale and other efficiencies enable profitability to consistently exceed the peer average.	Profitability is consistently weaker than peers.
Effective and cost competitive administrative functions (as measured by SG&A costs as a percentage of revenue)	Ineffective or costly administrative functions (as measured by SG&A costs as a percentage of revenue)
Routing is executed in a highly efficient manner and the efficiency of routing is continuously monitored to improve productivity.	A poor record of timely and efficient waste collection, which may be indicative of suboptimal route efficiency and inadequate planning.
Strong relationships with the labor force, including any unions.	A history of workforce disruptions and delays in negotiating amenable bargaining agreements with organized labor that have significantly dented profitability.

Financial Risk Profile

Supplementary ratios

If the preliminary cash flow/leverage assessment is intermediate or stronger, our preferred supplementary ratio for companies that provide environmental services is FOCF to debt. This enables us to incorporate the impact of working capital and capital spending cycles, which can significantly shape cash flow generation patterns through the cycle. If the preliminary cash flow/leverage assessment is significant or weaker, we may give greater importance to FFO plus cash interest paid to cash interest paid and EBITDA to interest.

Volatility tables

We apply the low volatility table to an environmental services company if it meets all of the following conditions:

- It has a CICRA of '2' or lower;
- It derives most of its revenue or EBITDA from its participation in less-cyclical segments of the industry that are not particularly exposed to commodity price volatility (such as franchise-protected markets in municipal waste, or medical waste);
- It has a preliminary competitive position assessment of strong or better; and
- Volatility of profitability has historically been assessed at '1', and is expected to remain at that level.

We apply the medial volatility table if a company:

- Has a CICRA of '2' or lower;
- Derives most of its revenue or EBITDA from its participation in less-cyclical segments of the industry that are not particularly exposed to commodity price;
- Has a preliminary competitive position assessment of satisfactory or better; and
- Volatility of profitability has historically been assessed as '2' or better, and is expected to remain at that level.

In all other cases, we apply the standard volatility table.

Section 15 | Forest And Paper Products

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the forest and paper products sector based on:

- Business strategy and market position, based on market share and the attractiveness of end markets;
- The proportion of revenue or earnings derived from value-added products;
- Any barriers to entry that could protect participants in a company's key segments; and
- Commitment and ability to sustain reinvestment in production assets.

Business strategy: Most products in the forest and paper products industry are commodities and offer limited opportunity for differentiation. In addition, demand in some markets is subject to structural, long-term decline because of the rise of competing technologies and materials. As a result, we consider the relative attractiveness of a company's end markets and its market share by sales or position.

Product mix: To assess the attractiveness of a company's product mix, we consider product-line maturity; growth potential; substitution risks; and the balance between value-added and commodity-grade products. Although demand for graphic paper is in structural decline, we see adequate long-term growth potential for certain wood fiber-based products (such as corrugated packaging, biofuels, etc.).

In our view, there is less scope for a forest and paper products company to achieve higher-value products through quality, service, and brand recognition, compared with other industry sectors. Nevertheless, it can be an important consideration in some instances--such as biofuels or specialty pulp.

Barriers to entry: The high capital intensity of the industry creates a barrier to entry. In addition, because transportation costs are high, relative to the value of most forest and paper products, close proximity to key raw materials, such as wood fiber, can also provide a strong barrier to entry. Some companies mitigate this through vertical integration.

Sector description

Companies that derive more than half of their revenue from harvesting timber or converting wood or recycled cellulose fiber into products to be sold as pulp, paper, or converted wood products.

Subsectors	Typical CPGP
Forest	Commodity focus/cost driven
Paper	Commodity focus/cost driven

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
A strategy that is well-aligned with industry trends and is expected to enable the company to maintain its market position within relatively attractive product markets.	Weak market share and position in unattractive product markets.
A higher-than-average proportion of value-added products, giving the company the ability to influence pricing.	The company typically follows others on pricing or has material exposure to structural declining product segments, for example, graphic paper.
Able to sustain capital investment, combined with affordable energy sources, proximity to raw materials, and access to customers.	Low barriers to entry in its key product segments.
A demonstrated commitment to reinvesting in its production assets throughout the cycle.	An inability to sustain the required level of investment in its production assets throughout the cycle.

Scale, scope, and diversity

We assess scale, scope, and diversity in the forest and paper products sector based on:

- The size of a company's revenue base and unit sales volumes;
- The extent to which cash flow is derived from products or geographic regions that are independent or that have low correlation;
- The number of producing assets operated; and
- Concentration by customer or supplier.

Revenue base: Size typically offers forest and paper products companies a competitive advantage. Greater breadth and scope of operations, combined with economies of scale, contribute to higher profitability. In addition, we expect a company that operates more producing assets, across multiple locations, to find it easier to mitigate the risks to its operating performance associated with unforeseen or required maintenance shutdowns of its plants or mills.

Geographic and product diversity: Where companies offer a portfolio of products across different geographic regions, they typically see less volatility in their operating and financial performance. The less correlated the regions, the greater the protection against adverse changes to economic prospects in one of the regions or a fall in demand or pricing pressures affecting a particular product. For example, globally diverse forest and paper products companies that have exposure to the 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.

Concentration by customer or supplier: We view a concentrated customer base as a risk because the loss of a key customer (for commercial or other reasons) could negatively affect the company. We also consider whether reliance on certain suppliers could cause operational problems. Levels of interdependence between suppliers and customers in the forest and paper products industry vary; this may somewhat offset the risks associated with a dependence on a few customers. In our view, sole-supplier arrangements, such as a long-term agreement to supply wood fiber to a customer, are favorable. Forest and paper products companies may also harness proprietary technologies or joint product development to create or bolster long-standing relationships with customers.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Larger than peers by revenue (linked to production capacity).	Smaller than peers by revenue.
Offers a broad range of products serving different end markets; typically, the various products are subject to different economic cycles in their respective geographies.	A narrow range of product offerings serving a single end market.
Operates multiple production assets.	Few production assets, or just one.
No significant customer concentrations, or any dependence is mitigated.	Assets, customers, or end markets show geographic concentration.
Raw materials are readily available from multiple sources, or stocks have been secured through long-term arrangements with well-capitalized suppliers.	An overreliance on a single supplier, which cannot be easily replaced, for raw materials.

Operating efficiency

We assess operating efficiency in the forest and paper products sector based on:

- Age, size, and location of production assets;
- Affordability and access to raw materials and energy (including the benefits of any vertical integration); and
- Flexibility of labor costs.

Operating efficiency is important to our view of competitive position in this industry because most forest and paper products are commodities that offer no price differentiation. Therefore, profitability is ultimately determined by efficiency.

Characteristics of production assets: Newer or larger machines offer efficiency benefits, not only by lowering energy costs but also by improving staff productivity. Although logistical costs will be lower if production is located near customers, we consider whether there are disadvantages in terms of labor cost flexibility and energy and fiber supply costs.

Raw materials: Access to low-cost raw materials is key. For most paper and wood products manufacturers, fiber costs comprise a significant proportion of total operating costs. Therefore, we view access to low-cost fiber as a competitive strength. Likewise, companies may purchase energy at favorable prices thanks to favorable market or contract conditions in specific countries or regions, through direct ownership of energy generation, or by integrating pulp and paper production. Integrated production is generally more energy and cost-efficient than stand-alone production. The ability to hedge costs can also offer a competitive advantage.

Vertical integration is capital-intensive but can offer advantages. Where a company sources its own raw materials (for example, wood fiber, recycled fiber, and pulp) or energy, it pays only the production cost. If using an external provider, it would pay the production and logistics cost, and the supplier's margin. We usually view a high degree of forward integration into converted and finished products--for example, a containerboard manufacturer that also produces boxes--as positive because box prices are higher and more stable than containerboard prices, and the manufacturer is less exposed to volatile open-market sales. On the other hand, a high degree of vertical integration also leads to lower capacity utilizations in an economic downturn.

Labor cost: Labor legislation and agreements can directly affect how operations are set up and their cost flexibility. A good relationship between a company and its workforce, including any relationship with unions, can minimize the risk of costly strikes.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Efficient production assets lead to lower costs than those of peers.	Production assets are more expensive to run than those of peers.
The company has proved its ability to reduce costs and manage fixed and variable costs during cyclical downturns.	Limited ability to pass along increases in the cost of raw materials and energy.
Vertically integrated operations that offer the company a high degree of self-sufficiency regarding its key input costs.	Third-party providers supply a substantial proportion of the company's raw materials and energy.
Relatively flexible labor costs compared with peers.	The labor cost structure is less flexible than that of peers.
EBITDA margins exceed the peer average, based on peers operating in similar product markets.	EBITDA margins are below the peer average, based on peers operating in similar product markets.

Financial Risk Profile

Volatility adjustment

Over an economic cycle, pulp, paper, and wood products producers frequently experience a high degree of cash flow volatility, which may not be captured in our quantitative analysis. To account for the understatement of volatility, we typically adjust our cash flow/leverage assessment for these companies by up to two categories.

Section 16 | Health Care Equipment

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the health care equipment sector based on:

- The size and nature of the markets in which a company competes; and
- The bases of competition, and the way in which it distinguishes itself from competitors.

Markets: Health care equipment manufacturers gain a competitive advantage if their products are used in well-established global markets with good growth prospects. We also evaluate how medically necessary the product is--those used in discretionary procedures will be more sensitive to economic conditions.

Competition: Barriers to entry are defined mostly by the level of technological sophistication and complexity required to develop and manufacture its products. The technological sophistication of companies that develop, manufacture, and market health care equipment varies widely. Some employ cutting-edge science to produce patent-protected products that address highly specific therapeutic and diagnostic applications. Others focus on producing more-generic, commoditized, and conventional medical equipment.

Companies that target the high-technology subsector benefit from stronger pricing flexibility and high technological and regulatory barriers to entry. Although these products can be complex to design and produce, if they demonstrate clinical utility, they often command premium prices and attractive margins. Items such as implantable cardiovascular and orthopedic devices, and some surgical instruments, can also be patented, which limits competition. Because competitors may release superior products at any time, making older products obsolete, we view ongoing investment in R&D as critical. In addition, new products typically command higher prices than aging products, which can help sustain or improve a company's competitive position.

In the lower-technology subsectors, where barriers to entry are lower and products are standardized, price plays greater role in customer decision-making and market share is often more volatile. For example, for conventional supplies, market competition is largely focused on price. Still, certain products engender a high degree of customer loyalty--for example, consumers can be reluctant to switch brand for their contact lens. Similarly, physicians are often hesitant to switch orthopedic implants and related surgical tools with which they have had good experiences. That said, although brand recognition and good relationships with distributors, physicians, and hospitals can give some protection, when purchasing is undertaking by hospital administrators, who tend to have less direct contact with the equipment, substitution risk tends to increase.

Sector description

Companies that derive more than half of their revenue from developing, manufacturing, or marketing medical equipment at various levels of technology.

Subsectors	Typical CPGP
High technology	Product focus/scale driven
Low technology	Commodity focus/scale driven

Other adjustments

Our sector-specific liquidity considerations are described in "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers."

Competitive advantage: typical characteristics*

Strong or strong/adequate	Adequate/weak or weak
Established position in a sizable global market	Market or subsector is fragmented and there are many competitors; or is small and unproven.
Market or subsector has shown above-average growth.	Mature market or subsector that has declining prospects and where consumer demand is faltering.
High medical necessity of the products offers some resistance against recession.	Products have relatively low medical necessity, are used in discretionary procedures, or are costly and more sensitive to economic conditions.
The company has a strong pipeline of new or enhanced products.	Narrow product pipeline and a lack of significant growth drivers.
Products offer proven benefits, such as higher treatment rates, fewer adverse events, or faster or less-invasive treatment; use more sophisticated and superior technology than competing products; and have favorable brand recognition.	Products are low-tech and not differentiated, and volume and market share are potentially volatile; or reputation and sales have been damaged by a history of material or repeated product recalls, regulatory sanctions for marketing practices, or manufacturing problems.
Products engender a high degree of customer loyalty.	Purchase decisions for its products are made by hospital administrators; products are vulnerable to substitution from within or outside the industry.
Consumables, especially those used with proprietary products, account for a significant percentage of sales, creating a stable and recurring revenue stream.	Sales comprise mostly of large equipment that can be volatile over business cycles.
The company uses direct distribution channels in local and key foreign markets, and its sales force has a strong relationship with customers.	The company sells a significant percentage of its products through distributors; or lacks clout with distributors, physicians, and hospitals.
Its R&D spending (both on an absolute basis and as a percentage of revenue) is at least comparable to peers'. The company's R&D strategy is consistent with its capabilities and market conditions, and it's willing and able to buy desired technology.	Its R&D spending is low relative to peers' (on an absolute basis and as a percentage of revenue); or its R&D efforts are overly ambitious, spread too thin, or inadequate.
Complex technology and patents deter competition, and nearly all sales are in countries where patent protection laws are strong (more relevant for high-tech products).	Its products are subject to rapid obsolescence, and the company is likely to fall behind technologically.

*Excluding contract manufacturers.

Contract manufacturers: Health care equipment companies may outsource manufacturing to contract manufacturers, which specialize in certain materials or technologies and can provide the service at lower price. The contract manufacturers subsegment is fragmented, highly competitive, and price-sensitive. Generally, we assess contract manufacturers as having only a weak or adequate/weak competitive advantage because their customers have much stronger bargaining power than they do. Price sensitivity is lower in faster-growing, innovative end markets, which improves the market dynamics for contract manufacturers in these sectors. Special manufacturing expertise and development capabilities, as well as physical proximity to clients' facilities, give contract manufacturers a competitive advantage.

Scale, scope, and diversity

We assess scale, scope, and diversity in the health care equipment sector based on:

- Diversity of products, medical specialties and end use, and geographies;
- Market share and performance; and
- The company's size (generally defined by revenue).

Diversity: Diversity is the main factor in our overall assessment of scale, scope, and diversity in this sector. 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 also reduces exposure to changes in therapeutic techniques. Geographic diversity can protect a company against a decline in profit resulting from unfavorable economic, reimbursement, regulatory, or other developments in a specific country or region.

Market share and performance: We consider a company's absolute market share and relative to its competitors. Some markets are not clearly defined; for example, medical devices can sometimes compete head-on with pharmaceuticals that treat the same medical condition.

We view companies that are gaining market share more favorably. A first-mover advantage, for example, can help a company establish a leading market position and engender customer loyalty. Consumers have historically been hesitant to switch to alternatives, which benefits the manufacturers of certain products sold directly to consumers--such as contact lenses. A similar effect protects the leading manufacturer of many complex medical devices and tools, such as orthopedic implants and ancillary surgical tools. Having mastered one option, many physicians have shown reluctance to retrain on a competing product. Maintaining market share may be harder if companies produce lower-technology, commodity-like products, or operate in more-fragmented and competitive markets where sales depend more on price. Many countries operate single-payor government systems and put out a tender for product purchases. Price is a key factor in deciding which company is awarded the contract in these cases. Similarly, private hospitals may be part of a system that uses a group purchasing organization.

Scale and size: A large revenue base can bolster a company's market position because its greater scale is associated with greater resources. These enable the company to discover or acquire cutting-edge technologies, develop new products, maintain a robust product pipeline, and conduct clinical trials. Given medical device manufacturers' high fixed costs, economies of scale can lead to higher margins and offset pricing pressures. By contrast, a small revenue base can limit a company's ability to invest in R&D, its sales force, information technology (IT), and other paths to growth.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
Its products have varied end uses in multiple medical specialties.	The company has a narrow end user or customer base, or it has a single medical specialty.
A broad range of specific products within each category or line.	It offers a single product or a narrow product line.
Sales are balanced between the large U.S. market and other markets, with no concentration in one country, and the company participates in favorable emerging markets.	Sales are all in one country or are concentrated in a small region.
Within its subsectors, it has a leading market share and few formidable competitors.	The company competes with larger players that have greater resources.
Market share is growing or stable.	Market share is declining.
Revenue base is larger than that of competitors, and its economies of scale in manufacturing and marketing give it an advantage when developing new products.	Revenue base is small, so that resources for R&D, sales force and IT are limited.
Life science companies	
Life sciences products are sold to diverse end markets, such as pharmaceuticals, education, health care, energy, chemicals, and food.	Relies on sales to governments, or to entities that depend on government funding.
Strong or strong/adequate	**Adequate/weak or weak**
Contract manufacturers	
Its top customer or product accounts for less than 5% of revenue.	One customer or product accounts for 20% or more of revenue.

Its top 10 customers or products account for less than 50% of revenue.	Its top five customers or products account for 80% or more of revenue.

Contract manufacturers: These companies are especially exposed to customer and product concentration risks. Their customers may move production of a product in-house, cancel production entirely, or select a competitor to develop the next generation of a product. Less often, quality problems or financial distress at the customer end may prompt them to decrease the volume of business or even sever their relationship with the contract manufacturer entirely.

Operating efficiency

We assess operating efficiency in the health care equipment sector based on:

- Cost position compared with peers in the same subsector;
- Cost management and working capital characteristics; and
- Ability to navigate complex patent and regulatory approval processes.

Cost position and management: A strong cost position will bolster profitability even when growth slows or revenue falls. To evaluate the cost position relative to peers, we examine trends in the EBITDA margin. We also consider ratios such as inventory turnover and days' sales outstanding (DSOs), which highlight different aspects of working capital management.

Management of regulatory process: For companies that make more complex medical equipment, which can be patented and may also be regulated, we look for indications that the company is able to navigate the patent and regulatory approval process smoothly. We would see a history of regulatory sanctions (whether for marketing practices or manufacturing problems) as a weakness. A reputation for high quality is essential to success in this industry. Material or repeated quality problems or product recalls would limit our assessment, especially if the company was unable to remedy the problem quickly. To maintain a robust and resilient supply chain, we consider that companies need to look beyond their own facilities. This makes capacity management especially relevant for contract manufacturers.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Superior cost position boosts profit margins and ROC above that of peers.	Cost structure is less flexible than average; cost increases cannot be passed through; and profitability is declining because of slower growth or a decline in revenue.
Margins remain stable, even in adverse conditions.	A pronounced decline in profitability when revenue falls or growth slows.
Skilled at navigating the patent and regulatory approval processes.	Limited experience or a poor record of navigating patent or regulatory approval processes.
It has multiple manufacturing and distribution facilities; the company is able to move production lines from one site to another relatively easily.	Reliance on one or a few manufacturing facilities or a dependence on suppliers that have had problems in the past.
Supply chain is robust and resilient.	History of quality problems and product recalls that were not quickly remedied; or regulatory sanctions prompted by marketing practices or manufacturing issues.
Record of good working capital management so that inventory turnover is above-average, and receivables are not left outstanding for long.	Poor working capital management; physical capacity is not well matched to requirements or is not flexible; or staffing cannot be easily adjusted.

Financial Risk Profile

Supplementary ratios

If the preliminary cash flow/leverage assessment indicated by the core ratios is significant or weaker, we typically focus on EBITDA to interest when refining our view. When a company has PIK debt, PIK preferred stock, or low-coupon convertible debt, we may also consider FFO plus cash interest paid to cash interest paid to recognize the lower ongoing cash expense. Interest coverage ratios enable us to incorporate the ongoing lack of or low mandatory cash expense.

We use CFO to debt, FOCF to debt, or DCF to debt to provide additional insight for issuers that are lower rated; have large amounts of floating-rate debt; or whose capital requirements or working capital requirements are higher than those of peers, such as companies that lease large equipment to customers or contract manufacturers that need to invest in new machinery in order to win new contracts.

Section 17 | Health Care Services

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the health care services sector based on:

- The company's position in its markets, and the competitive environments in which it operates;
- The mechanisms used for payments and reimbursement, and the company's relationships with private payors; and
- How services are differentiated from competitors, including in terms of quality.

It is rare for us to classify a health care services provider as having a strong competitive advantage as they are subject to government influence, face limited price flexibility, and tend to operate in fragmented local markets.

Competitive environment: Each health care service provider usually operates in numerous local markets. When assessing the competitive landscape in a specific market, we focus on the number of competitors and the degree of consolidation. In addition, we compare organic growth at the company with that of its subsector or market. Where service provision is subject to tender, we assess the company's record of winning and retaining contracts.

Competitors may include government-owned and other not-for-profit facilities. The former may provide services to a large number of patients who are insured through government programs and incur few, or no direct costs. Not-for-profit facilities may enjoy tax advantages, subsidies, or other benefits that give them a competitive advantage.

Payment and reimbursement: Health services are typically provided under a country-specific regulatory framework. The frameworks and contracts under which a specific company operates may bolster or limit a company's competitive position. For example, where governments provide reimbursements, the transparency and predictability of the payments may vary, even where services are provided under contract. We also consider whether the portion of revenue a company receives from private insurers compares favorably or unfavorably with that received by other providers.

Differentiation and service quality: In health care, providers may need to demonstrate the quality of their services to multiple stakeholders: consumers; professionals; the government agencies that provide referrals; those who award contracts to provide services; and other third-party payors. A company that can effectively differentiate itself can not only gain a competitive advantage, it may also operate more efficiently. For each company, we consider the location of facilities and monitor specific service quality indicators such as readmission rates, rates of hospital-acquired infections, and patient satisfaction scores. In the U.S., we track star ratings for Medicare-managed care. In some markets, patient loyalty, in the

Sector description

Companies that derive more than half of their revenue by providing for-profit health care services to patients.

Subsectors	Typical CPGP
Health care services	Commodity focus/scale driven

form of return visits for further treatment, can help us distinguish providers where quality is strong.

Competitive advantage: typical characteristics

Strong or strong/adequate*	Adequate/weak or weak
Competes in markets that has few participants or has a dominant share of its local markets.	Competes in a subsector or market that has numerous competitors and low barriers to entry.
Operates under a regulatory environment and government payment regime that is transparent and predictable.	The regulatory framework or national health care system is volatile or underdeveloped; government policies could result in material stranded assets.
It is paid or reimbursed under long-term government contracts that include upward-only adjustments or allow for upward adjustments for external economic factors such as inflation; it consistently wins and retains contracts in contract-based markets.	It is exposed to competitive bidding.
It has a strong bargaining position with private insurers or other private third-party payors (for example, employers) and obtains favorable payments compared with those of other providers in its subsector and market.	Receives unfavorable payments from private insurers, compared with those of other providers in its subsector and market.
Volume and revenue growth consistently outpaces that in its subsector or markets and same-store volume and revenue growth trends are favorable.	Volume and revenue growth lags that in its subsector or markets; or revenue is significantly more volatile than that in the wider health care services industry or its subsector and markets.
Consumers, professionals, and government agencies that provide referrals, those who award contracts to provide services, and other third-party payors view the company positively; quality measures are above average, including measures of patient loyalty such as repeat visits, which facilitates the attraction and retention of professional staff.	Quality metrics are weak, or are reputed to be poor, and its facilities are poorly located.
If it chooses to compete for payors/patients on the basis of price, it is a low-cost provider.	Its cost structure, operating practices, or quality are poorly suited for its business model, which is based on population health management.

*Strong is rarely applied.

Scale, scope, and diversity

We assess scale, scope, and diversity in the health care services sector based on:

- The diversity of services offered and subsectors served;
- Geographic diversity; and
- The payor profile, that is, the diversity and stability of revenue sources.

Although large scale can provide a platform for good operating efficiency, we tend to view scale as less important to our assessment. In addition, market share has limited impact on our credit analysis because limited data is available and many health care service markets are highly fragmented. In addition, health care service providers generally lack pricing power, particularly if patients are insured through government programs. That said, where a company is typically the sole or a leading provider in markets that have very few competitors, market share may support our assessment of both scale, scope, and diversity, and competitive advantage.

Services and markets: A provider that focuses on a single field of medicine, or a specific service, is exposed to changes in medical practice, as well as the risk that the government may cut the reimbursement rate for a particular service. Either could trigger a sharp drop in earnings and cash flow at a narrowly focused health care service provider. For similar reasons, we consider a company that participates in multiple subsectors to be stronger than one that targets only one subsector, such as behavioral hospitals, cancer centers, or nursing homes.

Geographic diversity: We view favorably companies that operate in geographically diverse markets where demographic trends, economic environments, payment regimes, and payors differ. Those that focus on a specific country or region are more exposed to the risk that profits will be hit by unfavorable economic, reimbursement, regulatory, or other developments. In the U.S., the payment rates and other criteria used in the Medicaid program are established at state level. As a result, if a company generates a significant proportion of its revenue from Medicaid, we monitor concentration at the state level. Similarly, even though employers or insurers typically pay for workers' compensation care, we evaluate concentration by state because payment rates are set at the state level in the U.S.

The payor profile: Payor concentration, which causes revenue and profit concentration, affects a large number of health care service providers. As a result, very few players in this sector are assessed as having strong scale, scope, and diversity. Most health care services providers generate all their revenue from governments, private insurers, and patients. Typically, private payors pay a higher price than the government. Therefore, we view private revenue sources more favorably than government sources. In some cases, such as for companies that provide outsourced services, the company generates a material proportion of its revenue from employers and other health care service providers, such as hospitals and doctors; it may have greater flexibility to negotiate prices with such customers.

When evaluating the diversity and stability of revenue sources, we consider the percentage of revenue generated from any single government or private source. Some central governments make direct payments for health services or operate national organizations such as Medicare or the U.K.'s National Health Service. Payments may also come from regional government sources, such as state Medicaid programs or U.K. local authorities. Where companies provide services under contracts, we evaluate the percentage of revenue generated through its largest contracts. In addition, we compare the payor mix against the market average and determine the degree of concentration by private insurer.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate*	Adequate/weak or weak
Offers a wide range of services and treats or monitors patients that have a wide variety of medical conditions (examples include acute care or general hospitals or clinical labs that have extensive test menus).	Treats or monitors patients that have only a few narrowly defined medical conditions (examples include treatment for end-stage renal disease or substance abuse, or anatomic pathology laboratory services).
Dependence on government revenue is low, or mitigated by a payment mechanism that provides multiyear revenue and stable profits.	Dependence on government revenue is high and unmitigated; or revenue depends on a small number of private contracts.
Generates no more than 35% of revenue from a single government source.	Generates more than 50% of revenue from one government source or a single government contract.
Generates no more than 25% of revenue (or EBITDA, if available) from a single government contract.	Generates more than 80% of revenue from its top two contracts.
Generates no more than 10% of revenue from all Medicaid programs combined.	Generates more than 25% of revenue from all Medicaid programs combined.
Generates no more than 15% of revenue from a single private insurer.	Generates more than 30% of revenue from a single private insurer.
Generates no more than 5% of revenue from any customer, excluding governments and insurers.	Generates more than 25% of revenue from any customer, excluding governments and insurers.
It operates in multiple countries, of which at least two contribute 30% or more of revenue each (or EBITDA, if available); 20 or more local markets (or catchment areas, if available); or more than 10 states or regions.	It operates in fewer than 10 local markets or states.
It generates less than 20% of revenue in its top region and less than 50% in the top five combined.	It generates more than 80% of revenue from its top two local markets.
For companies that provide workers' compensation care, and where employers pay state-regulated rates, no state accounts for more than 10% of revenue.	For companies that provide workers' compensation care, and where employers pay state-regulated rates, one state accounts for more than 25% of revenue.
Has the flexibility to set prices for 20% or more of its revenue.	Limited price-setting flexibility.

*Strong is rarely applied.

Operating efficiency

We assess operating efficiency in the health care services sector based on:

- Profitability compared with subsector peers, based on factors including economies of scale, and measured by EBITDA margins or ROC;
- Ability to set terms with suppliers and landlords (where relevant);
- Capacity utilization relative to subsector peers and, for population health managers, its ability to estimate utilization and costs;
- The cost and flexibility of the labor pool, and turnover among the professional staff;
- Management of bad debts and level of uncompensated care (if relevant); and
- Service quality relative to subsector peers.

When we assess a health care services company's operating efficiency, we generally compare its profitability and cost structure against a peer group of companies that provide similar services and receive similar payment rates, in the same subsector and country.

In our view, strong operating efficiency is most important for companies that use a business model based on population health management. We consider good underwriting, demonstrated by accuracy in estimating utilization and costs, and strong price negotiation skills to be indicators of strong operating efficiency. Providers with stronger operating efficiency may also use centralized billing, sophisticated revenue cycle management, inbound or outbound call centers, and sophisticated electronic health records to achieve economies of scale and higher service quality than peers.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
EBITDA margin or ROC is higher than peers in its subsector due to factors including economies of scale.	It has lower EBITDA margins or returns on capital than its peers in its subsector;
Labor is more flexible or lower in cost than peers in its subsector or direct competitors and it can adjust staffing in line with volumes, while maintaining quality.	Labor costs are inflexible or subject to rigid rules imposed by a union or the government; staffing cannot be adjusted in line with volumes; and pension costs are high.
Capacity utilization is above average for its subsector or it maintains solid profitability, even when capacity utilization is weaker.	Capacity utilization is below-average for its subsector.
Turnover of professional staff is below average for its subsector.	Turnover of professional staff is higher than average for its subsector.
It obtains favorable terms from suppliers.	A history of unsuccessful cost reduction programs and limited ability to reduce variable or fixed costs has made it less efficient than competitors in its subsector.
The cost of bad debts has been relatively stable, enabling the company to accurately estimate such losses without needing significant adjustments.	It has had erratic bad debt expenses.
Quality measures are well above the peer average for its subsector.	Reimbursement has been meaningfully reduced because of substandard quality.
If it uses a population health management business model, it has a record of accurately estimating costs.	Uncompensated care costs are above average for its subsector, with no mitigants.
Favorable lease terms for its core facilities.	Lease terms for its core facilities are onerous (for example, rents can be escalated steeply).

Financial Risk Profile

Supplementary ratios

If the preliminary cash flow/leverage assessment is significant or weaker, our preferred supplementary ratio is usually EBITDA to interest. When a company has PIK debt, PIK preferred stock, or low-coupon convertible debt, we may also consider FFO plus cash interest paid to cash interest paid to recognize the lower ongoing cash expense.

Because health care services companies often carry a high adjusted debt burden, we view their ability to meet cash interest and lease payments as critical. If they have high rent expenses, we may use EBITDAR coverage as a supplementary ratio. This ratio enables us to incorporate a company's ability to cover all fixed charges and is especially important for companies at the lower end of the credit spectrum, where coverage of interest and rent may be marginal. In addition, the ratio helps us compare companies that own more property (potentially financed with debt) against companies that lease most of their properties. When calculating EBITDAR coverage, we use reported rent expenses for historical periods and estimate actual rent expenses for future periods.

Health care services: EBITDAR coverage scale

	EBITDAR to interest plus rent (x)
Minimal	>8.0
Modest	>5.0-8.0
Intermediate	>3.0-5.0
Significant	>2.5-3.0
Aggressive	=>2.2-2.5
Highly leveraged	<2.2

We use CFO to debt, FOCF to debt, and DCF to debt less often. Not only do few health care services companies have a preliminary cash flow/leverage assessment of intermediate or stronger but also, we find these ratios do not generally provide additional insight. In part, this is because health care service companies generally have moderate fixed and working capital requirements, relative to all other industries.

Section 18 | Homebuilders And Real Estate Developers

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the homebuilders and real estate developers sector based on:

- Size and market share;
- Business strategy;
- Marketing strategy;
- Approach to land procurement; and
- Capacity to offer sales support.

Size and market share: Market position is key to our assessment of competitive advantage for homebuilders and real estate developers. Greater scale can offer significant competitive advantages. We consider size in terms of revenue base and unit sales, and market share. Typically, larger real estate companies find it easier to attract capital, which improves their access to land parcels in well-located areas. Large homebuilders and developers can also make use of economies of scale and retain access to the best subcontractors and vendors. These factors are important to maintaining a pricing advantage, even in a downturn. Larger companies also benefit from investment in customer relationship management systems.

Business strategy: The ability to execute on business strategy is also critical, especially for developers. We examine management's ability to plan and implement projects that bring in sufficient returns without exposing the company to undue risks. A developer may differentiate itself from the competition by successfully undertaking large-scale, complex projects such as those that incorporate multiple property types. However, such projects increase delivery, execution, and concentration risks. In certain markets, developers must also consider whether to focus on residential or commercial projects and determine whether to sell properties for an immediate return or hold them to garner recurring income.

Marketing strategy: We also consider the company's ability to adapt to changing market conditions, and the stability of its markets. Companies that operate in emerging markets are exposed to greater risks as demand may be more volatile and reliable market data is generally not available.

In assessing the effectiveness of a company's marketing strategy, relative to similarly constituted peers, we consider:

- The rate of new orders;
- Contract backlog value;
- Order cancellation rates by market; and
- Average selling price per unit, compared with market averages.

Sector description

Companies that develop or acquire properties for sale. While homebuilders derive more than half of their EBITDA from the sale of newly constructed, detached, single-family houses; real estate developers derive more than half of their EBITDA from the development and sale of other types of newly constructed residential or commercial properties.

Subsectors	Typical CPGP
Homebuilders	Capital or asset focus
Real estate developers	Capital or asset focus

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Our sector-specific liquidity considerations are described in "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers."

In broad terms, reputation and brand recognition offer developers relatively limited competitive advantages, compared with most consumer-related industry sectors. A company's marketing strategy may bolster its reputation through the variety and attractiveness of its designs, development areas, and communities (including location and amenities). In addition, developers that have a reputation for completing construction projects on time and to the agreed quality, may see repeat business from end purchasers. However, few customers are frequent buyers, especially in the residential sector.

Another component of marketing strategy is pricing strategy. Pricing strategies may vary among industry players. In our view, some of the pricing options weaken profitability and dilute franchise value. For example, some companies are particularly aggressive about lowering selling prices or offering sales incentives during periods of weakening demand. They may offer free or enhanced property features, pay closing costs or mortgage points, or subsidize tax costs. Companies typically report the cost of these incentives as contra revenue or as expenses.

Approach to land procurement: The ability to source sufficient land in attractive locations is critical to growth and we therefore consider the risks associated with a company's chosen land procurement strategy. Some homebuilders and developers maintain very large land banks. Although this reduces the risk that revenue could be constrained in the future due to a lack of suitable land, it is a capital-intensive strategy. In addition, a large land portfolio carries exposure to changing land prices. The value of land positions could suffer, should industry sales be significantly curtailed during a recession, or if changing demographics cause demand to fall.

Other homebuilders and developers use options to secure their land supply or maintain a smaller number of lots on their balance sheets--perhaps enough to cover their needs for the next two to three years. This approach is less capital-intensive, minimizes capital costs, and facilitates quick adjustments to the inventory during industry downturns. That said, it can be difficult to orchestrate and requires strong relationships with landowners and other suppliers. In addition, it may be difficult to sustain should rapid industry growth intensify competition for land parcels in good locations. Given the scarcity of urban land suitable for development, sourcing land is especially challenging for developers that primarily operate in densely populated urban areas. Whatever means a developer uses to control land, the end purchasers of the property must be able to exercise full ownership rights if the property is to be attractive from the purchaser's perspective.

Sales support: Some homebuilders and developers gain a competitive advantage by offering mortgage finance or mortgage brokerage services. Although this practice increases funding requirements for the homebuilder or developer, it helps customers to obtain financing on favorable terms in a timely fashion, while generating a fee income. In certain countries, homebuilders offer rent-to-own programs, which are effectively a form of long-term financing. However, most homebuilders and developers arrange with a financial institution to sell the loans quickly. Such sales are typically made on a nonrecourse basis, but we assess ongoing representation and warranty contingencies that are borne by the homebuilder or developer. Being subject to more contingencies than peers, such as having to repurchase nonperforming loans, weighs on our assessment of competitive advantage.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Consistent, proven, and adaptable business strategy, including an ability to tap into new or growing markets and offer products that are attractive to end purchasers.	Inconsistent or aggressive business strategy.
Large volumes and a leading market share.	Volumes are small and market shares lag the leaders.
Some degree of name or brand recognition and product differentiation.	Lack of differentiated brands and product offerings.
Control of sufficient land in attractive locations to support growth, and the ability to replenish land reserves while maintaining high quality.	Insufficient control of attractively located land to support growth.
Able to outperform the market in terms of sales volume and unit pricing, net of incentives.	Sales volume and unit pricing, net of incentives, are below the market average and the company follows others on pricing.
Demonstrates strong sales support capabilities and the ability to adapt quickly to changing market conditions.	Unable to demonstrate strong sales support capabilities or the ability to adapt to changing market conditions.

Scale, scope, and diversity

We assess scale, scope, and diversity in the homebuilders and real estate developers sector based on:

- Geographic diversity,
- Relative attractiveness of the markets served, and
- Diversity in terms of product type and price segment.

Geographic diversity: We view the ability to switch focus between geographical markets or property segments in response to changing market conditions as positive, and an important advantage. Participating in a variety of regional markets enables companies to reduce their exposure to cyclical downturns or long-term changes in market conditions.

Relative attractiveness of the markets served: Larger markets that demonstrate growing demand based on factors such as demographic and employment trends have greater market attractiveness. Competitive dynamics also factor into our assessment. We consider markets where homebuilding and development activity is fragmented among relatively weak local players to be less mature than markets that are dominated by large industry participants. In addition, we consider the likely degree of correlation of supply and demand among the markets served.

The operating environment for homebuilders and developers is affected by government regulation and policy with respect to the real estate sector. Regulations and policy may be set at the local, regional, or national level. We assess:

- The ease and predictability of permitting/licensing/entitlement processes related to real estate development and sales;
- The extent to which the government seeks to stimulate the property market, or depress it (for example, by altering the availability of tax credits and rebates, or through subsidized mortgage financing programs); and
- The government's record of participation in the property sector and the extent to which government actions have either stabilized or destabilized the market.

Product diversity: Similarly, the ability to offer a broader range of products--for example, both residential and office properties--can help homebuilders and developers react more quickly to shifts in buyer preferences, or to regulatory changes. That said, increased diversity may also add to management challenges.

Diversity by product type encompasses the scope of a company's offerings. For example, residential property developments may offer one or more of the following:

- Single-family detached homes;
- Townhomes or attached homes (for example, terraced housing); or
- Mid- and high-rise blocks of apartments.

Our assessment of diversity of product offerings considers the trade-off between expertise and diversity. In our view, it is difficult for a homebuilder or developer to be effective across the price spectrum because the resources required to offer a comprehensive range of attractive products can be prohibitive. Because correlation across price segments is generally high, we regard a focus on upscale residential properties as offering only a limited competitive advantage. Positively, during a recession, upscale consumers in some residential markets may be somewhat less affected and retain access to financing. The higher selling price on an upscale property may also provide the company with a more substantial cushion in a downturn. This is offset by the more discretionary nature of many upscale consumer purchases (for example, the purchase of second homes). In addition, land and construction costs are typically higher when building upscale properties.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Participation in a variety of markets that are not closely correlated and that have favorable supply and demand fundamentals.	Participation in only a few markets.
Operating ability to offer a broad range of product types.	Limited ability to offer a variety of product types.
Demonstrated strength in markets/segments/price points that afford better-than-average profitability.	Concentration in markets that have limited growth prospects or are intensely competitive.

Operating efficiency

We assess operating efficiency in the homebuilders and real estate developers sector based on:

- Ability to procure attractively situated land parcels on a cost-effective basis;
- Working capital management, including control of land and building inventory; and
- Cost structure (which is influenced by building/construction, marketing, and overhead costs).

Land procurement strategy: For homebuilders and developers, procuring competitively priced, well-located land parcels is key to their operating efficiency. Land costs are often the largest element of the cost structure and a company's land procurement strategy will affect its asset intensity and operating risks. For developers, local market characteristics may determine whether they lease or purchase land, or it may simply reflect their operating strategy.

Working capital management: As part of our assessment, we consider working capital management and track record of completing construction projects on time and within budget. Typically, homebuilders and developers rely heavily on subcontractors during the construction period, which can expose them to the risk of delays caused by subcontractors. Project management and execution skills, including cost management, are assessed against peers. Although below-average construction costs indicate strength, we also consider the company's ability to pass along potential cost increases. Operating efficiency also benefits from standardized, integrated operations management, particularly if the company is involved in multiple projects in different locations. We would expect this to include design, procurement, construction, and sales processes.

Developers undertaking large-scale projects generally use third-party resources for at least part of the project management and construction work. They are therefore exposed to counterparty performance risk and reputational risk making the quality and reliability of the third parties a crucial element. Where relevant, we consider the key terms of the contracts between a developer and its builders, and the quality of their relationship. Contracts usually include provisions to govern responsibility for cost overruns and penalties for delays, but they may be difficult to enforce in certain jurisdictions. Our assessment incorporates any such risks to which the developer may be exposed.

Cost structure: The cost structure for a homebuilder or developer depends on its relative land costs, unit construction costs, marketing costs, corporate overhead, and financing costs. Although scale may afford the company only limited pricing power, it can contribute to operating efficiency and margins, for example, through:

- Pricing power when negotiating with building material suppliers, especially if purchasing functions are centralized;
- The ability to attract and retain experienced subcontractors with good reputations, and so avoid subcontractor-related cost overruns and construction delays;
- The ability to attract designers who can create a variety of cost-effective, attractive, and up-to-date designs;
- Competitive overhead costs, including the ability to pass on increases in input costs;
- Efficient management of fixed and variable costs in a cyclical downturn; and
- Systems to support marketing and sales, including online channels.

Our view of operating efficiency also encompasses the management of property inventory. The longer the gap between time of construction and time of sale, the greater the risk for the homebuilder or developer. Market norms or regulations may limit companies' ability to reduce the risk and shorten the gap. In some markets, homebuilders construct a certain number of homes to serve as models for marketing purposes, but the bulk of the construction will begin only after the homebuilder has entered into sales contracts with customers, who typically pay a significant amount in advance. The homes built on spec or for marketing purposes are sold to customers who do not care to wait out the construction period. We monitor the percentage of total inventory that comprises speculative homes against the homebuilder's peer group. A homebuilder that has a substantial proportion of such houses in its inventory will be disproportionately exposed to a sudden downturn in the market.

In other markets, houses need to be fully constructed before sale, particularly where homes are built as part of government-sponsored, affordable housing programs. Some regulators allow properties to be presold, but only after construction has begun or the project has passed certain milestones; for example, they may require that at least two-thirds of a building's planned height is constructed before preselling can commence.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Profit margins, calculated as EBITDA to revenue and ROC, are above-average relative to similarly constituted peers (adjusted to account for sales mix and average selling price) due to economies of scale, process standardization, and other efficiencies.	High construction costs and below-average profit margins compared with similarly constituted peers (adjusted to account for sales mix and average selling price) because of inefficiencies, including a lack of economies of scale.
Development projects incorporate a high proportion of presold space and work-in-progress or finished-but-unsold property inventory is well-balanced against future demand.	A low level of pre-sold space in its development projects, with excessive levels of work in process or finished but unsold property inventory.
Efficient management of land inventory, at levels sufficient to support growth for several years in a stable market environment, but not excessive. Land holdings are actively managed to adapt to changing market conditions.	Land inventory that is inefficiently managed and either insufficient to support growth for several years in a stable market environment, or excessive.
Competitive overhead costs, calculated as SG&A expenses as a percentage of revenue.	Uncompetitive overhead costs, calculated as SG&A expenses as a percentage of revenue.

Profitability

The financial performance of homebuilders and developers is characterized by wide cyclical fluctuations, and the industry demonstrates structural differences from one country to another. Therefore, we assess a company's profitability against that of similarly constituted peers, but not against global benchmarks, as we typically do in other corporate sectors. In most cases, our primary indicator of profitability is the EBITDA margin. Where a company's strategy emphasizes a high turnover of assets, we consider ROC to be a more meaningful indicator of profitability.

Financial Risk Profile

Accounting

Under U.S. GAAP and IFRS, revenue and related profit for homebuilders and developers are generally recognized when the sale closes and title to and possession of the property are transferred to the buyer. Some companies based in Latin America, Southeast Asia, and Australia have historically recognized revenue using the percentage-of-completion method. We consider this method less conservative. In certain market environments, it can lead to a significant divergence between revenue and cash flow and may cause certain of our profitability and cash flow/leverage metrics to be overstated or understated. in those cases, we are unlikely to use them in our cross-border peer comparisons.

Supplementary ratios

Although our standard supplementary payback ratios--CFO to debt, FOCF to debt, and DCF to debt--are subject to wide swings, they indicate the extent to which working capital affects cash generation. FOCF at companies undergoing sustained growth may be negative for an extended period, heightening risks. We consider two coverage ratios--FFO plus cash interest paid to cash interest paid and EBITDA to interest--because they focus on a company's ability to meet ongoing debt service requirements. We also use debt to debt-plus-equity as an additional supplementary ratio to help us gauge financial leverage. This can be particularly useful where the results indicated by our core and standard supplementary ratios diverge. In our experience, this can help us evaluate how the company has chosen to fund its operations and how much leeway it has to sustain losses.

Our debt to debt-plus-equity benchmarks differ according to the accounting method a company uses to value its properties. Where property values are marked to market (for example, under IFRS), we apply somewhat stricter benchmarks to account for the typically higher values used, compared with properties valued on a historical cost basis.

Homebuilders and real estate developers: debt to debt-plus-equity

	Historical cost basis (%)	Fair value basis (%)*
Minimal	Less than 25	Less than 20
Modest	25-35	20-30
Intermediate	35-45	30-40
Significant	45-50	40-45
Aggressive	50-60	45-55
Highly leveraged	Greater than 60	Greater than 55

*Used where property values are marked to market.

Section 19 | Leisure And Sports

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the leisure and sports sector based on:

- The degree of brand recognition or franchise strength;
- How attractive and competitive the market is, compared with peers; and
- The quality of the asset or service.

These factors manifest in various ways in the subsectors within the leisure and sports industry, as shown below.

Sector description

Companies that derive more than half of their revenue from the provision of leisure and sporting facilities and goods.

Subsectors	Typical CPGP
Cruise lines	Services and product focus
Gaming	Services and product focus
Leisure facilities, (theme parks and other visitor attractions)	Services and product focus
Lodging and hospitality (hotels and resorts)	Services and product focus
Sports companies (fitness club operators)	Services and product focus
Timeshare operators	Services and product focus
Toy companies and other leisure goods manufacturers	Services and product focus

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Gaming	
Located in markets that have a large resident or visiting population who are likely to game, or where demand for gaming is likely to remain higher than local gaming capacity (that is, the number of gamers that could be accommodated).	Located in less-favorable markets that have a smaller resident or visiting population who are likely to game, or where gaming capacity is higher than demand.
Operates in markets that have high barriers to entry, such as a fixed number of gaming licenses.	Operates in markets that are highly competitive, with few barriers to entry, or in jurisdictions that do not limit the number of gaming licenses.
Maintains the high quality of its assets and also reinvests regularly to refresh its properties, especially in more-competitive markets.	Assets are of poor quality and there is limited ability to reinvest to maintain or improve the assets.
A leading market share or market share premium; strong revenue per user or machine; or, for online gaming, a high number of active users in the installed base. In assessing market share premium for casinos, we compare a casino's share of gaming revenue from a market against its share of the market's gaming capacity.	Market share is low; revenue per user or machine is weak; or, for online gaming, there are few active users in the installed base.
The ability to create a superior visitor experience that encompasses gaming, entertainment, lodging, dining, and shopping. This encourages customers to stay longer and spend more.	Few additional amenities are offered, reducing the opportunity to benefit from ancillary spending or encourage users to stay longer.
Strong brand recognition and the ability to create value through customer loyalty programs.	Weak brand recognition or an inability to encourage customer loyalty through marketing programs.

Strong or strong/adequate	Adequate/weak or weak
Lodging and hospitality	
Broad and consistently favorable brand recognition, combined with successful and growing loyalty programs and shared marketing and reservation services.	Brand recognition is poor, inconsistent, or periodically unfavorable.
A record of sustaining successful long-term franchise and management contracts with hotel owners, even when there is a change in hotel ownership.	A record of turnover in franchise and management contracts with hotel owners
Above-average asset quality, thanks to the ability to attract third-party development capital over multiple economic cycles and to increase the net number of rooms marketed by the brand each year throughout the economic cycle. For hotel owners, highly desirable real estate in markets that have high barriers to entry.	Asset quality is below average.
A significant and sustainable market position in a deep travel market.	Operates in markets that have few barriers to entry. For example, the large, mid-tier, and economy lodging segments are exposed to competition from suburban and roadside markets, where land for new construction is readily available and zoning restrictions less onerous.
Cruise lines	
Strong brand recognition and a value proposition that is consistently viewed as favorable.	Poor or inconsistent brand recognition.
Proven ability to design ships that can command higher prices or stronger yields than the existing fleet and competitors.	Limited record of successfully building and launching ships.
High-quality ships with amenities that are desirable to the target market and enable the company to deliver a superior guest experience.	A history of frequently underperforming against service level targets or of mishaps that threaten market share or prompt the company to discount more deeply on price than peers over a sustained period.
Customer satisfaction and retention are high, bolstering the ability to maintain and improve market share.	Poor customer satisfaction and retention.
Sports team or other sports issuers	
Strong franchise and enthusiastic and sizable fan base that translates into predictable attendance at events.	Weak franchise, fan base shows weak engagement, and attendance at events is volatile.
Long-lasting, highly profitable sponsorship and media contracts, supported by strong and consistent demand for media rights.	Demand for media rights is relatively weak.
Leisure facilities such as theme park and other visitor attractions	
Strong brand differentiation and long-lasting reputation as a premier destination that attracts a loyal visitor base, despite premium ticket prices compared with competitors.	Limited brand differentiation leads to frequent strategic discounting.
Reliably high attendance compared with industry peers.	Attendance is highly seasonal compared with industry peers.
Tickets are purchased in advance.	Cost of postponing a visit--for example, because of bad weather--is low, with few tickets sold before the day of entry, and few overnight visits.
High asset and service quality and a strong safety record, thanks to investment in new rides and attractions and in refreshing existing ones.	Asset and service quality are below average, due to limited investment.
Operates in markets that have high barriers to entry.	Operates in markets that have low barriers to entry and intense competition.
Toy companies and other leisure goods manufacturers	
Long-established and positive brand awareness.	Limited brand longevity and awareness.
Record of clearing items from the inventory before they become obsolete.	Frequent need to clear outdated items from the inventory.
Few supply-chain disruptions or product recalls, combined with a record of successfully handling them.	Supply-chain disruptions or product recalls often delay or prevent distribution.
Resilient demand, thanks to the ability to retain, expand, and profitably monetize licensing agreements and entertainment properties.	Volatile demand due to a limited ability to retain, expand, and profitably monetize licensing agreements and entertainment properties.

Certain subsectors are rarely assessed as having a strong or strong/adequate competitive advantage. This is the case for fitness club operators, where the very low barriers to entry have created strong competition and high customer attrition.

Similarly, timeshare operators compete with other leisure and vacation options for consumers' discretionary spending, face high levels of sales execution risk, and incur high new customer acquisition costs. Buying a timeshare means buying an interest in a property that includes the right to use it for a specific amount of time each year. Therefore, it is a relatively high-ticket investment compared with the cost of travel and a hotel for a one-off vacation, or the cost of a cruise, and this often leads timeshare operators to arrange financing for customers.

Competitive advantage: typical characteristics*

Adequate	Adequate/weak or weak
Sports companies such as fitness club operators	
Customer retention is supported by a reputation for offering good service in well-maintained, clean clubs, including the offer of personal training services.	Customer retention has been uneven even when offered personal training services.
Customer attrition rates are below the industry average, indicating good customer loyalty.	Customer attrition rates are higher than peers.
Clubs operate from easy-to-access, high-quality buildings located in population centers.	Club buildings are less attractive, and locations are less desirable.
Timeshare operators	
History of successfully executing sales to new timeshare owners throughout the economic cycle.	Uneven record of selling to new timeshare owners, even when the economy is strong.
Fewer than 50% of total timeshare sales rely on external borrowing to finance consumer loans.	Sales are highly sensitive to the potential loss of external financing for consumer loans during periods of financial stress.
Brand recognition is strong, and the loyalty program is affiliated with a widely recognized, high-quality hotel brand.	Brand recognition is relatively weak.
Operator offers a network of high-quality real estate in popular resort locations.	Operator offers less-desirable real estate in less-attractive resort locations.
Most existing owners consider the purchase to be good value.	Heavy reliance on selling additional timeshare products to existing owners.

*Subsectors assessed as adequate or below.

Scale, scope, and diversity

We assess scale, scope, and diversity in the leisure and sports sector based on:

- Diversity across geographic markets;
- Concentration by brand, asset, and segment; and
- Scale, especially when this affects its ability to make large capital investments.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Gaming	
Portfolio shows broad geographic diversity, and the company operates across different gaming markets or platforms.	Limited geographic diversity within the portfolio of properties.
High revenue diversity--that is, the company derives revenue from both gaming (slot machines, table games, sports betting) and nongaming amenities (entertainment, lodging, dining, and retail).	Limited revenue diversity and asset concentration.
Lodging and hospitality	
Multiple successful brands that are widely distributed.	Brand concentration.
Offers rooms at a variety of price points, targeting the luxury, upscale, midscale, and/or economy markets.	Price segment concentration.
Broad geographic diversity.	Limited geographic diversity.
Cruise lines	
Multiple successful brands that are widely known and have geographically diverse itineraries.	Brand concentration.
Sufficient scale to enable investment in the building of expensive ships, funded from internally generated cash flow.	Scale is limited and cash flow is insufficient to fund the heavy investment required to build a ship; as a result, capacity growth relies on external financing.
Cruise ships are able to target the luxury, premium, and contemporary markets, with offerings at different price points.	Price segment concentration.
Sports team or other sports issuers	
Wide range of events or facilities.	Limited diversity in terms of events or facilities.
Diverse revenue sources including events, attendance, sponsorship, media, and ancillary revenue.	Revenue is largely derived from one or a few events.
Broad event and product distribution and global sales diversification.	Limited distribution.
Leisure facilities such as theme park and other visitor attractions	
Distribution of multiple successful brands targeting multiple price points and demographic groups.	Limited distribution of brands.
Company operates a variety of sites that are geographically diverse and include both indoor and outdoor attractions, enabling it to reliably mitigate seasonal risk factors such as weather.	Limited geographic and site diversity.
Toy companies and other leisure goods manufacturers	
High product diversity across multiple age and demographic groups.	Limited product diversity.
Broad product distribution and global sales diversification.	Narrow product distribution and geographic sales concentration.
Manufacturing locations are geographically diverse and the company uses multiple suppliers.	Manufacturing facilities are concentrated.
Sports companies such as fitness club operators	
Geographic diversity across markets.	Limited geographic diversity.
Good diversification of revenue sources, including membership fees, ancillary products, and other services.	Limited revenue diversity.
Club locations are near large customer populations.	Clubs are located in areas that have small customer populations.
Timeshare operators	
Resorts are widely distributed across multiple desirable markets, enabling the operator to offer timeshare owners a network of attractive vacation spots.	Limited diversity in terms of resort and region, so that the vacation network is limited.
Large and growing owner base.	Number of existing owners is relatively small.
Sources of revenue are well diversified across timeshare sales, home ownership association (HOA) management fees, and financing revenue.	Limited revenue diversity.

Operating efficiency

We assess operating efficiency in the leisure and sports sector based on:

- Asset utilization and efficiency metrics, such as revenue per unit, where applicable;
- Success at managing fixed and variable costs in a downturn, compared with peers; and
- Record of managing large capital investment programs, where applicable.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Gaming	
Revenue per user is above the industry average, or the casino's win per unit per day for slot machines and tables is relatively high.	Revenue per user is below the industry average.
Operates in markets that tax gaming at relatively low rates.	Operates in markets that tax gaming relatively heavily.
Proven ability to lower labor costs at a casino or resort during a down cycle and to limit labor cost inflation.	Limited ability to lower labor costs at a casino or resort during a down cycle and to limit labor cost inflation.
Ability to effectively manage promotional allowances and other marketing costs across economic cycles.	Promotional spending is frequently high because the company operates in highly competitive gaming markets.
Lodging and hospitality	
Revenue per available room (RevPAR) is frequently higher than peers, across multiple brands and segments.	RevPAR is generally below peers on most offerings.
The cost structure is flexible; for example, the company sells franchise rights or manages the brand, rather than owning a hotel.	Ability to manage fixed and variable costs during economic downturns is limited, compared with peers.
Relatively low capital investment requirements.	High capital investment requirements.
Cruise lines	
Net revenue yield across the fleet is frequently higher than peers throughout the economic cycle, or the company outperforms peers in terms of year-on-year yield growth.	Net revenue yield consistently underperforms peers.
Discounts are rarely deep and are only offered as part of the company's typical promotions, rather than as compensation for poor service.	Deep discounts are frequently offered as compensation for poor service.
The company consistently manages dry dock, fuel, corporate, and other expenses to support profitability throughout the economic cycle.	Frequent cost overruns have undermined the company's profitability.
Sports team or other sports issuers	
The company consistently manages the cost of commissions, payroll, corporate, and other expenses to support profitability.	The cost of commissions, payroll, corporate, and other expenses frequently rises more quickly than revenue.
Revenue from sponsorship, media rights, or other ancillary revenue is predictable and consistently supports improved profitability.	Uneven ancillary revenue weighs on profitability.
Strong and consistent attendance at events supports the sale of tickets at premium prices as well as boosting other event revenue.	Poor or declining attendance not only erodes revenue from ticket sales but also weighs on any ancillary revenue sources.
Leisure facilities such as theme park and other visitor attractions	
Discounts on price are consistently and successfully used to optimize park attendance throughout the economic cycle.	Underperformance of the park has led to significant and sustained use of price discounts.
Maintenance, labor, and other park operating costs are successfully managed over the economic cycle.	Maintenance, labor, and other park operating costs are frequently managed inefficiently and rise faster than revenue.
Toy companies and other leisure goods manufacturers	
It is rarely necessary to discount prices excessively in order to clear obsolete items from the inventory.	It is frequently necessary to discount prices to clear obsolete items from the inventory
Commodity, labor, and other manufacturing input costs are effectively managed to reduce volatility in the gross margin.	A volatile gross margin because commodity, labor, and other input costs are highly variable.

Strong or strong/adequate	Adequate/weak or weak
Revenue mix is weighted toward evergreen products and long-lived brands, rather than entertainment-based products.	Revenue mix relies on transient brands or products.
Sports companies such as fitness club operators	
The proportion of revenue derived from high-margin ancillary services, especially personal training, is higher than peers.	Very little revenue is derived from high-margin ancillary services such as personal training.
Proven ability to manage price discounting and high fixed-cost structure, to support profitability.	Frequent and sustained use of price discounting to attract members, resulting in profitability that is consistently below average for the leisure and sport industry
A measured approach to expansion that limits the negative EBITDA margin impact of opening new clubs. Until they attract enough members to cover their fixed costs, new clubs are a drain on EBITDA.	Aggressive expansion, with new club openings causing EBITDA margins to decline for multiple years.
Timeshare operators	
Most timeshares sold are high-margin, commission-based sales of third-party inventory.	A minimal proportion of revenue is derived from high-margin, commission-based sales of third-party inventory.
A significant proportion of revenue comes from high-margin, less-volatile HOA management fees.	Revenue from HOA management fees is minimal.
Ability to absorb drops in sales during periods of economic stress, by rapidly reducing costs to preserve cash flow.	History of failing to reduce the cost base during periods of economic stress.

Financial Risk Profile

Supplementary ratios

Although our preferred supplementary ratio for leisure and sports companies is EBITDA to interest, especially when the cash flow and leverage score is significant or weaker, we may use other supplementary ratios to refine our view, as shown below.

Supplementary ratios by subsector: leisure and sports

Gaming	FOCF to debt gives us insight into the effect of the need for periodic development capex and maintenance capex, while DCF to debt may be used for companies that pay high dividends, especially Native American gaming entities.
Lodging and hospitality	FOCF to debt applies in most cases because of high investment needs, including investing in hotel renovations, while DCF to debt may be used for companies that pay dividends.
Cruise lines	FOCF to debt applies because of the capital cost of shipbuilding, while DCF to debt may be used for companies that pay dividends.
Toy companies and other leisure goods manufacturers	CFO to debt applies because of the heavy working capital requirements.
Sports teams and other sport issuers	CFO to debt applies because of high payroll costs and limited capex needs.
Theme parks and other visitor attractions	FOCF to debt applies because maintenance capex on attractions is relatively high.
Fitness club operators	FOCF to debt applies because clubs tend to grow by opening new clubs.
Timeshare operators	CFO to debt applies because of the heavy working capital required to fund inventory and receivables.

Native American gaming entities

When assessing the financial policy of Native American gaming entities, we view the governing tribe's financial discipline as a key element.

We do not typically assess financial discipline as positive because we do not expect Native American gaming entities to prioritize debt repayment over distributions. We have observed that, typically, if they reduce distributions, it is in response to weaker-than-expected operating performance, rather than as a credit-enhancing measure that reduces leverage.

We may assess financial discipline as neutral if we view distributions, as a percentage of FOCF, as relatively predictable. This implies that distributions are sufficiently flexible and the governing tribe would be willing and able to lower them if the gaming entity were under operating stress. To determine the flexibility available, we ask for the Tribe's financial statements and discuss budgetary flexibility with its elected officials. We also analyze its financial position, policy, and track record in using the flexibility.

We assess financial discipline as negative if we consider that distributions as a percentage of FOCF could be unpredictable over time because we are unable to assess the tribe's flexibility in terms of distributions or have limited visibility on the government's budget.

When rating debt issued by Native American gaming entities, we do not assign recovery ratings, because the exercise of creditor rights against a sovereign nation is associated with significant uncertainty. In particular, it is unclear whether the U.S. bankruptcy code would apply, whether a U.S. court would ultimately be the appropriate venue to settle such a matter, and to what extent a creditor could enforce judgment against a sovereign nation.

Section 20 | Media And Entertainment

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the media and entertainment sector based on:

- Brand strength;
- Market position;
- Revenue stability;
- Asset quality; and
- Ability to lead on price.

Sector description

Companies that derive more than half of their revenue from creating, publishing, or broadcasting entertainment or other content, or by selling advertising.

Subsectors	Typical CPGP
Ad-supported online content platforms	Services and product focus
Advertising agencies and marketing services	Services and product focus
Broadcast networks	Services and product focus
Cable TV networks and streaming services	Services and product focus
Cinema chains	Services and product focus
Data publishing	Services and product focus
E-commerce services	Services and product focus
Educational publishing	Services and product focus
Film and TV program production	Capital or asset focus
Music publishing and recording	Services and product focus
Newspapers and magazines	Commodity focus/scale driven
Other media and entertainment	Services and product focus
Outdoor advertising	Services and product focus
Printing	Commodity focus/scale driven
Radio stations	Services and product focus
Local TV stations	Services and product focus

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Advertising and marketing services	
Ad agencies have strong networks; marketing services companies have established brands.	Lack of business diversity and brand recognition.
Fees are stable or increasing and clients remain loyal and consider the company adds value.	High client turnover, which undermines fees stability and growth.
Net business volumes from new or existing accounts increase consistently, providing steady organic revenue growth.	Net business volumes are flat or declining.
Ability to adapt to shifts in technology.	Inability to adapt to shifts in technology.
Multiple service offerings in both traditional and digital formats across different geographic regions.	Limited presence in emerging markets and digital services.
Ad-supported online content platforms	
Strong and stable market share.	Market share is low and volatile.
Strong targeting and demographic reporting capability.	Weak analytical reporting capabilities.
Strong brand recognition.	Traffic is largely driven by external search engines or social media platforms, such that a change to algorithms could significantly dent audience reach.
Sizable audience, with a demographic mix that is attractive to advertisers.	Limited global presence and product appeal (for example, a focus on a highly specialized market or niche).
Content has reached a critical mass that makes the company's services highly valuable to users and imposes high switching costs.	Content base is small and not seen as valuable to users.
Ability to monetize content and audience traffic.	Uses a tailored pricing model, instead of industry-standard measures, such as cost per thousand impressions or cost per lead.
Proprietary technology that is difficult or very costly to duplicate.	The platform lacks the technology to monetize content.
Customers are highly engaged and use the platform frequently.	Heavy dependence on ad exchanges, resulting in unstable customer base.
Broadcast networks	
Country-specific regulation supports only a limited number of national free-to-air or public broadcasters, thus reducing competition and making it easier to acquire programming, audience ratings, or advertising share.	Regulation and the structure of the national TV market are unfavorable and there are multiple over-the-air private or public broadcasters, creating tough competition for programming/audience/advertising.
Leads its market in terms of audience ratings, and ratings have declined by less than the market average.	Audience ratings have been declining more steeply than peers.
Affiliated stations pay high fees for permission to retransmit national programming content.	Considered to be a second-tier network. due to its weaker programming slate and weaker audience ratings.
Consistently schedules successful slate of prime-time programming and commissions new shows that prove successful.	Slate of prime-time programming is limited and it is inconsistent in commissioning new shows that prove successful.
Able to charge advertisers an industry-leading cost per thousand impressions and to consistently increase this cost.	Inability to charge an increased cost per thousand impressions.
Cable TV and streaming services	
Distributed to a high proportion of homes or has sufficient scale to distribute content digitally or direct to the consumer.	Has less distribution among linear TV subscribers and limited digital distribution capabilities.
Affiliate or subscriber fees are higher than peers or the industry average.	Affiliate or subscriber fees are lower than peers or the industry average.
Leads the market in premium categories such as sports, news, or specialized programming.	Lower audience ratings than similar channels (that is, other general interest or high-interest, niche channels).
Leads the market in terms of audience ratings or ratings have declined by less than the industry average.	Audience ratings have been declining more steeply than comparable channels.

Strong or strong/adequate	Adequate/weak or weak
Data publishing	
Has access to exclusive data or expertise that increases its pricing power; barriers to entry are high and there are few substitutes; and clients have proved loyal.	Content is niche or exclusive content falls within a narrow scope.
Ability to raise prices consistently due to necessity of product or data.	Limited or no pricing power.
Onboarding of new clients is smooth, and the company has the technological expertise to reliably migrate client data from other platforms. Print products make a limited contribution to revenue.	Company is unable to consistently migrate data successfully from one platform to another, in line with client needs.
Record of continuously improving the product or service while maintaining low downtime and minimal service delays.	Service is poor, with frequent downtime.
E-commerce services	
Maintains a strong and stable share of the market.	Most traffic comes from third parties such as external search engines.
Strong brand recognition, with a good proportion of users returning to the service or making repeat purchases.	Few or no products are exclusive to the site and there is no clear differentiation to make it stand out from its competitors.
Able to convert a good proportion of online traffic to revenue.	Making a purchase requires multiple clicks or choices.
Feedback is easy to give, with a consumer-friendly interface.	Customer service is poor.
Educational publishing	
Commanding share of the various age-based educational publishing markets.	Low share of the various age-based educational publishing markets.
Proven success at targeting the key subjects studied in the final two years of college/university, including numerous titles that are important in their fields; these markets are more stable because the books are less likely to be sold on or rented.	Main success is with books aimed at the first two years of college/university, which are more likely to be sold or rented and more price-sensitive, or some success with textbooks for subjects studied in the final two years of college/university.
Ability to develop and provide digital learning products.	Produces few widely used digital learning resources.
Established backlist of accepted textbooks, so that only a small share of sales is from first editions, which are more expensive and risky to develop.	Depends on the for-profit college/university sector, where enrollment has been falling.
Ability to increase the price of textbooks and publish revised editions with minimal impact on volume.	Volumes are sensitive to price increases.
Film and TV program production	
Top-tier studio with a demonstrated ability to develop, market, finance, and distribute films and TV shows that are consistently profitable in global markets.	Limited ability to create and distribute content globally. Minimal record of success in developing hit films and TV shows.
Local TV	
A majority of stations in the portfolio have the largest or second-largest full-day or news audience in their local markets, and therefore get a larger share of in-market advertising sales.	Audience ratings for news and consolidated across the full day are lower than peers, so it has a lower share of in-market advertising sales.
Large percentage of market duopolies where there is more than one TV station in a market.	Market is fragmented with many network-affiliated broadcasters.
Owns valuable content and brands that have a strong recognition, or has diversified affiliations with large broadcast networks that offer appealing content.	Affiliated with few broadcast networks, or with smaller networks.
More than 30% of broadcast revenue stems from the sale of retransmission rights (pay-TV distributors retransmit original content)	Less than 15% of broadcast revenue stems from the sale of retransmission rights.
Music publishing and recording	
Large catalog, which includes leading, well-known artists and bands, which venues, media services, and streaming platforms consider to be "must have" content.	Catalog is smaller and includes few widely known artists and bands.

Strong or strong/adequate	Adequate/weak or weak
Proven ability to support a strong roster of artists and catalog of recordings, with good artist and repertoire (A&R) development capabilities.	Limited ability to develop new artists, and lack of a consistent history of strong album sales, indicating a weakness in A&R capabilities.
Sufficient bargaining power to enable the company to offer writers and artists different rights fees, depending on how easy it is to market the artists and their music.	Limited or no ability to alter rights fees.
Outdoor advertising	
Yield, measured as revenue per display, is above the industry average.	Yield is below the industry average.
Digital displays comprise a higher share of the company total than the relevant regional market average.	Digital displays comprise a lower-than-average share of the total.

The shift to digital technology has disrupted every subsector within the media and entertainment field. Our assessment of competitive advantage therefore includes consideration of how well industries and companies have adapted. Although we assess competitive advantage in the context of the overall media and entertainment industry, certain subsectors, listed below, have suffered persistent structural declines. As a result, we are unlikely to assess companies that primarily operate in these industries as having a strong or strong/adequate competitive advantage.

For example, newspaper and magazine publishers have seen a steady fall in revenue and EBITDA as customers switch to online alternatives. In turn, much of the print industry that served the publishers has seen modest, but persistent reductions in revenue and EBITDA. Cinema chains have struggled to recover since they had to close during the pandemic. Their cost structure is inflexible, and they lack negotiating leverage with production studios. Studios have also undermined the theatrical release business model by releasing films on streaming platforms more quickly.

Competitive advantage: typical characteristics*

Adequate	Adequate/weak or weak
Cinema chains	
Easy-to-reach locations with high footfall.	Poor locations leading to persistently weak performance compared with peers (based on metrics such as attendance per screen).
Robust concession offerings and modern amenities (for example, recliner seats and screens that can display films in premium formats such as IMAX), enable the company to generate concession revenue per patron above the industry average.	Weaker concession offerings and lack of modern amenities or luxury formats result in lower ticket prices and lower concession revenue per patron than peers.
Newspapers and magazines	
Content leadership in a niche, category, or geography that supports growth in circulation revenue, combined with steady or growing ad rates despite the industrywide decline.	Failure to lead the market in any category has caused circulation to decline faster than the industry average. In addition, ad rates are dropping in line with the decline across the industry.
Well-developed online or multimedia presence that represents a sizable percentage of total sales and supports digital subscriptions and growing ad revenue.	Inability to monetize online or multimedia presence and revenue from digital subscriptions has not offset the decline in circulation.
Printing	
Significant, consumer-focused online presence, or offers ancillary marketing and consulting solutions.	Minimal consumer-focused online presence.
Sufficient scale to enable mass customization at premium prices.	Because ability to compete on quality and service is limited, the company relies on heavy discounting to retain clients.
Targets end markets that have stronger fundamentals and offer higher margins.	The company is exposed to end markets that have weak fundamentals and to commodity-like print jobs.

Adequate	Adequate/weak or weak
Radio stations	
No. 1 in terms of audience ratings during key parts of the day, such as the morning rush hour.	Audience ratings are lower than peers.
Harnesses a higher share of advertising spending relative to its local audience, supported by leading audience ratings	Has captured a smaller share of advertising spending than peers, measured against its share of the local audience.
Strong presence in large markets that typically attract more advertising spending.	Limited presence in large and dynamic markets.
Comprehensive digital strategy that provides advertisers with data analytics and marketing services.	No clear digital strategy designed to offset declining broadcast revenue.

*Subsectors assessed as adequate or below.

Scale, scope, and diversity

We assess scale, scope, and diversity in the media and entertainment sector based on:

- Diversification in terms of products and services, content, audience, titles, and market segment;
- Geographic concentration; and
- Operational size.

These factors have the potential to support revenue generation, profitability, and cash flow stability at media and entertainment companies. In this sector, achieving a critical mass, in terms of operational size, will tend to offer self-sustaining benefits. We view scale in context, as consolidation/fragmentation differs by subsector.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Profitable diversification across a variety of market segments.	Lack of clear leadership in stable or growing categories; offers a more limited range of products and services than direct competitors; depends heavily on a few brands, products, services, talent, or titles; is a niche player in terms of its brands, products, or services; or focuses on clients in end markets that have questionable long-term staying power.
Good international presence or distribution capabilities; or a broad domestic presence, where applicable (for example, for local TV stations).	Lack of international presence.
Good selection of online or mobile products, content, or services, where relevant.	Limited offering targeted at online or mobile markets and have failed to develop relationships across other media platforms that would support business reinvention, ease a shift to new technologies, or halt a decline in revenue from online businesses, where applicable.
Broad customer base, audience, or distribution channels.	Declining customer base; concentration in business segments that primarily compete on price; or dependence on a small number of distributors.

Because of the ongoing structural decline affecting certain subsectors within the media and entertainment industry, we do not typically assess companies in those subsectors as having strong or strong/adequate scale, scope, and diversity. Even to achieve a scale, scope, and diversity assessment of adequate:

- A newspaper or magazine company would likely need to offer numerous titles, each of which are leaders in their niche or category; be distributed internationally, across multiple platforms; have diversified its sources of revenue; be vertically integrated with content providers that target more-stable media formats; have a sizable and profitable online and mobile presence; and participate in a variety of multimedia relationships with large social media networks.
- A radio station network would likely need to own a large number of geographically diversified stations, targeting markets of all sizes; and to have diversified beyond broadcast revenue, for example, by generating revenue from digital advertising and live events.
- A printing company would likely have to operate at the national or international scale and have a broad offering of profitable products and services.

Operating efficiency

We assess operating efficiency in the media and entertainment sector based on:

- Cost structure;
- Ability to reduce costs in response to client or competitive pressure; and
- The appropriate measure of operating profit (most often, the EBITDA margin).

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Above-average EBITDA margins due to economies of scale and other efficiencies. Margins also benefit from satisfactory audience ratings and ability to change program formats that support rapid growth.	Below-average EBITDA margins due to a failure to gain from economies of scale or other efficiencies, especially where competition on price is intense. EBITDA margin also suffers from unsatisfactory audience ratings or unsuccessful changes to program formats, combined with the inability to improve EBITDA margins rapidly.
Ability to control operationally critical costs, such as programming, marketing, distribution, content, labor, or overheads, to maintain profitability.	Key costs such as programming, marketing, distribution, content, labor, or overheads are higher than peers.
Costs can be reduced without sacrificing content quality, or cost increases can be passed on.	Limited ability to pass on cost increases or cut costs without sacrificing content quality or reducing efficiency.
Limited price competition alleviates pressure on margins.	Fierce price competition leads to a dependence on costly marketing and promotions to retain market share and maintain margins.

Again, structural decline precludes us from assessing companies in the certain subsectors as having strong or strong/adequate operating efficiency.

Newspaper or magazine companies

To attain an adequate assessment, these would require an above-average EBITDA margin gained through economies of scale or effective outsourcing and the ability to cut costs or establish cost-sharing ventures as revenue declines. If any of their titles are losing money, we would not assess a newspaper or magazine company as adequate.

Radio stations and networks

We may assess operating efficiency as adequate if fixed costs are low and the network has proved willing and able to reduce broadcast expenses fast enough to keep pace with the decline in broadcast revenue. In addition, we would look for proven ability to identify the highest-margin formats for its program costs.

Cinema chains

These would typically need to demonstrate that they have the right balance of screens for each location and be able to reduce some of their variable costs, including staff, during slower times. To keep money-losing cinemas to a minimum, cinema chains would need the flexibility to close locations when needed, which might require options such as staggered lease expirations.

Printing companies

To be assessed as having adequate operating efficiency, these would typically need to maximize margins through investment in the latest technology; demonstrate the ability to moderate margin erosion by reducing capacity; and report an EBITDA margin above 15%.

Profitability

Although the EBITDA margin is our primary metric for evaluating the profitability of media and entertainment companies, we may also complement our analysis by using sector-specific measures.

TV broadcasters and local TV networks

These see a rise in audience numbers when high-profile events such as elections or the Olympics take place. Other events such as the FIFA World Cup or the UEFA European Championship can have a similar impact. Given that many such events have a four-year cycle, we consider EBITDA margin data for TV broadcasters over four years (one historical, the current year and two forecast years). This prevents the outsized EBITDA margins in event years from skewing our assessment. In the local TV subsector, the effect is strongest in the U.S. but may also affect our analysis of some European broadcasters. To adjust, we use a trailing EBITDA margin over eight quarters and divide it by two.

Ad agencies

For these, we supplement our view of operating profitability by combining the EBITDA margin with metrics such as staff costs to revenue.

Cinema chains

Comparing the standard lease-adjusted EBITDA margin with the non-lease-adjusted EBITDA margin enables us to judge management's skill at locating cinemas in sites with high potential, and at negotiating terms with landlords.

Financial Risk Profile

Supplementary ratios

U.S. local TV stations

To avoid skewing our results toward years with high-profile events, or toward either an election/Olympic or nonelection/non-Olympic year, we may consider debt to average trailing eight quarters' average EBITDA, as an additional supplementary ratio. The same thresholds as for the core debt-to-EBITDA ratio apply to our analysis of this supplementary ratio.

Media and entertainment companies

There is considerable diversity of practice around expense recognition in this subsector. By using FOCF to debt as a supplementary ratio, we can increase comparability, which is especially useful where the recognition of revenue and expenses is not matched to the cash payment. For instance, most media and entertainment companies recognize revenue when services are performed, but cash collections related to the sale may be spread over three to four years. Given the variability of these issuers' underlying cash flows, the standard profitability metrics may be insufficient. The timing of revenue recognition under U.S. GAAP and IFRS may also vary, making it more difficult to compare entertainment producers across regions.

Further complicating matters, where a show is classed as repeatable entertainment, programming expenses are typically recognized on the first airing. However, recognition may be accelerated if the program is underperforming against audience or revenue expectations. We track audience ratings to help us identify the likelihood that a show may fail, because this may accelerate cash expenditure on the replacement show. Write-offs may also be warranted.

Volatility adjustment

We assess cash flow volatility for each company in the context of its industry subsector. Typically, companies in the video game development, newspapers/magazines, and printing subsectors are assessed as volatile. Pure-play feature film producers are likely to be classified as highly volatile. We typically assess companies in the e-commerce and ad-supported online content subsectors as volatile or highly volatile due to low barriers to entry.

Section 21 | Metals Production And Processing

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the metals production and processing sector based on:

- Value added to products;
- Predictability of prices and volumes, based on contracts and the degree of product differentiation or specialization; and
- Relationships with customers.

For most metal production and processing companies, competitive advantage has little effect on our ratings analysis. Many produce commodity products that can be obtained from other producers or imported. Some metals companies differentiate themselves from peers by producing niche or specialty products, which typically sell for higher prices in more stable volumes. Companies may gain some advantage by producing a mix of metals, operating in attractive segments, and from the size of their market share. Long-standing relationships with customers may also offer an advantage, especially if customers have agreed contracts that make pricing and volumes more predictable.

Where the market is dominated by a handful of producers, pricing behavior may be more rational, which offers better stability. Companies that have strong market positions can also reinvest in fixed assets and in R&D, which can help them maintain their leading position.

Sector description

Companies that derive more than half of their revenue from manufacturing, processing, or distributing metals, especially steel and aluminum. This sector is sometimes referred to as metals and mining downstream.

Subsectors	Typical CPGP
Aluminum	Commodity focus/cost driven
Commoditized metals that compete on price and availability	Commodity focus/scale driven
Specialized metals that require investment in fixed assets and are sold under contract	Capital or asset focus
Steel	Commodity focus/cost driven

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Produces tailor-made or specialty value-added products that offer more pricing power and higher margins.	Produces common-grade materials, such as hot-rolled coil steel, rebar, or primary aluminum.
Products have more-specialized uses or company has a leading share of a more-commoditized market.	Pricing and volumes are unpredictable due to reliance on independent distributors or use of short-term contracts.
Customer relationships are strong.	Market is highly competitive, lacks protective barriers, and is vulnerable to imports.

Scale, scope, and diversity

We assess scale, scope, and diversity in the metals production and processing sector based on:

- Production capacity, and the number and location of plants;
- Product breadth; and
- Scale and diversity from integrated activities, such as mining and material outsourcing.

For a metals company, scale typically offers an advantage by making it easier to translate the breadth and scope of operations into economies of scale, which contributes to better profitability. Prices for many metals are correlated and may even be based on a common benchmark. Therefore, the value of product diversity lies in the ability to mitigate the effect of volatile metals prices by lowering the cost of inputs. That said, if diversity by product or geography is to provide significant credit protection, it needs to offer the company broad exposure to a variety of end markets that have relatively independent cycles. Operating risks are increased if the company is dependent on one producing asset or numerous products that all are exposed to the same external factors.

We analyze the company's exposure to the volatile spot market. Fixed sales prices or volumes offer greater protection. Integration into upstream mining or captive downstream businesses can also make earnings more stable, as can strong customer relationships.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
More large production facilities than peers; good end-market diversity; and a wide range of products, including higher added-value products.	Dependence on a single plant, a single product, or only a few clients in a particular sector.
Exposure to different regions.	Limited geographic diversity (for example, the company only operates in one region) or operates in regions where competition is particularly intense or undisciplined.
Diversity and scale provided by integration into raw materials or downstream manufacturing.	Concentration in markets that have low growth potential, or where there has been excess capacity for a prolonged period.

Operating efficiency

We assess operating efficiency in the metals production and processing sector based on:

- Cost profile, especially for raw materials, energy, and labor;
- Capacity utilization, cost flexibility, and the state of its asset base; and
- Return on investment.

We evaluate each company's ability to source raw materials at a competitive price and its exposure to fluctuations in the cost of raw materials and electricity. If an input has a high weight-to-value ratio that affects transportation costs, we regard proximity to an adequate supply as important. In our experience, producers that are vertically integrated and have good access to their own low-cost raw materials will have a more-stable cost base than less-integrated competitors. That said, sourcing of materials in-house is only an advantage if the cost is competitive and supports a good margin. The capex requirements for vertical integration into raw materials could be a drag on cash flow in a downturn.

Our view of capacity utilization depends on the company's ability to adjust its production level without eroding its margins. The structure of its fixed costs governs whether costs can be reduced in times of low demand.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
The cost of production is low and the company has access to cheap raw materials and energy inputs, while also benefiting from low-cost or flexible labor.	The cost of production is high because of high energy costs, poor availability of raw materials, or an inflexible labor market.
Capacity utilization is high.	Capacity utilization is low and fixed costs are high.
Modern production facilities and flexible manufacturing systems allow the company to adjust operations to market conditions.	Technology is dated and limits the ability to adjust operations to market conditions.

Profitability

The metals sector is not homogenous, and the capital intensity of different metals and technologies varies. Therefore, although our primary indicator of profitability at metals companies is the EBITDA margin, we often supplement this by evaluating absolute EBITDA in U.S. dollars per ton of metal produced. We also consider ROC, ability to generate cash through the cycle, and ability to adapt operations and recover quickly from industry downturns, relative to peers.

Financial Risk Profile

Our assessment of the financial risk profile makes use of S&P Global Ratings' commodity price assumptions for metals.

Supplementary ratios

Given the sector's high capital intensity, based on its high investment and working capital needs, we typically view FOCF to debt and CFO to debt are the most relevant supplementary ratios. Given the importance of capex to the cash flow profile of the company, we pay particular attention to willingness and ability to reduce capex when market conditions are weaker. We base our evaluation on the company's statements and any incentives that apply. We also consider its record of reducing capex during previous industry downturns.

Section 22 | Midstream Energy

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the midstream energy sector based on:

- Resiliency of volume flows;
- The company's contract profile;
- Exposure to commodity prices; and
- The regulatory framework under which the company operates.

Resiliency of production volumes: We examine a company's volume flow records through different commodity price and economic cycles to assess the stability of its commodity-related production volumes. For example, volumes could be more volatile at a company that operates a gathering system in a mature basin or in a region that has a relatively high cost structure, with production declining by over 10% in some years.

Contract profile: Longer-term contracts with counterparties that have strong creditworthiness support the competitive position of midstream energy companies. We assess the extent to which contracts protect against potential variation in profit margins. For example, contracts that include clauses such as minimum-volume guarantees can lead to more stable revenue. In addition, we may evaluate the company's insurance coverage, especially for single-asset midstream companies that are exposed to geopolitical and weather-related risks.

Exposure to commodity prices: We measure the sensitivity of a company's profitability to the relevant commodity price swings. The more sensitive EBITDA is to commodity prices, the more volatile the cash flow is likely to be.

Regulatory framework: These differ from country to country and may offer additional credit support. For example, in certain jurisdictions, regulators allow pipeline operators to raise tariffs to offset high operating expenses and competition, enabling the operator to generate a stable ROC. In general, we consider the effect to be minor, but a supportive regulatory framework can be positive for our assessment.

Sector description

Companies that derive more than half of their revenue from transporting, processing, storing, and marketing hydrocarbons, chiefly commodities such as natural gas, natural gas liquids, and crude oil (or products refined from crude oil, like gasoline and diesel). The sector connects oil and gas exploration and production (or "upstream") activities with oil refiners and retail marketers (the "downstream" sector), export facilities, utilities, and industrial users. In addition, some midstream operators handle other commodities such as ethanol, ammonia, asphalt, coal, biofuels, biomass, carbon dioxide, and hydrogen (see section 29 for rate-based midstream assets owned by regulated utilities).

Subsectors	Typical CPGP
Diversified energy	Capital or asset focus
Gathering and processing	Commodity focus/scale driven
Natural gas or crude oil storage	Capital or asset focus
Natural gas or oil pipelines	National industry and utilities, or capital or asset focus

Other adjustments

Our sector-specific liquidity considerations are described in "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers."

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Highly predictable revenue through take-or-pay contracts or stable volumes.	Revenue and volumes are uncertain because of a lack of contractual arrangements.
Assets are located in low-cost basins that have significant growth potential and where alternative transportation carries a high price.	Assets are poorly situated or there is low-cost alternative transportation.
The services provided are essential to the customer (for example, a pipeline to a refinery).	The services provided face significant competition.
A high proportion of EBITDA comes from fee-based activities.	More than 50% of cash flow comes from contracts with multiple weaker counterparties.
Contracts have long terms, with eight or more years remaining on average.	Few long-term contracts.
Minimal exposure to commodity prices.	High exposure to commodity prices.
A regulatory environment that provides mechanisms to support stable rates of return.	Minimal regulatory barriers to entry and a lack of credit support.

Scale, scope, and diversity

We assess scale, scope, and diversity in the midstream energy sector based on:

- Operating scale;
- Diversity by geography, commodity, and customer base; and
- Integration with other, complementary business lines.

Operating scale: Large-scale midstream energy companies tend to have stronger business risk profiles, more operating flexibility, and greater economies of scale than smaller peers.

Degree of diversification: In general, diversification provides protection against fluctuations in price and volume. Geographical diversification can mitigate the risk of localized changes in prices or other risk factors, such as a basin's geological quality. Likewise, a lack of diversification in the customer base, or in commodity type, could lead to material cash flow volatility and operational disruptions if key customers encounter problems or demand and price patterns change.

Integration between business lines: We consider the degree of correlation between a midstream energy company's main area of operation and its other business lines. An integrated model with diversity across the value chain enhances a company's scale and product offerings. If it allows it to maintain a mostly fee-based revenue model and acceptable ROC, this will have a favorable impact on our assessment. That said, some integrated models increase commodity price exposure without materially improving scale or the company's product offerings, and these weigh on our assessment.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
The company's activities are large in scale and scope and it has a high market share in its operational areas.	Low market share, limited number of assets, or narrow scope of operations.
The company's assets are typically located in three or more geographically diverse basins with robust drilling economics, or the assets are located in one or two very large, cost-competitive basins (such as the Canadian oil sands area).	Geographic diversity is limited to one or two relatively small basins that are not cost-competitive.
Diversification by commodity type.	High exposure to one commodity type.
Diversified consumer base.	Reliance on a limited number of customers.
Integration across many parts of the midstream value chain (such as gathering and processing, transportation, and storage assets), which are connected, even though they operate independently.	Limited integration across business lines.

Operating efficiency

We assess operating efficiency in the midstream energy sector based on:

- The scalability of its growth-oriented capex;
- Maintenance capex as a proportion of total budgeted capex;
- Cost profile of the operating assets; and
- Asset utilization.

Growth-oriented and maintenance capex: When assessing the scalability of its growth-oriented capex, we consider how likely a company is to encounter cash flow lags or cost overruns during construction. Cash flow lags occur when companies incur debt to finance construction of a project but do not receive any cash flow until the project is completed. The potential for cost overruns depends on the project type; the company's experience with similar projects; the level of risk assumed by the engineering and construction company; and any mitigating factors, such as purchasing the raw materials in advance at a fixed price.

To assess maintenance capex, we consider a company's safety record and history of properly maintaining its assets to be good leading indicators for operational risk.

Cost profile of the operating assets and asset utilization: The cost profile is a key element of operating efficiency--where a high proportion of an operating asset's costs are fixed, a decline in utilization could erode cash flow. That said, when utilization is high, having a lower proportion of variable costs could boost profitability. Where available, we review asset utilization data by asset, to determine which affects operating efficiency the most.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Highly scalable growth capex and limited maintenance spending needs per unit.	Low scalability of growth capex and high maintenance capital required, relative to the company's size and cash flow generation.
Operational and fixed costs are low, as a percentage of revenue.	Operational or fixed costs are high, which limits flexibility.
Asset utilization of about 80% or more, on a normalized basis.	Asset utilization of less than 50% on a normalized basis, for example, due to weak commodity prices.

Profitability

ROC and EBITDA margins vary materially across midstream subsectors. For instance, ROC is generally lower for regulated long-haul pipelines than for pipelines that are exposed to commodity prices. As a result, we use two sets of thresholds: one for low-risk midstream companies and one for all other companies.

Where companies report under local accounting rules, rather than U.S. GAAP or IFRS, we may adjust our assessments. In addition, we do not consider the EBITDA margin an appropriate measure of profitability for certain companies, for example, pipelines that do not take title to the product or that pass through costs to their customers.

Financial Risk Profile

Supplementary ratios

In calculating FOCF to debt, our preferred supplementary ratio for midstream energy companies, we may consider only the maintenance-related capex. Spending to support growth is typically both discretionary and high, so including it could skew ratio expectations when the company is not undergoing significant expansion.

Volatility tables

The midstream energy industry encompasses a large variety of companies, from highly stable long-haul pipelines to companies with material, direct commodity price exposure.

We apply the low volatility table to a midstream energy company if it fulfils all the characteristics below:

- Has a CICRA of '2';
- Has a competitive position assessment of at least satisfactory;
- Is forecast to derive at least 90% of its operating cash flow from firm, long-term contracted revenue streams or fee-based activities with very low volume risk; and
- If a company has diversified into other industries, we would only apply the low volatility table if its other cash flow comes from highly stable business lines (for example, regulated utilities or merchant power, with long-term power purchase agreements).

Or

- Has a CICRA of '3';
- Has a competitive position assessment of at least satisfactory;
- Is forecast to derive at least 90% of its operating cash flow from firm, long-term contracted revenue streams or fee-based activities with very low volume risk;
- If a company has diversified into other industries, its midstream operations must meet the previous condition (that is, have long-term contracted revenue streams or fee-based activities with very low volume risk), and its other cash flow must come from highly stable business lines;
- Its assets have a long remaining life and are difficult to substitute;

- It has strong contractual foundations that provide long-term cash flow visibility and stability, and a majority of contracts are with investment-grade counterparties (as rated by S&P Global Ratings or according to our internal estimate of their creditworthiness); and
- Its capex needs are relatively low, adding to the stability of FOCF.

We apply the medial volatility table to a midstream energy company if it meets all of the following requirements:

- The CICRA is generally '2' but in certain circumstances may be '3';
- The competitive position assessment is at least fair;
- The company is forecast to derive at least two-thirds of its operating cash flow from firm contracted revenue streams or fee-based activities with very low volume risk; and
- If the company is engaged in other activities and has an overall CICRA of '3', its midstream operations must meet the previous condition (that is, have long-term contracted revenue streams or fee-based activities with very low volume risk), and its other cash flow must come from highly stable business lines.

In all other cases, we use the standard volatility table.

Other Considerations

Counterparty exposure

If a midstream energy company is exposed to a material counterparty, we may cap the SACP of the midstream entity at the level of the credit quality of the counterparty. We view a counterparty as material if its contracts represent a high proportion of the midstream company's revenue streams, and we consider the company unlikely to be able to enter into alternative contracts at similar or better rates.

If we have capped the rating on a midstream company at the level of a counterparty and the credit quality of that counterparty has deteriorated, in our view, we may also lower the rating on the midstream company. For example, if the principal or only asset was a demand-pull pipeline that could only be used to supply the counterparty, we would likely lower the SACP on the midstream company. However, a company that has multiple assets, each with several potential customers likely to be willing to pay similar rates to those previously contracted, would be in a stronger position. If we considered that it also had sufficient liquidity to give it time to replace the lost revenue streams, we might not lower the SACP of the midstream company if we were to downgrade the counterparty.

Section 23 | Mining

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the mining sector based on:

- Ability to maintain production and reserves through internal development;
- Corporate strategy and growth potential; and
- Market access, sales contracts, or pricing power, if those are relevant.

Internal development: A company's reserve base and pipeline of projects are critical to its ability to maintain or increase production and reserves through internal development. We monitor a mining company's record of bringing projects into production and assess the riskiness of its growth strategy, given its resources and capabilities. Successfully converting nonproducing reserves and resources into output at an attractive operating cost and ROC demonstrates its ability to implement its strategy. Declining production could indicate poor prospects for meeting medium-to-long-term debt service requirements.

Growth strategy: Where a company pursues an aggressive growth strategy, we assess whether this is stretching management resources, straining funding sources, or exposing the company to high execution risks. Example of aggressive growth strategies include undertaking the construction of a single project that is bigger than a company's existing operations or making acquisitions in unfamiliar jurisdictions--a particular risk, given the socially sensitive nature of the industry.

Market access, contracts, and pricing power: In some markets, mining companies can gain a competitive advantage through better market access, longer-term sales contracts, or greater pricing power. For example, mining companies where production is concentrated may see higher or more stable pricing and the existence of captive infrastructure (such as railway lines and ports) is especially relevant for bulk commodity producers. We also consider long-term contracts, if any, and the location of preferred suppliers and customers.

Sector description

Companies that derive more than half of their revenue from exploring and extracting metals and minerals through mining, or from operations that support mining, such as smelting and refining. This sector is sometimes referred to as metals and mining upstream.

Subsectors	Typical CPGP
Coal and consumable fuels	Commodity focus/cost driven
Diversified metals and mining	Commodity focus/cost driven
Miners that have a small asset base (for example, a single mine or a cluster of mines in a single region)	Commodity focus/scale driven
Precious metals and minerals, including gold	Commodity focus/cost driven

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
A development pipeline that offers potential growth projects over five to 10 years.	Limited growth potential or a risk that production will decline.
Good record of taking projects to production.	Dependence on the success of one big project.
A moderate, achievable, capital investment strategy that preserves management resources and funding capacity.	An aggressive growth strategy.
Better-than-peers access to market, contract terms, or pricing power, where relevant.	Access to markets is weaker than peers, contracts are relatively unfavorable or short term, or the company has limited pricing power.

Scale, scope, and diversity

We assess scale, scope, and diversity in the mining sector based on:

- Asset diversity, measured by the number and size of a company's operations;
- Diversity of production, measured by range of commodities produced;
- Geographic diversity of operations;
- Reserve life of the assets, and
- Exposure to mining-specific jurisdiction risk.

Asset, production, and geographic diversity: Greater asset and commodity diversification offers mining companies protection against adverse events or fluctuations in commodity and end markets. Earnings and cash flows are more stable at well-diversified companies; that is, those that receive meaningful EBITDA contributions from a range of mines or from three or four commodities that demonstrate little correlation in terms of price and volume drivers.

Reserve life: Longer reserve lives typically support a stronger assessment. We generally measure reserve life by dividing proved ore reserves by expected production volumes, using current production rates (or future production rates, if the company expects to significantly increase production in the next few years). Our assessment also incorporates the prospective capex required to extract proven reserves. A company that has proven a reserve through drilling but has yet to construct the necessary mining infrastructure will need to invest significant cash over several years before it can generate any meaningful revenue from this source.

Jurisdiction risk: In many cases, a mining company will be exposed to risk factors specific to a country or jurisdiction that are relevant to mining but may not affect other industries. Government policies frequently affect the predictability of the operating environment; for example, there may be mining-specific environmental regulations or other environmental pressures; infrastructure critical to mining may be inadequate; and mining-specific regulations, taxes, and export regulations may be subject to change. In addition, mining companies face elevated social considerations because of safety and local labor relations and the impact on communities of pollution; water or land usage conflicts; and economic or landscape changes.

We incorporate these industry-specific geographic or jurisdiction risks here, because those risks may not be captured in our country risk score. At the same time, we evaluate any offsetting factors that could reduce the impact of these risks, such as a demonstrated record in the industry, local ownership, or captive infrastructure.

Scale, scope, and diversity: typical characteristics*

Strong or strong/adequate	Adequate/weak or weak
Typically, at least five to 10 large-scale assets.	Dependent on one large asset, or a few small-to-midsize assets, such as a regional cluster of mines.
Proven and probable reserves in major operations have a long life of at least 10 years.	Proved reserves in the company's assets have a short life of one to three years.
Product diversity that helps moderate earnings swings (usually, diversification across at least three commodities).	Limited product diversity.
Exposure to countries where mining-specific jurisdiction or country risks are high is limited, or well-diversified.	Significant exposure to a country where mining-specific jurisdiction or country risks are high.

*Although we would not typically assess a single-commodity producer that is reliant on a single mining cluster as having adequate scale, scope, and diversity, we may do so if it has large-scale assets in production, a reserve life of well over 10 years, and low-risk operations (for example, it may have multiple operating faces in the same pit, or several different independent production streams).

Operating efficiency

We assess operating efficiency in the mining sector based on:

- The position of the company's assets on the industry cost curve;
- Nonmining cash costs, such as the cost of delivering to end markets; and
- The quality of the company's reserves, the nature of its mining operations, and the cost of energy and labor.

The industry cost curve plots the cost of all mining operations for a given commodity, in ascending order. In a downturn, assets in the first and second quartiles often remain cash flow positive because of their below-average cash costs. Assets in the fourth quartile, however, could generate negative cash flow if prices were weak and are at risk of being idled (temporary suspension of operations).

Cash costs can be influenced by:

- The quality of the commodity, its byproducts, and the associated infrastructure;
- The risk of higher expenses or stoppages;
- The skill level and flexibility of the work force; and
- The company's exposure to currency fluctuations.

In addition, if a company uses off-take contracts, we evaluate their impact on operating efficiency. Off-take contracts are usually most important when evaluating smaller mining companies. If the counterparty is sufficiently creditworthy, the contract may increase the stability of earnings by fixing volumes and prices for the produced commodity.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Most assets are in the first or second quartile of the global industry cash cost curve.	Most assets are in the third or fourth quartile of the global industry cash cost curve.
Ore grades are above-average and stable.	Ores are low-grade or unstable.
Modern equipment for concentrating, refining, and smelting is in use.	Equipment is outdated or old.

Profitability

Level of profitability: We use EBITDA margin as our primary indicator of profitability for mining companies. That said, the mining sector is not homogenous, and the capital intensity and technologies required to mine and process different ore bodies vary. Therefore, we may complement our analysis by assessing ROC, relative to peers.

Where we do not think that the five years of data described in our corporate methodology would be representative of the full commodity cycle, we may use a longer period to assess profitability. In addition, if capex requirements are persistently high, we may set more-demanding profitability thresholds than the through-the-cycle margins, or lower them if capex requirements are expected to remain low.

Volatility of profitability: Volatility of profitability at most mining companies is assessed as '3' or '4'--only a few companies in the mining sector will be assessed at '1' or '2', indicating lower volatility. We frequently adjust the volatility of profitability in the mining sector by one or two categories, especially for smaller, less-diversified companies. We often apply qualitative adjustments of one or two categories to reflect factors such as:

- Elevated country risk;
- The company's small size compared with peers;
- Concentrated cash flow and event risks;
- Rapid growth in production volumes from start-up operations;
- Exposure to technology changes; or
- A possible change in the pattern of volatility in a specific commodity.

Financial Risk Profile

Supplementary ratios

Our assessment of the financial risk profile uses S&P Global Ratings' commodity price assumptions for metals.

If a company has 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. Where forward curves for the commodity are available, we use these as a starting point and modify them according to our supply-and-demand expectations for the industry. Our analysis of cash flow coverage ratios incorporates company-specific considerations related to volatility of cash flow and capex--both are typically significant in the mining industry.

Given the sector's high capital intensity, we generally find FOCF to debt to be the most relevant supplementary ratio, if the core ratios indicate a preliminary cash flow/leverage assessment of intermediate or better. If the cash flow/leverage assessment indicated by the core ratios is significant or weaker we consider FFO plus cash interest paid to cash interest paid, EBITDA to interest, and FOCF to debt if the company has embarked on an ambitious capex program that would be difficult to curtail in the case of a commodity downturn.

Fluctuations in working capital and CFO to debt are of limited importance in the mining industry because margins are fairly high and the cash conversion cycle is short. In addition, working capital outlays tend to coincide with a strong industry environment, when FFO is high.

Volatility adjustment

Given the cyclicality of the industry, many mining companies have a cash flow/leverage assessment of volatile or highly volatile; this implies that their cash flow/leverage ratios could weaken by up to three categories during a market downturn.

Section 24 | Oil And Gas Exploration And Production

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Business Risk Profile

Competitive advantage

Companies in the oil and gas exploration and production (E&P) sector depend on the availability of suitable reserves that can be profitably extracted. Competitive advantage for these upstream companies largely depends on their ability to manage the risks associated with replacing and increasing reserves.

We assess competitive advantage for an integrated company in the E&P sector based on:

- The growth prospects inherent in its acreage (the area on which it has an oil and gas license);
- The quality of liquids and gas produced;
- Unit revenue realized at each producing region; and
- Extent of vertical integration, if any, among its operating segments.

Growth prospects inherent in its acreage: We assess a company's ability to increase production and reserves through internal development (that is, finding and exploiting reserves in the fields where it already has a license), based on:

- Its history of successful exploration and development; technical resources and capabilities; and required capital spending;
- Its acreage position (geological conditions and accessibility of its fields); and
- The length of its project queue, based on the reserve life index (RLI; defined as reserves divided by annual production).

Where a company's reserves are not growing, it can indicate poor prospects for its ability to continue to meet its debt service requirements. On the other hand, the upfront investment associated with sustained high growth can put a strain on funding sources.

Production quality: Hydrocarbons are subject to price differentials based on type and quality. Therefore, the quality of hydrocarbons produced by a company affects its revenue and cash flow. For example, light, sweet crudes require less refining treatment and yield more high-priced byproducts such as gasoline, kerosene, and jet fuel. Therefore, they command a higher price than heavy, sour crudes which cost more to refine. Similarly, wet gas, which contains natural gas liquids, commands a premium over dry gas because of its higher energy content.

Unit revenue at each producing region: Revenue at E&P companies is also affected by basis differentials--the difference between the price in a particular region and the benchmark price. These usually arise because of transportation costs or supply and demand characteristics in the production area. If a company's acreage is in a region where the cost of transportation to market is high, or limited capacity makes hydrocarbons difficult to transport out of the region, it typically

Sector description

Companies that derive more than half of their revenue, either from developing and producing oil and natural gas hydrocarbons or from integrated operations in the oil and gas sector.

Subsectors	Typical CPGP
Exploration and production	Commodity focus/scale driven
Integrated	Commodity focus/scale driven
Government-controlled or subject to government policy, regulation, taxation, and tariffs	National industry and utilities

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

sells at a discount to the benchmark price. We view this as an adverse factor. On the other hand, if it is supplying hydrocarbons to a region where demand is high or transportation costs are low, the regional price may include a premium compared with the benchmark. The company will therefore benefit from higher unit revenue, cash flow, and earnings.

Extent of vertical integration: Strategic approaches to integration vary considerably, but it is common for larger E&P companies to operate a cluster of ancillary related businesses.

Related businesses that an E&P company may integrate with 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 that carry third-party volumes can sometimes offer an E&P company a highly stable source of earnings that is not closely correlated with its base earnings. When capacity among third-party suppliers is constrained, vertical integration (for example, ownership of oilfield services operations and assets) can benefit E&P companies by facilitating cost-effective growth in reserves and production. That said, it requires capital, adds to fixed costs, and can exacerbate a downturn's adverse effects. Although integration and diversification can enhance an E&P company's competitive position and increase the stability of its financial performance, the financial results are not always positive.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
A strong record of project execution, with production and costs that compare favorably with operators that have adjacent acreage.	Project execution has historically been poor, so that costs are higher and production inferior to that of operators with adjacent acreage.
A record of allocating capital to basins that have favorable internal rates of return (typically exceeding 30%).	Limited record of allocating capital to basins that have favorable internal rates of return.
Diversification that demonstrably improves profitability or the stability of financial performance throughout the business cycle;	Operations have shown inferior profitability or more volatile financial performance throughout the business cycle.
Where transportation and services, such as drilling rigs, are integrated, unit costs are lower than the available alternatives, sourced through a third party.	A lack of integration with transportation, or equipment and services.
Some degree of leverage with customers and suppliers.	Little or no leverage with customers and suppliers.

Scale, scope, and diversity

We assess scale, scope, and diversity in the E&P sector based on:

- Size of the reserves, because larger reservoirs offer potential economies of scale;
- Geographic diversity of production sources;
- Diversity of hydrocarbons produced;
- Operational risk required to exploit the reserves; and
- Quality of the reserves.

Hydrocarbon reserves, as an E&P company's main assets, are critical to our assessment of the company's scale, scope, and diversity.

Reserve size: If the reserve base is larger than that of peers, we would expect the company to benefit from greater operating flexibility, more geographic diversity, and larger economies of scale. In our view, the size and type of a company's individual reservoirs is important. Large onshore or offshore reservoirs allow companies to spread overhead costs and capital investment across more production, and so provide greater economies of scale. Size can also give companies access to more favorable financing terms, which can significantly boost their competitive advantage when developing or buying properties. During industry downturns, large E&P companies may have greater financial flexibility than their smaller competitors.

Geographic diversity of production: A geographically diversified portfolio can provide opportunities for cost-effective reserves and production growth, if regional factors affect production or reinvestment in a particular area. In addition, by operating in multiple, geographically diverse fields, a large E&P company can reduce its dependence on the operational performance of a small cluster of wells or fields, and make itself less susceptible to regional price volatility. We view production as less diversified if a company operates in several basins but generates most of its earnings from just a few of them. Nevertheless, we may assess a company as having strong/adequate scale, scope, and diversity, even if it operates in just one major basin as long as we expect it to generate above-average profitability, it has an extensive acreage position, and its production profile is clear for at least 10 years.

Diversity of hydrocarbons produced: We would expect a company with a broader production profile to be less volatile. For example, we view the production of a mix of liquids (oil or natural gas liquids) and natural gas as credit positive, in markets where these show low price correlation. A company that has the flexibility to shift production across a range of hydrocarbons is also better positioned to respond to changes in market dynamics.

Operational risk: Most of the easy-to-access oil and gas reserves have already been exploited--exploration now entails drilling in more-difficult conditions, often using novel extraction methods. E&P companies can develop meaningful scale, scope, and diversification in their operations by effectively adapting extraction technologies to exploit newly discovered reservoirs. However, the complexity of the task tends to give rise to greater operational risks. Deepwater drilling techniques, for example, are much riskier than those used in onshore operations. Similarly, it is difficult to make geological assessments in remote locations--uncertain outcomes increase operational risk. Health and safety concerns can also give rise to operational risk.

Quality of reserves--Proved developed producing reserves: Business risk tends to be better for companies with a high proved developed producing (PDP) ratio (the ratio of PDP reserves to total proven reserves). This is because PDP reserves have lower future development costs and production risks than undeveloped reserves. This implies that they have less chance of incurring cost overruns or suffering shortfalls in production. However, the optimal portfolio includes reserves at different stages of development. A PDP ratio of more than 80% (implying a low stock of undeveloped reserves) indicates that, as producing reserves decline, they could be difficult to replace.

Where we see little risk associated with developing reserves, we do not place much emphasis on the distinction between reserves that are proved developed, and those that are proved undeveloped (PUD). For example, recovery of oil sands where the reserves are close to the surface uses a low-risk technique akin to strip mining. There is little geological risk associated with converting reserves to proved from probable, in such cases. We could extend this analysis to other forms of unconventional oil and gas reserves.

Reserve life index (RLI): We use reserves divided by annual production (RLI) to indicate how long a company would take to deplete its existing reserves, at current production rates. RLI is assessed in the context of the company's total reserve base, prospects for organic or acquisition reserve growth, capital position, and operating team. In assessing reserves, we also evaluate the underlying assumed depletion rate. A steep depletion curve could imply a risk of a significant decline in production beyond the next few years if reserves are not replaced. A short RLI of less than five years may indicate that the company has been unsuccessful at replacing its reserves or that it has limited capital for organic and acquisition-related growth. A long RLI of 10 years or more may indicate a company that has a low-risk reserve base and relatively stable production outlook. This is generally the case for companies that focus on oil sands or shale oil. In some cases, however, a long RLI implies that reserves are overstated or indicates a company that has proved itself unable to ramp up production.

Reserve replacement ratio: As E&P companies produce hydrocarbons, they need to find or acquire new sources of future growth. This may be achieved by drilling (organic growth) or by acquisitions. We assess a company's reserve replacement strategy using the reserve replacement ratio (RRR, the amount added to reserves divided by the amount extracted for production) along with its unit finding, development, and acquisition (FD&A) costs (see "Operating efficiency").

Our opinion is largely influenced by the size of the company's existing reserves, and its stage of development. It is not uncommon for an E&P company that has a small reserve base and is growing rapidly to add far more to its reserves in a year than its produces annually. In such a case, we would expect RRR to be a multiple of annual production. On the other hand, an extremely large E&P company with a high annual production rate might need to bolster its organic development with acquisitions. An RRR over 100% could be viewed as excellent for the major E&P company, but mediocre for a small company at the initial stage of its life cycle. Where a company reports an RRR of more than 100% for several years, we see potential for future production growth, and could improve our assessment of the business risk profile.

Reserve disclosures: The U.S. Securities and Exchange Commission, and equivalent authorities in other areas, define the standards used to categorize reported reserves. Although this provides a basis for comparison, management has some discretion about how to apply the standards--this may affect whether reserves are reported as proved developed, proved undeveloped, or probable. Proved developed reserves are the most direct source of current production and cash flow. Capex is required to convert reserves categorized as proved undeveloped or probable or possible resources into proved developed reserves.

We generally quantify reserves and production by industry standards such as barrel of oil equivalent (boe) or thousand cubic feet (mcf) of natural gas equivalent. We determine these based on the energy content equivalency ratio--six mcf of natural gas to one barrel of crude oil or natural gas liquids. We also consider the composition of the sources of ongoing revenue because the energy equivalent can be significantly out of synch with market prices.

Most countries require that E&P companies disclose their reserves at the end of each year; these disclosures are a necessary input to our rating on the E&P company. Cross-country comparisons can be complicated by differences in the definitions used and the level of disclosure required.

In our view, reserve reports that are prepared and audited by internationally recognized third-party engineers have greater credibility than reports prepared internally by the company itself and only audited by third-party engineers, or reports prepared and audited by less well-known engineering firms.

We evaluate the reliability of reserve disclosures based on whether a company has a record of posting substantial or frequent negative technical revisions. Where a company's policy on reserve bookings has historically been aggressive, we may hold it to a higher standard than similarly rated peers. Specifically, we would look for a higher proportion of proved developed reserves when assessing reserve size and quality. That said, we typically have a greater tolerance for negative revisions based on changing prices when analyzing reserve bookings. Such revisions generally occur when oil and gas prices are declining and are reversed when prices improve.

Mergers, acquisitions, and divestitures: E&P companies frequently buy assets to enter new areas or consolidate their interest in existing properties. At the same time, they may divest noncore or high-cost assets to streamline their portfolios or to raise funds. In considering the effect of acquisitions, we focus on how much the company paid for the assets; the opportunities the assets represent for yielding reserves and production; whether they will help the company generate economies of scale; and whether the company has the capacity to manage the new properties. In our view, E&P companies that operate their own properties have a better control of cash outflows than those that rely on third-party operators.

We typically assess scale, scope, and diversity at E&P companies as stronger where they are acquiring assets and increasing their reserve size and production, while managing costs and obtaining higher rates of return on their investments.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Large in scale, typically defined as having reserves of more than 1 billion boe and production of over 350 million boe per day.	Small in scale, typically defined as having total proved developed reserves of less than 50 million boe and production of less than 30,000 boe per day.
An RLI of 10 years or greater.	An RLI of five years or less.
An average RRR that exceeds 100%, over at least three years, and good prospects for production growth, given its drilling inventory and planned investment projects.	An RRR of less than 100% over the past three years, and limited prospects for production growth.
A well-balanced reserve mix that includes both liquids (crude oil and natural gas liquids) and natural gas.	An unbalanced reserve mix.
Exceptionally low production risk and high certainty of reserve replacement, even where the company operates in a relatively small number of fields (typical for certain Canadian oil sands projects).	Significant uncertainty with respect to sustainability of production and reserve replacement.
Fields or projects are geographically diverse and located in countries that have a country risk score of '3' or lower. Most have well-established records of development activity.	Most cash flow comes from one basin, indicating high geographical concentration.

Operating efficiency

We assess operating efficiency in the E&P sector based on:

- Operating and production costs; and
- Exploration and development costs (including capital efficiency and reserve replacement costs).

An E&P company's costs largely depend on the specific hydrocarbons it produces; for example, the operating cost for crude oil is generally higher than that for natural gas. The region in which production is taking place may also affect how costs compare with those of peers. In addition, a company's exploration and development program, and thus its ability to maintain and increase both reserves and production, depends on its capex.

Operating and production costs: Because E&P companies produce commodities, they have no control over selling prices, except through hedging. Controlling the cost of current production (that is, the operating and production costs) is therefore critical to an E&P company's credit profile and we view it as an important indicator of long-term operating strength. By managing their costs, companies may be able to expand and so generate additional cash flow. However, most E&P companies depend on third-party companies to provide critical services such as drilling, pressure pumping, and hydraulic fracturing (fracking), which reduces their control over the related costs.

Exploration and development costs: E&P companies that cannot replace their reserves at an economical cost will eventually fail. Therefore, exploration and development costs--those associated with finding and developing new reserves--significantly affect financial performance. They usually comprise more than half of the total unit cost base. In some cases, particularly offshore production projects, capex reaches its peak well before production can begin. To ensure we take this into consideration, we compare cash operating costs against capital costs.

We evaluate the capital efficiency of exploration by assessing finding and development (F&D) costs relative to peers, which we view as the best measure of organic growth capabilities. We also consider the unit finding, development, and acquisitions (FD&A, also known as all-sources finding and development) cost which indicates how much capital a company spends in all forms to replace a unit of hydrocarbon produced. Most companies that generate a unit cash margin significantly higher than their unit FD&A cost should be capable of delivering annual increases in reserves and production without any external funding requirements. We would expect the largest players to at least maintain reserves and production at a constant level.

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's break-even point can be identified using the recycle ratio, which we calculate by comparing the unit netback (gross profit per barrel) with its unit F&D, or unit FD&A. Unit netback is synonymous with the operating margin per unit, for an upstream company. A recycle ratio of less than 1x indicates that the company may not remain viable; we would typically assess operating efficiency as weak in this case.

Our assessment also considers the upfront costs required to develop basins. Developing offshore fields and certain other projects requires sizable capital outlays. For example, the pipeline infrastructure needed for Canadian oil sands or tertiary projects can be very costly and must be completed before production begins. High upfront exploration and development costs generally mean that start-ups will report poor unit FD&A costs for some years. The degree of volatility in an E&P company's financial performance depends on the balance between its fixed and variable costs.

Unless they are operating in a mature field, start-up companies or those developing new production typically incur high cash operating costs, which heighten risk by dampening financial performance. These largely comprise lease operating expenses and general and administrative costs, which will be disproportionately high at the early stage. Later, as the company increases its production, these expenses can be spread over a larger base.

This effect can give a cost advantage to companies that have a large, stable production base and sustainable growth prospects. However, if these companies experience production shutdowns because of maintenance requirements, pipeline outages, or weather, their cash operating costs per unit of production will rise.

We use the unleveraged full-cycle costs to rank operating efficiency. The unleveraged cost is calculated by combining unit cash operating cost, excluding interest expense, with the unit FD&A costs.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Unit cash operating and unit FD&A costs are consistently below those of peers that have a similar hydrocarbon mix.	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.
Revenue per unit of production is consistently higher, and expected to remain consistently higher, than unit unleveraged costs, based on our pricing assumptions, and unit cash margins are sufficient to cover unit FD&A costs.	Revenue 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).

National oil companies

In addition to the factors considered above, for national oil companies, we place special emphasis on national industry-specific factors that derive from being a national company, and that may positively or negatively affect the company's competitive position compared with peers.

In particular, our analysis considers:

- To what extent heavy taxes or domestic price regulations affect the company's profitability through the cycle;
- To what extent regulations have a stabilizing effect on national oil companies' 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.

Profitability

Because performance in the E&P industry is affected by natural hydrocarbon price volatility and possible changes in company operating efficiency metrics, we do not assess profitability based on standard global benchmarks over a whole cycle. Instead, we rank E&P companies against their peers annually, using the profitability measures listed below.

- Adjusted unit EBIT;
- ROC; and
- Adjusted unit earnings before interest.

We calculate adjusted unit earnings by applying our off-balance-sheet adjustments to unhedged earnings before interest and after taxes, for each unit of production. We may also include the unit EBIT as a proxy metric, depending on the availability of data and its relevance to the peer group used to benchmark a company.

Financial Risk Profile

Supplementary ratios

In our view, the most likely source of financial stress for an E&P company is an inability to fund its minimum ongoing investment requirements, or its maintenance capex. Reserve replacement, and thus production stability, rely on substantial access to capital. Our preferred supplementary ratios in the sector are FOCF to debt and DCF to debt. In calculating FOCF, we assume that maintenance capex, at least, is required. We view DCF to debt as most relevant for companies that pay out a portion of excess cash flow to shareholders.

We use our price assumptions for oil and natural gas when assessing the financial risk profile. To capture the higher volatility typical of speculative-grade companies, we generally focus on financial performance in the current and next year. We add an additional forecast year when assessing more stable companies. The diversified operations of the major integrated companies should enable them to demonstrate some stability through a price cycle, in our view. Therefore, in assessing these groups, we take into account historical ratios for the previous two years, as well as our estimate for the current and our forecast for the two subsequent years.

Section 25 | Oilfield Services And Equipment

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the oilfield services and equipment sector based on:

- The technological complexity of the company's services and equipment,
- The value to customers of the services and equipment being provided,
- The company's ability to set prices for its services and equipment, and
- The company's ability to quickly service or replace equipment and relative market position.

Technological complexity: The most-challenging oilfield projects require use of the latest technology. This can create a barrier to entry that protects oilfield services and equipment companies that have the strong technical skills and equipment needed to assist customers in executing these projects. Similarly, providers that can offer a suite of services and equipment have a competitive advantage over those that offer a single product or service.

Customer value: In our view, access to the leading technology also helps companies add value to their existing services and equipment, and so increase demand for their offering. By enhancing the customers' ability to recover oil reserves, for example, providers can strengthen their pricing power.

Sensitivity to prices: Companies that are more susceptible to price competition generally find profitability is eroded during cyclical downturns, or when the supply of equipment exceeds demand. Pricing pressures have the strongest effect on oilfield services and equipment companies that provide more-commoditized services and less-complex equipment. This is because the limited opportunities for differentiation available to them can impede their ability to protect their market share.

Responsiveness and market position: Market-leading companies have stronger reputations and pricing power, and can access global markets, easing the impact of regional changes in demand. They are also able to respond more quickly to customer demands. Given the significant cost of downtime, the ability to service equipment in a timely manner is key to achieving market acceptance and improving brand reputation.

Sector description

Companies that derive more than half of their revenue from providing services and equipment to the exploration and production industry and are therefore largely dependent on capex in that industry.

Subsectors	Typical CPGP
Barges and vessels	Commodity focus/scale driven
Diversified providers that use proprietary technology	Capital or asset focus

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Leading positions in its market segments.	Second-tier position in key market segments.
Technological leadership has enabled the company to research and develop successful new services and equipment, bolstering its favorable industry reputation and utilization rates.	Utilization of services and equipment falls when market conditions are weak because they do not materially improve exploration and production (E&P) companies' success rates or reduce their production costs.
Offering includes a suite of services and equipment that adds customer value and affords barriers to entry and pricing power.	Profitability is volatile because the company is highly susceptible to price competition.

Scale, scope, and diversity

We assess scale, scope, and diversity in the oilfield services and equipment sector based on:

- The company's relative size (measured by revenue and EBITDA);
- The depth and breadth of its product offerings;
- Its geographic diversity (measured by revenue and EBITDA); and
- Customer concentration.

Relative size: Larger oilfield services and equipment companies generally also lead the market in terms of technological innovations because they have the resources to invest a significant amount into R&D and are able to bring new services and equipment to market on time. In turn, this helps them maintain their market position and boosts their pricing power. We expect them to offer large-scale services in multiple countries or regions that carry relatively low risk (that is, where the country risk score is '3' or better).

The depth and breadth of its product offerings: Although some downturns are severe enough to affect all markets, we would expect companies that offer a diverse range of products to enjoy greater flexibility and more financial stability during downturns because they are less dependent on any one product. We consider that companies can gain an advantage by balancing the services and equipment they sell across the production, exploration, and development phases of oil and gas projects. Ratings can also be strengthened if a company targets multiple different hydrocarbon markets, notably natural gas and crude oil. Conversely, smaller players, especially those that focus on commodity-like oilfield services and equipment, are generally less able to command favorable terms and can find that slow collections become a particular problem.

Geographic and customer diversity: Our assessment of scale, scope, and diversity is influenced by the relative attractiveness of a company's markets, in terms of size, expected growth, cyclicality, barriers to entry, and intensity of competition, and how the company has positioned itself in those markets. Smaller oilfield services and equipment companies are more likely to serve smaller customers, whose demand for services and equipment can fluctuate depending on the price environment. Conversely, companies that we assess as having greater scale, scope, and diversification tend to sell to large, established E&P or integrated oil companies, which operate across a broad geographic range and themselves display good customer diversification and more predictable capex. The need for oilfield services and equipment at larger E&P and integrated oil companies is more stable, even in a downturn.

Although it is not common for companies in the oilfield services and equipment sector to enter into long-term contracts with clients, where they do, we analyze how much the use of these contracts bolsters cash flow predictability.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Leading market share across three or more broad product and service segments, so that revenue base is in the top tier for the industry.	Operations are limited in scale and breadth.
Participation in multiple product lines mitigates a firm's exposure to the risks of a single market or commodity.	Product offerings are limited and may focus on low-value-added items that are subject to very high competition.
Operations and cash flow are geographically diverse and the company's service provision is mainly in relatively low-risk countries and regions.	High geographical concentration or significant exposure to high-risk countries.
Strong, long-term customer relationships and a diversified customer base.	Customer base shows limited diversification or the company depends on smaller customers with more-cyclical needs.
A significant amount of business is conducted under contracts that have favorable provisions, including clauses that protect against the risk of order cancelations.	High exposure to investment in exploration, which is the more-cyclical part of the E&P industry.

Operating efficiency

We assess operating efficiency in the oilfield services and equipment sector based on:

- The flexibility of a company's cost structure;
- Working capital management when market conditions are weak; and
- The efficiency and quality of equipment manufacturing.

Flexibility of the cost structure and working capital management: Because demand for services and equipment can be volatile in this sector, we see a flexible cost structure as key to maintaining performance through the business cycle. Many oilfield services and equipment companies are able to release working capital during downturns--for example, by reducing inventory purchases or releasing crews--while continuing to collect on existing contracts.

Efficiency and quality of equipment manufacturing: Order backlogs at equipment manufacturers are common and fulfilling these orders can provide a buffer when market conditions weaken. We also analyze an equipment manufacturing company's manufacturing efficiency, operating margin, and reputation for quality when assessing their operating efficiency. Operations in the energy industry are coming under increasing regulatory scrutiny. Given the stringent requirements being imposed, we consider high quality to be essential; if a manufacturer's services and equipment cannot be relied upon, it will find itself at a disadvantage to peers.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Cost structure is flexible and enables the company to quickly reduce operating costs, especially labor costs, when markets weaken.	Cost structure is less flexible, so that it is difficult to quickly adjust to market conditions.
Able to limit working capital needs when growth slows.	High working capital requirements, even when growth slows.
An extensive record of constructing equipment on time and on budget, while also meeting the customers' needs.	Limited record of delivering equipment on time and on budget.

Financial Risk Profile

Supplementary ratios

FOCF to debt is our preferred supplementary ratio for oilfield services and equipment companies because working capital and capex cycles can significantly shape cash flow generation patterns through the cycle. During an upturn, companies need to increase their working capital and capex to meet the elevated demand for equipment and services. This can limit the benefit to cash flow and frequently leads to negative FOCF. Conversely, in the early stages of a downturn, capital released by liquidating inventories and trade receivables, combined with lower capex, can benefit free cash flow.

Companies that offer diversified oilfield services and have their own proprietary technology typically have less cyclical capex needs, but spend more on R&D. To capture these elements more effectively, we may choose to use FOCF to debt as a supplementary ratio.

Alternatively, we may use DCF to debt to refine our analysis of companies that pay higher dividends to shareholders or pursue share repurchase programs. This helps us to evaluate how they use cash and how that may affect debt repayment. Companies that make more aggressive shareholder returns, as indicated by a weak ratio, may see reduced DCF when crude oil and natural gas prices are falling, which could weaken their ability to service their debt.

Section 26 | Pharmaceuticals

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Business Risk Profile

Sector description

Companies that generate more than half of their revenue from developing, manufacturing, or marketing branded or generic drugs.

Subsectors	Typical CPGP
Branded	Services and product focus
Generic	Commodity focus/scale driven
Contract development and manufacturing organizations (CDMOs)	Capital or asset focus

Competitive advantage

When we evaluate competitive advantage for pharmaceutical companies, the nature and focus of our analysis differs across the three pharmaceutical subsectors.

Branded

We assess competitive advantage in the branded pharmaceuticals sector based on:

- Pipeline quality, by number of compelling new prospects, market potential, and ability to replace lost sales;
- Market exclusivity profile;
- Number of blockbuster drugs;
- R&D spending level and productivity;
- Marketing and brand recognition; and
- Negotiating power with payors.

Pipeline quality: In considering the quality of a company's new product pipeline, we examine the products that are at an advanced stage of development, or have just started to be commercialized, and evaluate them primarily based on their capacity to replace lost sales and offset revenue declines from patent expirations. In our view, the number of products undergoing late-stage (phase III) trials is important, but so is their relative value. Trials for new molecular entities (NMEs) are viewed as more innovative, and therefore more valuable, than those focused on gaining approval for an existing drug to be used to treat additional medical conditions (known as indications), or those that expand dosing options or delivery forms (for example, offering drugs already being taken orally as a patch).

Market exclusivity profile: This measures the scale of the potential loss of sales from patent expiration and competition, and is defined as the percentage of total sales that are derived from drugs that face generic competition within the next three years. In some cases, we adjust the percentage to account for nonpatent barriers to entry, such as those for orphan drugs. When evaluating the risk posed by the proportion of sales exposed to generic competition within three years, we also consider pipeline quality and the ability to replace those lost sales. The lower the sales at risk and the higher the ability to replace them, the better for competitive advantage.

Blockbuster drugs: Blockbuster drugs are those that bring in sales of at least $1 billion a year. Their high profit margins help companies fund further R&D to generate future earnings and cash flow.

R&D spending and productivity: We evaluate pharmaceutical companies on their ability to maintain revenue growth and profit margins as individual products progress through their life cycles. In particular, we consider how well they manage the sharp decline in earnings at the end of the patented period, when low-cost generic versions appear. Successful branded pharmaceutical companies harness their R&D capabilities and conduct acquisitions to enhance their new product pipelines. This enables them to produce new products that can replace aging ones. We evaluate their success by estimating potential revenue losses from loss of market exclusivity on older drugs and comparing it with potential revenue gains from products in the pipeline.

Marketing and brand recognition: Branded pharmaceutical companies can gain a substantial competitive advantage by getting branded drugs to market well ahead of competing products. Marketing capabilities generally play a lesser role but may distinguish the stronger companies.

Negotiating power with payors: In this sector, negotiating power mostly operates at the individual drug level and depends on the nature of the medical condition being addressed, the product's clinical efficacy, and its side effect profile. We also consider the number of competing alternatives, how well-entrenched they are, and how each company's products compare.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Strong: it can replace 90% or more of lost sales from its pipeline. Strong/adequate: it can replace 70% or more of lost sales from its pipeline.	Adequate/weak: it can replace 50% or less of lost sales from its pipeline. Weak: it can replace less than 30% of lost sales from its pipeline.
Less than 10% sales exposed to loss of exclusivity in the next three years, that is, we do not expect it to lose more than 10% of its sales to generic competitors over the next three years.	More than 30% of its sales are at risk of being lost to generic competitors within the next three years.
It consistently develops new blockbuster drugs and has seven or more of them in production.	It has three blockbuster drugs or less.
Its R&D strategy is consistent with its capabilities and market conditions.	Insufficient or unproductive R&D spending.
Strong marketing strategy that supports favorable brand recognition and products are successfully marketed, both to professionals who prescribe and to consumers.	Poor marketing practices and manufacturing problems have historically triggered substantial or repeated regulatory sanctions.
Its high volumes enable it to command favorable terms from distributors, hospitals, and retailers.	It ranks below the top 100 in terms of global drug sales, indicating that it lacks clout with distributors, hospitals, and retailers.

Generic

We assess competitive advantage in the generic pharmaceuticals sector based on:

- Speed-to-market,
- Manufacturing expertise, and
- Volume-derived clout with customers.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
It is consistently the first to file a drug application, before other generic competitors. Under the abbreviated new drug application (ANDA) process in the U.S., being first to file gives it six months exclusivity to sell its generic version alongside the patent holder.	It lacks the capabilities needed to attain first-to-file status.
It has a significant amount of special manufacturing expertise (for example, topical applications, liquid dosing, or transdermal patches).	It has limited ability to manufacture special formulations.
Its high volumes enable it to command favorable terms from distributors, hospitals, and retailers.	It ranks below the top 100 in terms of global drug sales, indicating that it lacks clout with distributors, hospitals, and retailers.
A proven history of working with regulators without any serious adverse findings.	It has a history of substantial or repeated regulatory sanctions because of manufacturing problems or its marketing practices.

Contract development and manufacturing organizations (CDMOs)

Both branded and generic pharmaceutical companies may outsource manufacturing or development to a CDMO. This market is extremely fragmented, highly competitive, and price-sensitive, giving the pharmaceutical companies a much stronger bargaining position. We rarely assess competitive advantage for a CDMO as strong.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Special manufacturing expertise, for example, in liquids or transdermal patches.	No special manufacturing expertise.
A proven history of working with regulators without any serious adverse findings.	A history of regulatory issues, especially if they resulted in the temporary or permanent closing of a plant (for example, in the U.S., adverse findings from the Food and Drug Administration)

Scale, scope, and diversity

Branded

We assess scale, scope, and diversity in the branded pharmaceuticals sector based on:

- Product diversity;
- Geographic diversity, including presence in the U.S.;
- Therapeutic diversity; and
- Market leadership.

Product diversity: The percentages of sales derived from a company's top product, and from its top three products, determine our view of product diversity. Product diversity mitigates the sales impact of new competition or the loss of market exclusivity. It also mitigates the risk that a manufacturing misstep or serious side-effects could force them to withdraw a product from the market. In our view, a product that has many different indications is subject to less risk than a product that is used to treat only a single medical condition. Successive generations of a product that all address the same indication provide less product diversity than a group of products that address different indications. Products that target animal health support both product and therapeutic diversity.

Geographic diversity and presence in the U.S.: Geographic diversity can blunt the effect of unfavorable economic, regulatory, or other developments in a specific country or region. We view a strong presence in the U.S. as positive if it is part of a geographically diverse portfolio, due to the larger size, higher growth, higher prices and profitability of the market, though if sales are highly concentrated in the U.S. the company's profitability may be more volatile. When assessing the geographic diversity of a branded pharmaceutical company, we consider the geographic mix of sales relative to the global industry average.

Therapeutic diversity: Branded drug companies always face the risk that a competitor could introduce a breakthrough product in a therapeutic area that they target. Diversifying across therapeutic areas (such as oncology or diabetes) reduces the potential damage. In our assessment, we consider the diversity of a company's exposure to different diseases within each therapeutic category, the size of the category, and the company's ability to lead the market in each category. The percentages of sales derived from a company's largest therapeutic category, and from its three largest therapeutic categories, also helps us determine the depth of its therapeutic diversity.

Market leadership: Therapeutic markets can differ markedly in size--for example, cardiovascular is much larger than gastrointestinal. To assess market leadership, we identify the largest therapeutic category served by the company and calculate its market share within that therapeutic category, based on revenue and prescriptions. Revenue in the smallest, weakest therapeutic categories comprises less than 1% of the industry total; revenue from the largest, strongest categories can be over 10% of the industry total. We regard a market share of over 20% as strong, and under 5% as weak. Our view of market leadership gives equal weight to the strength of the market share and the size of the therapeutic category.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Product diversity is considered strong when the company derives less than 25% of sales from its top product and less than 50% from its top three products. It is considered strong/adequate when the company derives 25%-30% of sales from its top product and 50%-60% from its top three products.	Product diversity is considered adequate/weak when the company derives 40%-60% of sales from its top product, and more than 70% from its top three products. It is considered weak when the company derives more than 60% of sales from its top product.
Therapeutic diversity is considered strong when the largest therapeutic category represents less than 35% of sales and the top three less than 60%. It is considered strong/adequate when the company derives less than 35%-45% of its sales from one category and 60%-70% from the top three.	Therapeutic diversity is considered adequate/weak when the largest therapeutic category represents 55%-70% of sales and the top three more than 80%. It is considered weak when the company derives more than 70% of sales from one category.
Nearly all of its sales are in countries with strong patent protection.	More than 20% of its sales are in countries with weak patent protection.
Presence in the top largest markets--the U.S., EMEA, and Japan.	It derives more than 50% of its sales from one country, other than the U.S.
Its percentage of sales from emerging markets is at least equal to the industry average.	It derives less than 10% of its revenue from emerging markets.
Market leadership is strong if it is established in at least three products/therapeutic categories, and in large growing markets. It is strong/adequate if it has established leadership positions, but in fewer than three categories.	Market leadership is adequate/weak is the company's only leadership positions are in markets that are more limited in terms of size and growth prospects. It is weak if it has minimal leadership positions.

Generic

We assess scale, scope, and diversity in the generic pharmaceuticals sector based on:

- Overall market penetration, indicated by a company's global sales ranking among generic drug companies;
- Market share trends;
- Geographic diversity of revenue base and manufacturing footprint; and
- Technical capabilities.

Leading generic drug companies address nearly all major therapeutic categories, whereas the leading branded drug companies address only a few. Therefore, we do not explicitly measure therapeutic diversity for a generic drug company since we consider its sales ranking captures its therapeutic diversity. Similarly, the frequent changes to their product portfolios make product diversity less relevant compared with branded peers. Instead, technical capabilities become more important to our view of diversity; that is, the company's ability to produce specialized or more-complex products, such as injectable medicines, topical drugs, transdermal patches, extended-release drugs, and biosimilars.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
One of the top five global generic drug companies, based on revenue.	Ranks below the top 10 global generic drug companies, based on revenue;
Growing share of the global market.	Market share is trending down.
Strong presence in all major geographic drug markets, including the U.S. and EMEA.	Revenue is concentrated in one country, other than the U.S.
Manufacturing base is reliable and geographically diversified.	Manufacturing is concentrated (for example, it has only one facility), so that a failure could halt production.
Capable of handling more-complex products and producing specialized generic drugs in a variety of formulations.	Minimal ability to produce specialized or more-complex generic formulations.

Contract development and manufacturing organizations (CDMOs)

In assessing scale, scope, and diversity for CDMOs, we take a qualitative view of their therapeutic and geographic diversity. CDMOs are especially exposed to customer and product concentration risks because their customers may move production of a product in-house, cancel production entirely, or select a competitor at any time. Less often, quality problems or financial distress at the customer end may prompt them to sever their relationship with the CDMO.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Its top customer accounts for less than 10% of its revenue.	Its top customer accounts for 30% or more of its revenue.
Its top 10 customers account for less than 50% of its revenue.	Its top five customers account for 80% or more of its revenue.
Much of its client base comprises large pharmaceutical and biotech companies.	It has a high exposure to small pharmaceutical and biotech companies.
It participates in product development as well as manufacturing services.	Its relationship with clients is limited to manufacturing.

Operating efficiency

We assess operating efficiency in the pharmaceuticals sector based on:

- A company's ability to maintain profit margins during stressful periods (for example, when a key drug loses market exclusivity);
- The nature and flexibility of the cost structure;
- Working capital management; and
- The absence or presence of manufacturing problems.

We do not necessarily view outsourcing of research, manufacturing, or sales as positive or negative. However, we take into account how companies incorporate new products in their portfolio. We do recognize that EBITDA margins may be overstated--companies that rely heavily on acquisitions to add new products to their portfolios do not spend as much on R&D as companies that are more focused on internal development.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Maintains stable margins even during adverse conditions.	Profitability shows a pronounced decline during adverse conditions.
Record of success in bringing new products to market in a timely manner through development.	Record of material or repeated regulatory sanctions because of its marketing practices or manufacturing problems that it cannot remedy quickly.
Proven ability to navigate the patent and regulatory approval processes.	Staffing is not well matched to manufacturing capacity.
Raw material costs are relatively modest (higher for CDMOs).	The cost of raw materials is high or volatile.
Good working capital management.	Poor working capital management.

Financial Risk Profile

Supplementary ratios

If the preliminary cash flow/leverage assessment indicated by the core ratios is significant or weaker, we place more emphasis on EBITDA interest coverage as a supplementary ratio. If the company has PIK debt, PIK preferred stock, or low-coupon convertible debt, we use FFO plus cash interest paid to cash interest paid as a supplementary ratio because it enables us to incorporate the lower level of cash interest.

Section 27 | Railroad, Package Express, And Logistics

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the railroad, package express, and logistics sector based on:

- Overall route network by coverage area, position of hubs, and investments in major infrastructure;
- Market position within the markets a company serves;
- Size of revenue base and unit sales;
- Service standards and reputation; and
- Effectiveness of the marketing strategy and sales force.

Railroad

We assess whether railroads have direct access to factories, utilities, mines, and ports, all of which could generate substantial freight traffic. We also consider the safety record and reputation, especially if the railroad transports hazardous materials such as chemicals.

Package express

New products and complementary offerings can bolster the competitive advantage of package express companies. These are often inspired by increased technological capabilities and can help companies deepen their customer relationships by meeting specific customer needs. Technology can also lower costs, improve service, and increase efficiency--thus making it less likely that customers will switch to a competitor.

Logistics

We consider how involved they are in supply chain management for their major customers, and whether they provide value-added services, or a more commoditized offering. In addition to pricing, we consider key contract terms that can affect the potential to make an increased profit, or can protect against exposure to downside risks. For example, some contracts include provisions that impose material switching costs on customers.

Sector description

Companies that derive more than half of their revenue from transporting freight and packages, and providing services that support the movement of goods through the supply chain (logistics).

Subsectors	Typical CPGP
Asset-lite logistics	Services and product focus
Logistics that includes warehousing and inventory management	Capital or asset focus
Monopolistic railroads	National industry and utilities
Package express	Services and product focus
Railroads	Capital or asset focus

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Operates in large and growing markets, with barriers to entry.	Operates in a smaller market with low growth potential or with few barriers to entry.
A leading or very substantial market share in the markets where the company competes.	Has a relatively modest market share.
Control of scarce infrastructure or long-term contracts that establish barriers to entry and thereby bolster pricing power or make revenue more stable.	Lacks infrastructure, long-term contracts, or clearly differentiated service, leaving the company to compete mostly on price.
Strong technological capabilities that allow a company to build and maintain complex transportation networks and information systems.	Lacks leverage with key product manufacturers, vendors, and suppliers and is typically a price follower.
Varied service offerings that, from a consumer perspective, enable differentiation from peers.	Has not sufficiently developed its information technology resources.
Better-than-average service (based on metrics such as on-time performance, computerized billing, and tracking services).	Service offering is limited and the company has a history of operational or service challenges.
Long-standing relationships with key customers.	Limited record of maintaining long-standing relationships with key customers.
Strong name or brand recognition, particularly for package express companies.	Limited or no brand recognition.

Scale, scope, and diversity

Railroad

For railroads, we measure scale by freight revenue, volumes, track miles, diversity of customers and end markets served, and types of services provided. The characteristics of the area covered by a railroad's network can also boost our assessment of its scale, scope, and diversity.

Package express

In this subsector, we analyze whether the company has access to major markets and can provide national and global coverage, as well as whether it has an integrated network that can handle various products. Other key factors include the company's route network and the position of hubs. We also examine regional diversity (based on the breakdown of revenue and operating profit) as well as the range of different customers and industries they serve.

Logistics

In this subsector, we measure scale by revenue and the number and specialization of the services provided. Our assessment of scale, scope, and diversity also incorporates the size of the company's end markets and customers, as well as their diversity by geography and other characteristics.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Participates in a variety of markets that have favorable supply and demand fundamentals and that are not closely correlated.	Participates in only a few markets, especially if those markets have unfavorable growth prospects or are intensely competitive.
The size of the equipment fleet and IT resources supports above-average revenue generation and profit by enabling better utilization and economies of scale.	Small market share that leaves the company vulnerable to larger competitors and may force it to compete mainly on price.
The company offers a wide and diverse range of services that are attractive to customers.	Concentration in terms of service offering, and end markets served.
Good customer diversity.	Concentrated customer base.

Operating efficiency

We assess operating efficiency in the railroad, package express, and logistics sector based on:

- Economies of scale;
- Labor costs;
- The efficiency of equipment; and
- Management of route: networks, equipment, and employees.

Railroad and package express

To identify operating efficiency at railroads, we calculate the operating ratio (operating expenses, including depreciation, as a percentage of operating revenue). For package express companies, we consider operating margins, chiefly EBIT margins. Revenue per unit is a key metric for both subsectors. Typically, for railroads, the unit will be a carload or a container, but for a package express company we often simply look at revenue per package. We also monitor measures related to service quality, such as on-time delivery statistics for both railroads and package express companies. Given that market characteristics can vary greatly among countries and regions, we take into consideration geographic concentrations when assessing these operating statistics for package express companies.

Logistics

Companies in this subsector provide a variety of different services, which can make it difficult to compare their operating efficiency. We view EBIT margins as key to our assessment. To evaluate working capital management, which is particularly important in this subsector, we consider statistics such as days' receivables against close peers that have a similar service offering. In addition, where the information is available, we consider what percentage of a company's real estate properties (for example, its warehouses) are empty, to identify the efficiency of its asset management.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Economies of scale, lower labor costs, more fuel-efficient equipment, or process efficiencies have created a sustainable advantage in terms of operating costs.	Operating profitability is below average because higher operating costs are not offset by higher revenue, compared with peers.
Efficient management of route networks, equipment, and employees boosts revenue generation while controlling operating costs.	Revenue generation is below average because of poor management of assets and employees.
Revenue-generating equipment or IT resources are newer or more suitable than those of competitors.	Revenue-generating equipment or IT resources are lacking or dated versus competitors.
Relatively stable and positive labor relations that supports the availability of labor under reasonable contracts.	Labor relations or provisions in labor contracts have the potential to affect a company's ability to operate efficiently.
Regulations that do not impose a competitive disadvantage.	Regulations that impose a competitive disadvantage.
Good working capital management, particularly for logistics companies.	Poor working capital management.
Effective management of capacity additions.	Poor management of capacity additions.

Financial Risk Profile

Volatility tables

We apply the medial volatility table to railroad companies that are not monopolistic railroads and that:

- Generate most of their revenue from the movement of freight;
- Have a CICRA of '2' or better; and
- Have a business risk profile assessment of fair or better.

In all other cases, we use the standard volatility table.

Supplementary ratios

A railroad or package express company is more likely to default because it has run out of cash than because its capital structure proved unsustainable during a downturn. Therefore, our preferred supplementary ratios are FFO plus cash interest paid to cash interest paid and EBITDA to interest. In addition, we use FOCF to debt to capture capital intensity, particularly for railroad companies.

Section 28 | Refining And Marketing

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Business Risk Profile

Competitive advantage

Competitive advantage typically has limited effect on our analysis of refining and marketing companies because refiners engage in marketing commodities, so they have limited ability to gain a competitive edge or increase profitability through product differentiation or branding. Therefore, we generally assess competitive advantage as adequate. That said, we may assess competitive advantage as strong or strong/adequate when the refining and marketing company is integrated with other business lines, such as midstream or retail, that extend its operations sufficiently to enable the company to benefit from higher, more stable profitability across its entire operations. Conversely, we may assess competitive advantage as adequate/weak or weak if the company has limited integration with other business lines and competes mainly with larger, more-diversified companies. In particular, private, independent refiners can be at a disadvantage in countries where refining operations are subsidized.

Scale, scope, and diversity

We assess scale, scope, and diversity in the refining and marketing sector based on:

- Total refining capacity and number of refineries;
- Geographical diversity in terms of feedstock supply, logistics, and end markets;
- Product mix and complexity; and
- Integration with midstream and downstream lines of business, and the extent of its marketing operations.

Refining capacity and number of refineries: The number of refineries that a company operates and its total refining capacity are key to our assessment of its scale, scope, and diversity. We define companies that can refine at least 500,000 barrels per day (bpd) as having a large total capacity base. High production volumes enable companies to achieve economies of scale and spread their overhead costs more widely. In addition, large refining companies have stronger purchasing power and can often negotiate more favorable prices for crude oil and other raw materials than smaller companies. Ultimately, larger scale should contribute to lower unit production costs.

Over time, we would also expect refining companies that operate multiple refineries and enjoy high production diversity to benefit from higher utilization rates than less-diversified refiners. In our view, potential downside from operating hazards can be minimized by spreading operations over at least three different facilities.

Sector description

Companies that derive more than half of their revenue from refining crude oil into products such as gasoline, diesel, or jet fuel; or companies that derive more than half of their revenue from converting other organic or waste feedstocks into biomass, biofuels, and renewable fuels. These companies market refined commodities, such as gasoline and diesel to retail outlets such as gas stations on a wholesale basis.

Subsectors	Typical CPGP
Refining and marketing	Commodity focus/scale driven

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Our sector-specific liquidity considerations are described in "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers."

Geographic diversity: We consider geographic diversity in terms of the markets in which a company competes, and the location and regional concentration of its refining and marketing assets. Given that market conditions vary considerably across regions and countries, being able to switch between serving domestic and export markets in response to fluctuations in demand and pricing conditions can offer a distinct advantage. Nevertheless, a small-scale refinery may be highly profitable if its entrenched or niche position gives it greater pricing power, in a market that is insulated from competition. In addition, the risks associated with having assets concentrated in one region may be offset if the company can take advantage of favorable supply-and-demand trends, has more crude oil feedstock options, or has access to markets in which demand for refined products is strong.

Product mix and complexity: Crude oil comes in a variety of different types and typically accounts for well over 80% of a refinery's cash costs. We consider the mix of crude oil sourced by a refining company to be key to its competitive profile. Light, sweet crudes are generally more expensive, but require less treatment, and can be refined into a number of high-value products, such as gasoline, kerosene, and jet fuel. Heavy, sour crudes are generally used to produce heavier, lower-priced refined products, such as asphalt and residual fuel oil.

The more complex the refinery, the more flexible it can be with regard to its feedstock. Less-complex refineries offer only simple distillation and desulfurization of heavy, sour crude oil. By contrast, facilities with greater complexity can process a range of different crude oil feedstocks, including those that are heavier or have higher sulfur content, into high-value-added products. In comparing facilities and companies, we use third-party indices such as the Nelson Complexity Index.

Having more feedstock options enables a refinery to take advantage of the differential between heavy sour and light sweet crude prices. However, complexity does not always protect against adverse market conditions because this differential will change, depending on global production. That said, in our experience, profits at companies with highly complex refineries are higher and more stable, over time. We therefore consider that complexity offers a competitive advantage.

Integration with other business lines: Refining and marketing companies that have midstream and downstream operations typically have greater flexibility in sourcing different types of crude oil. This minimizes feedstock costs and makes it easier for the refinery to bring its finished products to market. Downstream integration and diversification may include:

- Participation in oil and gas common-carrier pipelines that have regulated tariffs;
- Ownership of logistics networks; and
- Integration into high-value-added petrochemicals.

In some cases, logistics networks are extensive and may be supported by a fuel marketing business that encompasses transportation, distribution, and retail operations, such as a chain of branded gas stations.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Total refining capacity of at least 500,000 bpd.	Small scale, based on total refining capacity.
Operates at least three different refineries and is not overly reliant on any one asset to generate its cash flow.	Operates only one or two refineries, or is overly reliant on one asset to generate its cash flow.
The asset base is geographically diverse or, if assets show regional concentration, they are in markets that have attractive supply and demand characteristics, where crude oil feedstock options are advantageous, and there is strong demand for premium refined products.	Participates in a single market, or in several closely correlated markets that are also served by several competitors; and has no market advantage in terms of low-cost feedstock or refined products that command a premium.
A high degree of complexity, with a value-added product mix.	Facilities have limited complexity and finished products are low in value.
Downstream integration with an established player, such as a midstream company or a retail network.	Limited or no midstream or downstream integration.

Operating efficiency

We assess operating efficiency in the refining and marketing sector based on:

- Operating and processing costs;
- Operating flexibility compared with peers;
- Utilization rates and record of unplanned outages;
- Ability to source feedstock and market its products; and
- Insurance coverage.

Operating and processing costs: We define operating and processing costs as cash operating expenses per barrel of throughput. Energy typically represents the second-largest cost for a refinery, after raw materials. In some regions, such as the U.S., companies have access to low-cost natural gas, giving them a significant cost advantage over companies that use fuel oil. As complexity also has a considerable effect on the cost structure, we compare costs against those of peers of a similar complexity.

New refineries are generally more efficient and reliable than old ones, but the difference largely disappears if an older facility has been well-maintained and has undergone extensive retrofitting. Therefore, we view ongoing operating results as a better gauge of cost-competitiveness than age, in such circumstances.

Operating flexibility compared with peers: Large-scale refineries, with a capacity of at least 150,000 bpd, are typically the most efficient. In many cases, the companies that operate large-scale facilities benefit from economies of scale and may have invested in features such as hydrocrackers and cokers to improve their yield of high-value-added products.

Utilization rates and record of unplanned outages: Because fixed costs are typically high in the refining business, companies generally aim to maintain high utilization rates so that fixed costs per unit remain low and profitability is satisfactory. In assessing operating efficiency, we compare peer companies based on the operating rates they disclose, to understand how they define these rates and the circumstances surrounding any major unplanned outages.

Ability to source feedstock and market its products: Some refining and marketing companies maintain extensive proprietary pipelines for both crude oil and refined products. This is expensive, but gives them a significant and defensible advantage over regional peers when sourcing feedstock and in marketing. For example, a refining company that owns its own pipeline can direct products to the market that offers the greatest return.

Location can support a refining company's cost-competitiveness and operating flexibility. The closer a refinery is to its supply of crude oil, and to its end users, the less it will pay to transport feedstock and finished products. Compared with landlocked refineries, their coastal competitors have far greater flexibility in sourcing relatively low-cost feedstocks and are better placed to exploit sales opportunities in export markets. However, they also face more competition from waterborne imports to their home territories.

Insurance coverage: Given the potential for significant operating hazards, many refining companies maintain extended third-party property and casualty insurance coverage. This typically includes protection against business interruptions caused by operating hazards, which may include hurricanes and terrorist attacks. Standard insurance contracts generally provide limited and incomplete protection against hurricane damage and apply very broad exclusions to terrorism risk coverage.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Lower-than-average operating or processing costs.	Higher-than-average operating or processing costs.
Consistently high utilization rates.	Inconsistent utilization rates.
Minimal unplanned downtime or outages.	Inconsistent operating performance, characterized by a high level of unplanned downtime or outages.
An extensive network of proprietary crude oil and refined product pipelines.	Sole reliance on third-party logistics assets to source feedstock and market products.
Insurance coverage that is at least in line with industry standards and includes protection against business interruptions.	Limited insurance coverage.

Profitability

Given the pass-through nature of refining, operating margins tend to fluctuate in line with the price of crude oil, making them less useful as a measure of profitability. We therefore rely more on a refiner's ROC. Because profitability can vary so widely from year to year depending on industry conditions, we generally forecast ROC using near-term market conditions (typically for the current year and for the following year) based on current trends, but we use normalized, or midcycle, expectations for later years. We define "midcycle" conditions as a long-term average that typically encompasses the past 10 years, provided that the period contains both strong and weak market conditions.

Financial Risk Profile

Supplementary ratios

We generally use FOCF to debt as the supplementary ratio for refining and marketing companies. Our FOCF calculation generally considers only the capex required to maintain the integrity of the refinery, including the cost of meeting environmental, safety, and regulatory requirements. This is because including large growth-based capex could skew the ratio.

Volatility adjustment

Our use of the volatility adjustment varies according to the point in the commodity cycle.

When we believe that prices are at or near the peak, we typically consider cash flow ratios to be highly volatile and adjust our cash flow/leverage assessment down by two categories as the high refining margins associated with strong market conditions may contract sharply when prices fall.

When market conditions reflect our midcycle assumptions, we typically assess cash flow ratios as volatile and modify our cash flow/leverage assessment down by one category to account for the intrinsic volatility of the sector.

We do not typically make a volatility adjustment if market conditions indicate a cycle at the trough or if our forecasts use assumptions based on the trough of the cycle. Such forecasts already assume stressed market conditions. Regardless of the above, if the refinery has or is expected to maintain minimal debt, and we expect our assessment of cash flow/leverage to remain minimal, even during times of severe market stress, we may not apply a volatility adjustment.

Section 29 | Regulated Utilities

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Business Risk Profile

Regulatory advantage

Market forces are not typically the main driver of competitive position for regulated utilities, and therefore we do not measure competitive advantage in the same way as we do for competitive firms. Instead, we assess regulatory advantage because the influence of the regulatory framework and regime is of critical importance. It defines the environment in which a utility operates and has a significant bearing on a utility's financial performance.

Regulations vary across different regulatory jurisdictions, that is, the area over which a regulator has oversight. Each regulatory jurisdiction can include one or more subsectors (water, gas, and power). A geographic region may have several regulatory jurisdictions.

We determine the regulatory advantage assessment by combining:

- Our preliminary regulatory advantage assessment, resulting from our review of the four subfactors that we believe are key for a utility to recover all its costs--on time and in full-- and to earn a return on the capital it deploys; and
- Our view of the utility's business strategy--in particular, its regulatory strategy and its ability to manage the tariff-setting process.

We assess the preliminary regulatory advantage assessment for each regulatory jurisdiction based on:

- Regulatory stability,
- Tariff-setting procedures and design,
- Financial stability, and
- Regulatory independence and insulation.

Regulatory stability: Our view is based on how transparent the key components of the rate-setting process are, and how they are assessed. We also monitor the predictability and consistency of the regulatory framework over time. Greater consistency reduces uncertainty for the utility and its stakeholders.

Tariff-setting procedures and design: Our view is based on whether all operating and capital costs can be recovered in full, and how the rate scheme balances the interests and concerns of all stakeholders. We look for incentives that are achievable, contained, and symmetrical (that is, mostly indexed to overperformance and underperformance).

Financial stability: If costs are recovered in a timely manner, cash flow volatility can be avoided. We see greater flexibility as favorable, because it allows for the recovery of unexpected costs. Financial stability also depends on the framework's ability to attract long-term capital, and the availability of capital support during construction, to alleviate funding and cash flow pressure when heavy investment is needed.

Sector description

Companies that provide an essential or near-essential infrastructure product, commodity, or service that has few or no substitutes and are shielded from competition, while also being subject to comprehensive regulation by a regulatory body or oversight by a public body.

Subsectors	Typical CPGP
Electricity	National industry and utilities
Gas	National industry and utilities
Multi-utilities	National industry and utilities
Water	National industry and utilities

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Our sector-specific liquidity considerations are described in "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers."

Regulatory independence and insulation: We consider this to be stronger where the market framework and energy policies support the long-term financial stability of the utilities, are clearly enshrined in law, and protect the regulator's independence. Where there is limited risk of political intervention, the regulator is more able to efficiently protect the utility's credit profile, even during a stressful event.

Preliminary regulatory advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
From a credit perspective, the utility operates in a regulatory climate that is transparent, predictable, and consistent.	The utility operates in an opaque regulatory climate that lacks transparency, predictability, and consistency.
The utility can fully and timely recover all its fixed and variable operating costs, investments, and capital costs (depreciation and a reasonable return on the asset base).	The utility cannot recover its fixed and variable operating costs, investments, and capital costs (depreciation and a reasonable return on the asset base) fully and/or in a timely fashion.
Any regulatory incentives are limited and mainly symmetrical. The tariff setting includes mechanisms allowing for an adjustment for the timely recovery of volatile or unexpected operating and capital costs.	The utility must make significant capital commitments with no solid legal basis for the full recovery of capital costs.
The tariff setting may include a pass-through mechanism for major expenses--such as commodity costs--or a higher return on new assets, effectively shielding the utility from volume and input cost risks.	Ratemaking practices actively harm credit quality.
There is a record of earning a stable, compensatory rate of return in cash through various economic and political cycles and a projected ability to maintain that record.	There is a 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 utility operates under a regulatory system that is sufficiently insulated from political intervention to protect the utility's credit risk profile, even during stressful periods. There is support for cash flow during construction of large projects, and preapproval of capital investment programs and large projects lowers the risk of subsequent disallowances of capital costs.	The utility is regularly subject to overt political influence.

Natural monopolies: Where a utility has a natural monopoly and its tariffs are controlled, but it is not subject to a detailed regulatory framework or oversight by a regulatory body, we may still assess regulatory advantage, rather than competitive advantage. We would assess it using the same four subfactors, as follows:

- For regulatory stability, we evaluate the stability of the setup, and give more emphasis to the historical record and our expectations regarding future changes.
- For tariff-setting procedures and design, we examine the utility's ability to fully recover operating costs, its investment requirements, and its debt-service obligations.
- For financial stability, we consider tariff flexibility, and whether this is sufficient to counter volume risk or commodity risk. In addition, we consider indirect competition, for example, while Nordic district heating companies operate under a natural monopoly, their tariff flexibility is partly restricted by customers' option to change to a different heating source if tariffs are increased significantly.
- For regulatory independence and insulation, we evaluate the risk that political intervention could change the setup, and in turn, affect the utility's credit profile. Although political intervention tends to be mostly negative, state ownership might positively influence tariff determination.

Because these four subfactors effectively capture the benefit of the close relationship with the state as owner, we do not typically modify our regulatory advantage assessment for natural monopolies based on business strategy.

Business strategy: After determining the preliminary regulatory advantage assessment, we assess the utility's business strategy as positive, neutral, negative, or very negative, and may modify the preliminary regulatory advantage assessment as a result. This factor chiefly addresses the effectiveness of a utility's regulatory risk management in the jurisdictions where it operates. In certain jurisdictions, a utility can create a sustainable competitive advantage through its regulatory strategy and ability to manage the tariff-setting process effectively. Ensuring that revenue changes with costs is a key regulatory risk factor, especially if the risk of political intervention is high. Our assessment of the utility's business strategy is informed by historical performance and business objectives in the context of industry dynamics and the regulatory climate.

We assess the utility's business strategy as positive and modify the preliminary regulatory advantage assessment upward if we consider the business strategy effectively bolsters the utility's regulatory advantage through favorable commission rulings, beyond what is typical for a utility in that jurisdiction. Where business strategy has limited effect relative to peers, our assessment is neutral. Where the business strategy leads to worse regulatory outcomes than peers, such as failing to achieve recovery of typical costs, we may see the implications as negative or very negative, and would apply the downward modifications as shown in the table below.

Regulated utilities: determining the final regulatory advantage assessment

	--Business strategy modifier--			
Preliminary regulatory advantage score	**Positive**	**Neutral**	**Negative**	**Very negative**
Strong	Strong	Strong	Strong/adequate	Adequate
Strong/adequate	Strong	Strong/adequate	Adequate	Adequate/weak
Adequate	Strong/adequate	Adequate	Adequate/weak	Weak
Adequate/weak	Adequate	Adequate/weak	Weak	Weak
Weak	Adequate/weak	Weak	Weak	Weak

Scale, scope, and diversity

We assess scale, scope, and diversity in the regulated utilities sector based on:

- Operational scale; and
- The geographic, economic, and regulatory diversity of a utility's markets and service territories.

These characteristics can contribute to cash flow stability while dampening the effect of economic and market threats. We generally believe a larger service territory--with a diverse customer base and average to above-average economic growth prospects--provides a utility with cushion and flexibility in the recovery of operating costs and ongoing investments (including replacement and growth capital spending). It also lessens the effect of external shocks (such as extreme local weather) because the incremental effect on each customer declines as the scale increases.

We consider that residential and small commercial customers have more stable usage patterns and are less exposed to periodic economic weakness, even after accounting for some weather-driven usage variability. Significant industrial exposure--combined with a local economy that largely depends on one or few cyclical industries--could contribute to the cyclicality of a utility's load and financial performance, magnifying the effect of an economic downturn.

A utility's cash flow generation and stability can benefit from operating in multiple geographic regions that exhibit average to better-than-average levels of wealth, and where employment and growth levels underpin the local economy and support long-term growth. Operating in a single geographic region carries a risk that can be ameliorated if the region is sufficiently large, demonstrates economic diversity, and has at least average demographic characteristics. In addition, if a utility operates in a single large geographic area and has a strong regulatory assessment, the benefit of diversity can be incremental.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Stability of its revenue and profits limits its vulnerability to most combinations of adverse factors, events, or trends.	Revenue and profits are unstable and unsustainable, so that the utility is vulnerable to economic, competitive, or technological threats.
Customer base is large and diverse, with no meaningful customer concentration risk; that is, residential and small and midsize commercial customers typically provide most of the operating income.	Customer base is small and demonstrates customer or industry concentrations, combined with little economic diversity and average to below-average economic prospects.
Exposed to a wider range of service territories than others in the sector.	Exposed to a single service territory.
Operates in multiple regulatory jurisdictions where we assess the final regulatory advantage as adequate or stronger; or operates in a single regulatory jurisdiction where we assess final regulatory advantage as strong or strong/adequate.	Operates in a single regulatory jurisdiction where we assess the final regulatory advantage as adequate or adequate/weak.
No meaningful concentrations by asset or supplier that could weigh on operations; or assets and suppliers can easily be replaced.	Dependence on a single supplier or asset that cannot easily be replaced and that could damage the utility's operations.

Operating efficiency

We assess operating efficiency in the regulated utilities sector based on:

- A utility's compliance with the terms of its operating license--including safety, reliability, and environmental standards;
- Its cost management; and
- The scale, scope, and management of its capital spending.

We analyze management's record in these three key areas, relative to peers, and the resulting cash flow stability. In addition, we consider how management reduces the prospect of penalties for noncompliance; operating costs being greater than allowed; or capital projects running over budget and time--all of which could impair the company's ability to recover its full costs.

The relative importance of the above three factors, particularly cost and capital spending management, is determined by the type of regulation under which the utility operates. Utilities operating under robust cost-plus regimes tend to be more insulated given the high degree of confidence that costs will invariably be passed through to customers. Utilities operating under incentive-based regimes are likely to be more sensitive to achieving regulatory standards. This is particularly so where regulatory regimes involve active consultation between regulator and utility, and market testing, as opposed to just handing down an outcome on a more-arbitrary basis. In some jurisdictions, absolute performance standards are less relevant than how the utility performs against the regulator's performance benchmarks. This performance will drive any penalties or incentive payments and can determine the utility's credibility on operating and asset management plans with its regulator.

Therefore, we believe that well-managed utilities are more likely to maximize the likelihood of cost recovery and full inclusion of capital spending in their asset bases. When regulatory resets are more at the discretion of the utility, effective cost management--including of labor--may allow for more control over the timing and magnitude of rate filings. This would maximize the chances of a constructive outcome--such as full operational and capital cost recovery--while protecting against reputational risks.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Cost structure is better than that of peers and volatility is limited. Generates revenue and profits by minimizing costs, increasing efficiencies, and asset utilization.	Cost structure is worse than that of peers; its cost position and efficiency factors do not support profit sustainability; and volatility is above-average.
Asset profile (including age and technology) is such that we have confidence that it could sustain favorable performance against targets.	The capital spending program is so large and complex that overall operating efficiency is compromised.
Strong safety record.	Poor safety performance
Strong service reliability, with a record of meeting the operating performance requirements of stakeholders (including regulators).	Service reliability has been sporadic or nonexistent, with a track record of not meeting operating performance requirements of stakeholders (including regulators); we do not believe the utility can consistently meet performance targets without additional capital spending.
Where applicable, well-placed to meet current and potential future environmental standards.	Where applicable, the utility is challenged to comply with current environmental standards and is highly vulnerable to more onerous standards.
Management maintains very good control over both fixed and variable costs, in line with regulatory expectations (including labor and working capital management being in line with regulator's allowed collection cycles).	Management typically exceeds operating costs authorized by regulators.
Strong record of projects managed almost invariably within regulatory allowances for timing and budget.	Inconsistent project management skills, as demonstrated by cost overruns and delays, including for maintenance capital spending.

Profitability

A utility with above-average profitability would, relative to its peers, generally earn a rate of return at or above what regulators authorize and has minimal exposure to earnings volatility from affiliated unregulated business activities or market-sensitive regulated operations. Conversely, a utility with below-average profitability would generally earn rates of return well below the authorized return relative to its peers or have significant exposure to earnings volatility from affiliated unregulated business activities or market-sensitive regulated operations.

We typically use the EBITDA margin as key indicator of profitability, unless it is distorted--for example, by pass-through costs like congestion revenue or collection of third-party revenue, or by accelerated asset depreciation that we do not view as sustainable in the long run. In such cases, we would use ROC or ROE to benchmark the company against peers.

For regulated utilities subject to full cost-of-service regulation and return-on-investment requirements, we normally measure profitability using ROE, the ratio of net income available for common stockholders to average common equity. When setting rates, the regulator ultimately bases its decision on an authorized ROE. However, different factors--such as variances in costs and usage--may influence the return a utility is actually able to earn. Consequently, our analysis of profitability for cost-of-service-based utilities centers on the utility's ability to consistently earn the authorized ROE.

Volatility of profitability: We may observe a clear difference between the volatility of actual reported profitability and the volatility of underlying regulatory profitability. In these cases, we could use the regulatory accounts as a proxy to judge earnings stability.

Financial Risk Profile

Accounting characteristics

Important accounting practices for utilities include:

- For integrated electric utilities that meet native load obligations partly by using third-party power contracts, we use our purchased power methodology to adjust measures for such contracts' debt-like obligations.
- Where substantial seasonal working capital requirements--for example, at natural gas distribution utilities--distort leverage measures, we adjust inventory and debt balances by netting the value of inventory against outstanding short-term borrowings. This adjustment informs balance sheet analysis by reducing seasonal debt balances when we are very confident of near-term cost recovery.
- We deconsolidate securitized debt (and associated revenue and expense) that has been accorded specialized recovery provisions.

In the U.S. and certain other regions, utilities employ "regulatory accounting," which permits a rate-regulated company to defer some revenue and expense to match the timing of the recognition of those items in rates, as determined by regulators. A utility subject to regulatory accounting therefore records assets and liabilities that an unregulated corporation--or even regulated utilities in other global regions--cannot record. We do not adjust GAAP earnings or balance-sheet figures to remove the effects of regulatory accounting. While IFRS does not currently provide for any recognition of the effects of rate-setting for financial reporting purposes, our financial analysis focuses on the economics and actual cash flow generation.

Volatility tables

We apply the low volatility benchmark table to regulated utilities where:

- They derive about two-thirds or more of their operating cash flows or profits from regulated operations that are predominantly at the low end of the utility risk spectrum (such as a network or distribution/transmission business unexposed to commodity risk and with very low operating risk);
- Their regulated operations have a regulatory advantage assessment of strong;
- They are expected to maintain their established record of achieving stable credit measures and low funding costs; and
- No other activities contribute significantly to the group's overall risk profile and are viewed as high-risk or volatile.

We apply the medial volatility table to regulated utilities that do not qualify for low volatility and that either:

- Derive about 50% or more of their operating cash flows or profits from regulated activities that have a regulatory advantage assessment of at least adequate and operate in a jurisdiction where the country risk is '4' or better; or
- Derive about one third or more of their consolidated operating cash flows or profits from regulated utility activities that have a regulatory advantage assessment of strong; or a regulatory advantage assessment of strong/adequate and a CICRA of '3' or better.

In both cases, the competitive position for the remaining activities must be assessed as at least satisfactory.

In all other cases, we use the standard volatility benchmark table.

Section 30 | Retail And Restaurants

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the retail and restaurant sector based on:

- Whether the merchandising strategy is clear, focused, and consistent enough to maintain customer loyalty;
- Ability to effectively target a specific customer segment by offering a concept, product, or shopping experience that can be differentiated from competitors;
- Effectiveness of brand reputation and marketing, which may include strong exclusive private-label products; and
- Quality of the product or service, and whether quality and price are appropriately balanced to provide a compelling value proposition.

Merchandising strategy: A retailer's merchandising strategy and brand management has a strong influence on its overall competitive position and underpins our assessment of business risk. Retailers depend on their strategies, whether broad or narrow, to position themselves in a niche or across a category. A successful, strong brand can help create high levels of customer acceptance and loyalty, while supporting consistently healthy sales and allowing for above-average margins by commanding a price premium.

Quality of service/ product and value proposition: For retailers and restaurants, success depends on providing a compelling reason to shop or eat at their outlets. Selecting appealing products and effectively displaying and marketing them attracts higher customer traffic. Meanwhile, introducing new items and moving into new categories and price points can reinvigorate sales and image. That said, if a new merchandising concept is not aligned with customer needs, or is not well-executed, it can alienate a loyal customer base. Restaurants can also gain a competitive advantage based on the range and depth of their menu offering, use of healthy ingredients, food safety and hygiene, and value positioning across customer demographics. In addition, casual dining restaurants may benefit from the quality of the dine-in experience they offer customers.

Product and service differentiation: 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 crowded and highly competitive retail markets. Given the intense competition in almost every product category from big-box players, large national retail chains, or e-commerce giants, 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.

Sector description

Companies that derive more than half of their revenue from selling goods or services directly to the individual consumer. The sector includes auto retailers and grocery wholesalers because the fundamentals of operating these businesses are largely the same as general retailing, with similar unit economics.

Subsectors	Typical CPGP
Apparel retail	Services and product focus
Automotive retail	Services and product focus
Computer and electronics retail	Services and product focus
Department stores	Services and product focus
DIY and home improvement retail	Services and product focus
Grocery	Services and product focus
Home furnishing retail	Services and product focus
Internet retail	Services and product focus
Restaurants	Services and product focus
Specialty stores	Services and product focus

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Discounters and value retailers have widened their reach and offer tough price competition in many countries. One tactic traditional retailers can use to combat the loss to market share to discounters, or to improve price perception among customers, is to expand their range of exclusive, private-label offerings. These products are tailor-made for the retailer, produced in lower stock-keeping units (SKUs), and carry lower marketing costs, enabling retailers to benefit from higher margins while offering customers lower prices. By undercutting the pricing of branded products, successful private-label products typically boost volume growth.

Brand and marketing strategy: Specialty retailers have also developed private brands, which target niche markets and can compete with national brands. In some cases, specialty retailers target specific customer segments by offering a highly differentiated product mix and store experience. We see these developments as representing a competitive advantage because they allow for above-average gross margins while also helping to build customer loyalty.

To maintain the relevance of the store concept and increase sales, retail companies regularly invest in reinvigorating their properties, or build new properties. We view store remodeling programs and upgrades as critical to attract customers and maintain competitiveness. Therefore, our assessment is influenced by the retailer's record of investing in renovation, beyond the normal cost of maintenance, especially in more competitive markets.

Capturing and analyzing customer data enables companies to target and customize their marketing and may also provide important insights into emerging customer behaviors. These, in turn, can lead to an effective merchandising strategy. Effective digital apps and loyalty programs, especially on mobile devices, further increase customer engagement for both retailers and restaurants. A strong digital infrastructure also supports online sales, which enable consumers to prioritize convenience and now contribute a significant percentage of overall retail sales in many markets. By investing in digital operations and the omnichannel model, retailers aim to provide customers with a seamless, customized shopping experience across all channels. Even restaurants can diversify their customer base and increase their competitive advantage by increasing their takeaway and food-to-go options, often in partnership with delivery services. Our assessment of business risk treats such investments as favorable, especially in more-mature sectors, such as department stores. Conversely, we see underinvestment in digital channels as increasingly risky, except in those pockets of the sector where the in-person operation is intrinsic, such as convenience stores, or integral to the retailer's competitive advantage (for example, retailers that offer a treasure hunt experience).

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
Compelling value proposition for its products or services and a consistently successful merchandising strategy.	Products or services offer customers a limited value proposition, and merchandise and assortments differ from customers' expectations or their image of the store.
A strong consumer franchise, with highly differentiated concept or products.	Little differentiation of the concept or product.
Successful positioning of the product or brand.	Brand positioning is weaker than peers.
A digital strategy that captures and employs customer data to customize communication, anticipate trends, and facilitate shopping across channels.	Lacks significant digital operations that enable effective use of customer data; significant technology investment is required to catch up with industry leaders.
Strong store development with attractive locations.	Store development has been weak; stores are outdated or poorly maintained; retailer has exited certain markets following failed expansions.
Penetration of private-label programs is increasing.	Limited focus on developing attractive private-label products.
Auto retailers	
Operates a variety of desirable franchises that offer exposure to diverse brands.	Concentration by franchise and brand exposure.
High revenue contribution from premium/luxury brands.	Low revenue contribution from premium/luxury brands.

Scale, scope, and diversity

We assess scale, scope, and diversity in the retail and restaurant sector based on:

- Diversity of the product, channels, and service range;
- Geographic presence in terms of store base, maturity of the digital operations, and growth prospects within the company's core markets;
- Volumes, size, market share, or niche position in chosen segment; and
- Relative attractiveness of core markets in terms of size, demographics, expected growth, and intensity of competition.

Size and market position: 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 household goods are highly fragmented and even the largest players only account for a very small portion of the overall market.

Although size alone does not ensure profitability and growth, there are economies of scale available in procurement, distribution, advertising, overhead, and information systems. Larger companies can also spread out costs more than their competitors. Market leaders benefit from greater clout with suppliers, which enables them to obtain purchasing discounts.

Product and geographic diversity: Where diversity is not teamed with good profitability, we do not consider that diversity provides a meaningful benefit. Retailers that have good geographic or product diversification can struggle because of poor execution of store expansion or merchandising strategy across different markets. Although we may view significant concentration in one state or region as unfavorable, numerous regional retailers have achieved a strong share of their regional markets, despite limited geographic diversity.

We do not typically view brand diversity as important to our ratings in the retail sector. Although some retailers operate or manage multiple concepts in different subsectors, or target distinct segments through dissimilar product offerings at various price points, we do not consider this necessary for success. Concept diversification is of value where it offers the retailer multiple brands, each of which dominates the niche segments it serves and accounts for a significant portion of operating income. Ideally, each brand should target a distinct customer or product segment, so that the growth of one does not cannibalize the sales of another. The development of smaller brands may consume management's time and resources and weaken the primary brand, causing it to operate in a similar way to a singular concept that is weakly positioned.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
Sizable market share, or a leadership position in the retailer's core markets or industry subsector.	Weak market position in a crowded sector.
Able to use large scale to command strong bargaining power with suppliers.	Lack of scale and limited bargaining power with suppliers.
Scale enables greater absorption of marketing and other operational costs.	Smaller scale limits capacity to invest in strategic, enterprisewide initiatives.
A successful niche position within a subsector; a category leader.	Has lost market share to stronger players in its core markets.
Sufficient geographic diversity to mitigate volatility. For example, a presence in international markets may offset a small domestic market and operating in different regions may offset the effect of differing consumption trends.	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.
Auto retailers	
For large auto retailers, a history of growth through successful acquisitions and sufficient scope and scale to implement technology that would increase the efficiency of their operations.	Limited experience of using acquisitions to bolster growth and insufficient scale and scope to implement technology that would increase the efficiency of their operations.
Restaurants	
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.	Smaller or regional brands lack scale and scope and could have small advertising budgets that hinder their ability to promote products.

Operating efficiency

We assess operating efficiency in the retail and restaurant sector based on:

- Same-store sales or like-for-like sales;
- Gross margin;
- SG&A expenses to sales;
- Sales per square foot;
- Capacity utilization of delivery infrastructure, for e-commerce sales;
- EBITDA margin;
- Inventory turnover;
- Accounts payable days; and
- Cash conversion cycles.

In addition, for auto retailers, we look at the ratio of SG&A to gross profits.

Retail comprises diverse subsectors, and operating metrics for each sector can vary widely. Therefore, we compare retailers against peers in the same subsector that have a similar product mix and cost structure, and operate in similar geographies.

Same-store sales: Consistent same-store sales growth is a positive, in our view. It indicates that the company is using its assets efficiently to make the most of its fixed costs base (primarily, rent and labor costs). Same-store sales may also be referred to as comparable-store sales or like-for-like sales. Stronger same-store sales than peers may indicate the retailer is gaining market share. Conversely, where same-store sales trends lag peers or consistently decline, it may indicate underperformance compared with peers or other retail formats.

Sales density or sales per square foot: To identify retailers with above-average store productivity, we compare their sales density, measured as sales per square meter or per square foot, against the peer average. Where sales density is lower than peers, it may indicate underutilized assets and subpar operating performance. Retail is a very diverse sector and sales density is strongly affected by the product mix and store format. Typically, we benchmark against a peer group that operates in the same subsector and location, and has a similar product mix and cost structure.

Gross margin: To gain insight into how well a retailer is managing its inventory purchases, cost increases, and pricing strategies, we examine the trends in its gross margin compared with peers. Inventory planning is critical for retailers: excess inventory can lead to steep markdowns, which damage profitability. In our view, retailers that maintain their gross margins by passing on cost increases when inflation is high demonstrate a superior market position and customer appeal; we view retailers that underperform their peers, or have highly volatile or declining gross margins, more negatively. For most food and nonfood retailers, gross margin trends depend heavily on global commodity prices and labor costs. The sector also relies on manufacturing in Asia, especially in China; therefore, conditions in the region may affect margins.

EBITDA margin: Although we consider sales metrics useful, we also monitor operating margins and SG&A expenses to sales when assessing operating efficiency. To grow while maintaining profitability, retailers must control their SG&A expenses, which are typically fixed costs. Operating leverage varies from retailer to retailer--to achieve the same increase in profit, some will need a larger increase in same-store sales than others. For example, rent is generally higher in malls than in off-mall formats and out-of-town locations. We assess more favorably those retailers that have a proven ability to use the existing fixed cost base to achieve higher sales growth, and so drive margin expansion.

Working capital management: How the company uses liquidity to invest in inventory ahead of sales is crucial. We consider strength in this area to be particularly important for seasonal retailers, but any retailer will benefit from strong working capital management, which we identify by the following characteristics:

- Higher turnover of its inventory than peers, and fewer inventory markdowns, indicating that the retailer's stock was sufficient in terms of type and quantity to meet customer demand on a timely basis without tying up excess capital;
- Accounts payable are on terms that minimize net investment in inventory (for example, vendors are willing to extend the period before the outstanding obligation must be paid); and
- A shorter cash conversion cycle compared with peers. This demonstrates that a company has a stronger position in the supply chain and can, for example, require suppliers or dealers to hold more of its inventory. It also frees up the company's own capital so that it may be directed to other areas of investment.

Many retailers, particularly speculative-grade issuers, rely on revolving credit facilities to fund seasonal inventory purchases during the months leading up to their critical sales period. High seasonality leaves little room for error during the peak sales quarters. We may assess seasonality risk as negative if a retailer is unable to lower the impact of seasonal risk factors on its business performance (for example, poor summer weather tends to weigh on sales at DIY retailers; our view of seasonality risk reflects whether we expect such a retailer to be able to offset or soften the slump). If a company fails to achieve its sales targets; underperforms against peers; or mismanages inventory investments during seasonal peaks, so that it has to make heavy markdowns, its profitability will take a hit.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
Same-store sales growth is consistent, positive and harnesses the growth in the fixed cost base.	Same-store sales trends lag peers or consistently decline, indicating a loss of market share.
Unit-level productivity above the peer average, such as sales per square foot for retailers or average unit volume for restaurants.	Lower-than-average sales per square foot or average unit volumes, indicating underutilized resources.
Gross margins show consistent, predictable trends, indicating strong working capital management. This is particularly important for seasonal retailers.	Gross margin shows high volatility, indicating poor inventory management in response to market conditions.
Cost structure, measured as SG&A to sales, is competitive and can be adjusted when sales are falling.	SG&A to sales is less competitive because of higher rent or labor expenses.
EBITDA margin is above the peer average and consistent sales growth absorbs fixed expenses.	Profitability is consistently below peers due to subpar sales trends or less-competitive cost structure.
Efficient working capital management, leading to higher turnover of inventory and limited markdown risk.	Weak working capital management, so that investment in inventory is higher, low turnover of inventory, and a higher-than-expected level of markdowns.
Sophisticated operations across channels.	Lack of a comprehensive omnichannel strategy.
Auto retailers	
A high degree of automation enables operations and sales to be integrated, so that, for example, pricing can be improved by giving the	For auto retailers, same-store sales growth is volatile, the cost structure cannot be varied when necessary, and inventory control is inconsistent because of less-sophisticated systems automation.

sales team access to market data, and customer information is gathered to support the sale of parts and servicing.	
Excellent relationships with profitable auto manufacturers, which can influence which operators are awarded franchises and may offer dealers financing to for inventory.	Relationship with auto manufacturers is less entrenched.
Restaurants	
High proportion of units are franchised, reducing exposure to fluctuations in the cost of commodities, packaging, and labor; this offers a more predictable cost structure.	Sales are inconsistent and exposure to cost fluctuations is higher in company-operated restaurants. Limited franchise network and lower opportunities to reduce operating costs.

Financial Risk Profile

Supplementary ratios

We generally include EBITDA to interest coverage, FOCF to debt, and DCF to debt in our analysis. Given the high adjusted debt burden at many retailers and restaurants, we view their ability to meet cash interest and lease payments as critical. In light of retailers' significant lease liabilities, we may consider FOCF after lease payments, in addition to other supplementary ratios. However, for retailers and restaurants whose FOCF generation is constrained by significant capex, we will use CFO to debt as the preferred supplementary ratio.

In some cases, we use adjusted EBITDAR coverage as a supplementary ratio. This enables us to adapt our analysis if we think lease-adjusted EBITDA to interest or other cash flow ratios may overstate the company's ability to cover their fixed costs. Using adjusted EBITDAR to cash interest plus rent can also enables us to compare companies that own most of their properties with companies that lease most of their properties.

Retail and restaurants: financial assessment based on adjusted EBITDAR coverage

	Adjusted EBITDAR to cash interest plus rent (x)
Minimal	>8.0
Modest	>5.0-8.0
Intermediate	>3.0-5.0
Significant	>2.5-3.0
Aggressive	=>2.2-2.5
Highly leveraged	<2.2

Section 31 | Specialty Chemicals

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the specialty chemicals sector based on:

- Market position, and whether we view the company's business strategy as robust and sustainable;
- Record of executing projects successfully and maintaining sufficient capital investment;
- Differentiation by product or service mix; and
- Technical expertise, service capabilities, and ability to invest in R&D.

Market position: By adjusting their strategies in response to market conditions, leading specialty chemical producers are typically able to gain a pricing advantage and sustain revenue and profitability, even in a downturn. Revenue and margin trends are generally fairly similar across peers and reflect the prevailing industry conditions; where they do not, it can indicate an improving or deteriorating competitive advantage.

Differentiation in product and service mix, capex, and R&D: Most specialty chemical companies aim to develop innovative products that can be differentiated from competitor's offerings through their value-added formulations and high-performance attributes. These qualities, combined with strong technical services, can create brand recognition and greater customer loyalty. They may also improve a specialty chemical company's ability to increase prices regularly and to maintain higher and more stable margins. Successful R&D and capital projects in the industry tend to rely on market knowledge and strong product innovation.

Sector description

Companies that derive more than half of their revenue from the production of specialty chemicals, such as industrial gases, coatings, and other advanced materials.

Subsectors	Typical CPGP
Industrial gases	Capital or asset focus
Specialty chemicals	Capital or asset focus

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Leading or near-leading market positions and has demonstrated the success of its strategic positioning by profitably protecting or growing its share of the key industry segments in which it competes.	Market position is weak, or eroding, and strategic positioning is much weaker than those of the leaders in the industry segments in which it competes.
Participates in one or more industry segments that have favorable growth prospects over the medium- to long-term, and where the balance of supply and demand is advantageous.	Participates in one or more industry segments that have unfavorable growth prospects over the medium- to long-term, and where there is more competition.
Strong negotiating position with customers, including recurring customers, achieved through a high degree of product differentiation; scientific or technical expertise; or product specification.	Weak negotiating position with customers, including recurring customers because products lack differentiation, or the company has limited technical expertise.
Strong R&D and technical capabilities that enable the company to develop new product formulations; bring them to market; and identify new applications in response to market demand.	Limited or no R&D or technology capabilities and constrained technical abilities prevents the company from developing new product formulations or applications.

Scale, scope, and diversity

We assess scale, scope, and diversity in the specialty chemicals sector based on:

- Diversity of product mix, raw material inputs, and end markets;
- Size of the revenue base, compared with the size of the target markets;
- Geographic diversity by sales, profits, and manufacturing; and
- Supplier and customer concentrations.

The stronger our assessment of a specialty chemical company's scale, scope, and diversification, the lower we would expect its exposure to event risk and fluctuations in the market to be. This should lead to more stable earnings and cash flow. We consider customer concentration to be high where the largest customer accounts for 10% or more of sales or operating profit. Many rated issuers in the specialty chemicals industry are relatively small, niche players that have limited product and geographic diversity and are heavily dependent on a small number of customers or end markets. As a result, they tend to be highly sensitive to small changes in demand, any loss of market share, or adverse market conditions.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Revenue base or target markets are larger than those of other industry players.	Revenue base or target markets are smaller than those of other industry players.
Portfolio is well diversified and products are not all subject to the same external factors--for example, they use different raw materials, and are subject to different regulations and economic cycles.	Portfolio has a narrow focus because the company participates in a very small number of end markets, regions, or product categories, and these have limited growth prospects or are closely correlated to one another.
Products are aimed at a variety of end markets that are not closely correlated and have favorable supply and demand fundamentals, with cyclical and noncyclical demand well balanced.	Reliance on a single raw material or single supplier.
The revenue base and production facilities are both spread across developed and developing markets in different geographic regions or countries.	Production is concentrated at a single location or a very small number of facilities.
There is little reliance on specific suppliers and no significant dependency on a single raw material, and customers are well-diversified.	Customer or supplier concentration is high, and this is not mitigated by the characteristics of the customer or supplier base.

Operating efficiency

We assess operating efficiency in the specialty chemicals sector based on:

- Cost position relative to industry peers,
- Flexibility of the cost structure in absorbing volatility of demand or input costs,
- Record of passing through raw material costs, and
- Flexibility of production.

Cost position and ability to pass through raw material costs: The cost of raw materials and energy often accounts for more than 50% of the cost of goods sold in the specialty chemical industry. Therefore, we expect to see more-stable margins and better operating efficiency at specialty chemical companies that can pass through increases in these costs. The main measure we use to compare a specialty chemical company's cost position with that of its peers is its EBITDA margin profile. We supplement our analysis by using a variety of ratios that highlight different aspects of cost efficiency and capital intensity, such as gross margin, SG&A expenses to sales, margin over raw material costs, time lag in passing through raw material costs, percentage of contracts that include raw material pass-through provisions, and capex to sales.

Flexibility of the cost structure and production: In some cases, specialty chemical companies can change the amount or type of raw material they use as production inputs, either selecting an entirely different material or a different grade of the same material. We evaluate flexibility of production in the industry on a company's ability to reduce its raw material input requirements, shift raw material inputs, or optimize production across facilities. Greater flexibility may bolster profitability and improve the company's competitive position, relative to peers.

We also look for ongoing and measurable improvements through lean manufacturing practices, and a history of optimizing variable costs and reducing labor and sourcing costs, as well as strong working capital management and rationalization of capacity, where appropriate.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Profitability is consistently higher than peers, taking into account any differences in sales mix that would affect profit margins.	Profitability is consistently lower than peers, taking into account any differences in sales mix that would affect profit margins.
A record of continuous improvement to the cost structure.	Cost-reduction initiatives have been inconsistent, so that labor and sourcing costs exceed those of peers or there is excess capacity.
The company has demonstrated its ability to pass through increases in the cost of raw materials; for example, most contracts include pass-through provisions.	The company has limited ability to pass through increases in the cost of raw materials and has few protections built into its contracts.
Global production can be optimized by altering the balance of raw material inputs or shifting production to more favorable facilities.	Limited or lack of production flexibility.

Financial Risk Profile

Supplementary ratios

FOCF to debt is our preferred supplementary ratio for specialty chemicals companies where the core ratios indicate a cash flow/leverage assessment of intermediate or stronger, because working capital and capex cycles can significantly shape cash flow generation patterns. Alternatively, we might use CFO to debt for companies that have a high working capital-to-sales ratio of more than 25% or DCF to debt for companies that distribute more than 50% of FOCF as dividends.

Section 32 | Technology Hardware And Semiconductors

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the technology hardware and semiconductors sector based on:

- The extent of a company's intellectual property (IP);
- Its technology positioning, operating performance, and distribution capabilities;
- Any manufacturing or process technology advantages;
- Relationships with customers and ability to impose price increases; and
- The company's reputation and brand recognition.

Manufacturers of technology hardware and semiconductors typically require strong R&D capabilities to maintain a product advantage over competitors. Product cycles can be short, exacerbating the issue. Those companies that have the ability and capacity to collaborate with customers on development have the opportunity to gain a considerable advantage, as switching costs in such cases will be far higher. However, many subsectors within the industry are more commoditized, making it easy for customers to switch to a competitor.

While a strong brand can enable companies to command a price premium, especially in consumer-oriented segments, most companies are exposed to continuous price erosion as new products are launched. In such cases, we look for evidence that they can maintain margins through process efficiencies or by outsourcing manufacturing. We also consider the size and growth prospects of the markets in which a company operates.

Sector description

Companies that derive more than half of their revenue from the manufacture or sale of technology hardware and semiconductors.

Subsectors	Typical CPGP
Communications equipment	Capital or asset focus
Computer hardware	Capital or asset focus
Computer storage and peripherals	Capital or asset focus
Consumer electronics	Capital or asset focus
Electronic components	Capital or asset focus
Electronic equipment and instruments	Capital or asset focus
Electronic manufacturing services	Capital or asset focus
Office electronics	Capital or asset focus
Semiconductor equipment	Capital or asset focus
Semiconductors	Capital or asset focus
Technology distributors	Capital or asset focus
Technology hardware that has unique capabilities, differentiated products, or identifiable brands; or strong competitive standings in consumer-oriented segments, and that have low capital requirements or outsourced manufacturing.	Services and product focus

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Product advantage derived from extensive IP that helps to differentiate the product.	IP is insufficient to differentiate products from competitors', or competitors can replicate the features.
Strong position in emerging technologies that have strong growth prospects, supported by effective investment in R&D.	Weak position in emerging technologies that have strong growth prospects, or mainly present in markets that have limited growth prospects.
Good position in a relatively concentrated or less competitive market.	Weak position in a relatively fragmented or competitive market.
Operating performance consistently ahead of peers because of product differentiation or the ability to command a price premium.	Poor record of operating performance relative to peers.
Multiyear product cycles.	Short product cycles in segments where technology changes quickly.
Manufacturing technology or design processes that offer sustainable advantages.	Manufacturing technology is average or lags that of competitors, leading to inefficiencies.
Strong bargaining power when negotiating with key product manufacturers and suppliers.	Limited bargaining power when negotiating with key product manufacturers and suppliers.
Robust distribution network.	Limited distribution capabilities.
High level of brand recognition that enables the company to impose price increases.	Lack of brand recognition limits pricing power.
Long-term customer relationships, including those where parties cooperate on R&D.	High customer turnover.
Strong distribution capabilities.	Limited distribution capabilities.

Scale, scope, and diversity

We assess scale, scope, and diversity in the technology hardware and semiconductors sector based on:

- Operating metrics such as revenue, EBITDA, and free cash flow, relative to peers;
- Market share, and how it is changing;
- Supplier and customer concentration; and
- Diversity in terms of end markets, products, and geographies.

The technology hardware and semiconductors industry is characterized by rapid technological changes, which can offer smaller, more innovative companies an opening. That said, larger, more-established companies also tend to have the resources to invest in R&D, as well as in sales, marketing, and distribution.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Generates a significant proportion of the total market's revenue, EBITDA, or cash flow.	Generates a much small proportion of the total market's revenue, EBITDA, or cash flow.
Customer base is diverse, or revenue is well spread across multiple large contracts. No customer or contract contributes more than 10% of revenue and the top 10 customers or contracts contribute less than half of revenue.	Concentrated customer or contract base (that is, one or more customers or contracts account for more than 10% of revenue each, or the top 10 customers or contracts represent more than half of revenue).
Manufacturing is spread across multiple locations and facilities and there is limited reliance on single suppliers.	The supplier base is concentrated and the company has limited manufacturing operations, making it more prone to delays if the supply chain gets disrupted or a manufacturing facility has to close.
Offers a wide variety of products and services.	Offers products that have a narrow focus, or participates in intensely competitive or closely correlated markets.
A broad array of end markets, none of which contributes more than one-third of total revenue.	Focused on a particular end market or geography.

Operating efficiency

We assess operating efficiency in the technology hardware and semiconductors sector based on:

- Ability to maintain profitability during downturns;
- Capacity utilization compared to peers; and
- Capital intensity.

Ability to maintain profitability during downturns: We measure profitability using metrics such as gross margin, EBITDA margin, and ROC. Manufacturing technology hardware and semiconductors requires a high degree of flexibility, given that volumes often fluctuate. The more flexible a company's cost structure, the lower the pressure on EBITDA and cash flow during industry downturns. We would expect a semiconductor or technology hardware company that had stronger operating efficiency to generate larger profit margins than its peers, even in a downturn. We also track SG&A expenses as a percentage of revenue to identify how well the company controls its overhead costs.

Capacity utilization and capital intensity: Companies in this sector can gain an advantage by utilizing their manufacturing capacity better than their peers across the industry cycle. Flexible manufacturing capabilities allow for efficient and timely product transitions in existing plants. This is particularly important for semiconductor companies. If the data is available, we compare capacity utilization against peers; monitor the percentage of production capacity that is outsourced; and track how gross margins vary, relative to capacity utilization, during the industry cycle.

To evaluate operating efficiency for technology distributors, we also consider the relative speed of fixed asset turnover (net sales to average fixed assets); inventory turns (COGS to average inventory); the length of cash-conversion cycles (days sales outstanding); the return on invested capital; the stability of operating margins; and the length of free cash flow cycles. Similarly, we compare additional measures against those of peers when assessing electronic manufacturing services companies. These include the proportion of the product mix that comprises low-margin, high-volume items (rather than higher-margin, specialty items); asset turnover; and the degree of concentration in more-cyclical end markets. In addition, to evaluate the effectiveness of the company's R&D spending, we compare its R&D-to-sales ratio and the size of its R&D budget against peers.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Economies of scale and other efficiencies enable profitability to consistently exceed the peer average.	Profitability is consistently lower than or more volatile than that of peers.
Company is able to maintain an effective team while controlling overhead costs.	Operating margins are only positive when industry conditions are favorable.
Investment in R&D is more effective than that of peers (where the peer group has a similar market positions and product set).	High SG&A expenses and inefficient R&D investment frequently leads to business restructuring.
Few disruptions or bottlenecks in the supply chain, even after disruptive events, indicating that these are flexible and effective.	Inflexible cost structures due to rigid labor laws or high fixed costs.
Capital intensity is low, with a high level of variable costs--this implies a cost structure that is relatively flexible.	Capital intensity is high and this is combined with high fixed costs and limited outsourcing of production.
Manufacturing capabilities have demonstrated sufficient flexibility to boost capacity utilization above the industry average.	Inflexible or vulnerable supply chains have historically caused bottlenecks; a build-up or shortfall in inventory; or quality issues.
Company incurs restructuring and other one-off costs relatively infrequently.	Manufacturing capacity is underutilized or inefficient and cannot easily be adjusted when necessary.
Effective working capital management that limits the need for cash.	Inefficient working capital management frequently creates cash flow volatility.

Profitability

Some conglomerates or large groups operate in several subsectors within the technology hardware and semiconductors sector. In these cases, if the company discloses the EBITDA margin for each subsector, or it can be estimated, we assess the level of profitability of each subsector. We then assess the overall level of profitability on a weighted-average basis. If EBITDA margins are not available for each subsector, or if a company's business model does not allow for this type of analysis, we would emphasize ROC in our assessment of the level of profitability.

Financial Risk Profile

Supplementary ratios

If the preliminary cash flow/leverage assessment is intermediate or stronger, we typically refine our analysis using FOCF to debt, to capture the impact of working capital and capex requirements. If the preliminary cash flow/leverage assessment is significant or weaker, we typically refine our analysis using EBITDA to interest, which gives us more insight into the company's ability to service its debt, or FOCF to debt (for an earlier indication of any change in financial risk). In our view, a semiconductor and technology hardware manufacturer is most likely to default during or after a downturn because of a failure to cover a cash interest payment or redeem debt at maturity.

Volatility adjustment

We typically assess semiconductor equipment companies as highly volatile, and companies in all other subsectors as volatile, unless cash flow volatility at the company supports a stronger assessment. For example, within the semiconductors subsector, we often assess memory chipmakers as highly volatile but analog chipmakers as stable. Historically, we have classified some consumer electronics makers, office electronics producers, and distributors as stable. We may also regard some communications equipment makers as stable, depending on the proportion of revenue they generate from software, maintenance, and managed or professional services. Our cash flow volatility adjustments reflect a specific point in time and may change because they incorporate the business cycle and a company's credit metrics relative to key thresholds.

Section 33 | Technology Software And Services

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the technology software and services sector based on:

- The extent of a company's intellectual property (IP);
- The level of competition in the industry;
- The company's reputation and brand recognition;
- The proportion of recurring revenue;
- Record on customer retention and the switching costs customers would incur; and
- The company's operating performance record.

The type of revenue that a technology software and services company predominately generates--recurring or not--and the longevity of its customer relationships both have a strong bearing on its operating performance. Companies typically use license sales agreements or software-as-a-service contracts to generate recurring revenue. We also evaluate the level of competition and any barriers that may protect companies in the markets they participate in. For example, some software is embedded within a customer's operations, making switching far riskier and more difficult for customers.

Customers expect continuous improvements to the software and services offered, making strong investments in R&D vital to customer retention. We measure the strength of a company's reputation and its brand recognition by the tenure and performance of its contracts with clients, and the nature of these relationships. Well-differentiated products can command a price premium, especially if switching costs are high. Developing new or related products and services offers the opportunity to cross-sell and increases product and service loyalty.

Sector description

Companies that derive more than half of their revenue from providing information technology software and services.

Subsectors	Typical CPGP
Application software	Services and product focus
Capital-intensive IT outsourcing	Capital or asset focus
Consumer software	Services and product focus
Data processing and outsourced services	Services and product focus
Internet software and services	Services and product focus
IT consulting and other services	Services and product focus
Systems software	Services and product focus

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Strong operating performance supported by extensive existing IP and robust R&D investments.	Limited technological differentiation relative to peers.
Good position in a relatively concentrated or less competitive market.	Weak position in a relatively fragmented or competitive market; competes with multiple large players that have strong financial resources or with rising niche players that have strong product or service offerings.
Recurring revenue exceeds 70% of total revenue.	Recurring revenue comprises less than 50% of total revenue.
Operating performance consistently ahead of peers because of product differentiation or the ability to command a price premium.	Poor record of operating performance relative to peers.
Strong reputation or brand recognition.	Limited brand recognition.
Customer retention above 90% because switching is expensive or carries high risks (for example, because solutions are embedded in customer operations).	Weak customer retention and low switching costs, so that customers are relatively open to considering use of competitors' products.
Revenue growth prospects are supported by high proportion of long-term contractual client arrangements, or a high likelihood of favorable terms when contracts are renewed.	Few long-term contracts or long-lasting customer relationships.

Scale, scope, and diversity

We assess scale, scope, and diversity in the technology software and services sector based on:

- Operating metrics such as revenue, EBITDA, and free cash flow, relative to peers;
- Market share and how it is changing;
- Supplier and customer concentration; and
- Diversity in terms of end markets, products, and geographies.

The different software and technology services markets differ in size, with some dominated by a single player, and others being much more fragmented. Although scale offers some degree of competitive advantage, rapid technological changes can enable rising players to seize market share. To evaluate the evolution of market share, we measure scale by a range of different operating metrics. There is some scope for larger, more-established companies to benefit from efficiencies of scale or because they have the resources to invest more in R&D.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Leading player in more fragmented markets, with significant gap ahead of second and third players; or leading player within consolidated markets. Large scale, so that it generates a significant proportion of the total market by revenue, EBITDA, or cash flow.	No leading market positions (or only in small, niche markets) or many competitors have a similar market share.
Addressable end markets are large.	Addressable end markets are small and the company serves only a few verticals and has limited geographic diversity.
Customer base is geographically diverse and the company is not reliant on any of its customers (that is, the top customer contributes less than 10% of revenue and the top 10 customers contribute less than half of revenue).	Customer base is concentrated, so that one or more customers account for more than 10% of revenue each or the top 10 customers represent more than half of revenue.
Offers a broad array of products and services and serves multiple end markets, none of which exceed more than one-third of total revenue.	Solutions have a narrow focus in intensely competitive or cyclical markets.

Operating efficiency

We assess operating efficiency in the technology software and services sector based on:

- Economies of scale;
- Gross margin and EBITDA margin;
- The percentage of revenue spent on SG&A expenses and R&D;
- ROC;
- Flexibility of the cost structure; and
- Frequency of restructuring.

The more flexible a company's cost structure, the more likely it is to be able to limit margin deterioration in a downcycle. Working capital and capex requirements are relatively low in technology software and services--where we assess operating efficiency as strong, capital investment may represent just 3%-6% of revenue. We compare the R&D-to-sales ratio, and the size of the R&D budget, to evaluate whether a company is investing more in developing its product portfolio than its close peers; the success of the resulting products can be seen in a company's customer retention and record of revenue growth.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Profitability is above the industry average because of economies of scale and other efficiencies.	Profitability is consistently lower than or more volatile than that of peers.
Company is able to maintain an effective team while controlling overhead costs (based on SG&A as a percentage of revenue).	Spending on SG&A exceeds that of peers and this frequently leads to organizational restructuring.
Lower R&D-to-sales ratio compared with peers that have a similar market position and product set.	Ineffective investment in R&D has weakened the positioning of the product set.
The cost structure is relatively flexible.	Inflexible cost structures resulting from rigid labor laws, strong unions, problems with contracted service delivery, or high contract churn.
Effective working capital management that limits cash flow volatility.	Inefficient working capital management frequently creates cash flow volatility.
Capital intensity is low, such that capex represents just 3%-6% of revenue.	Capital intensity is high and this is combined with high fixed costs and limited outsourcing in production.
Operating margins are consistently positive.	Operating margins are only positive when industry conditions are favorable.
Strong order and backlog growth relative to peers through the cycle.	Limited growth or decline of orders and backlog through a cycle.

Financial Risk Profile

Supplementary ratios

If the preliminary cash flow/leverage assessment is intermediate or stronger, we typically refine our analysis using FOCF to debt or CFO to debt, which captures the lower working capital or capex requirements. If the preliminary cash flow/leverage assessment is significant or weaker, we typically refine our analysis using FOCF to debt or EBITDA to interest, which gives us more insight into the company's ability to service its debt.

Volatility adjustment

Commercial IT services, transaction processors, and enterprise and consumer software companies can easily differentiate their products from those of competitors, which increases the cost of migrating to another provider. As a result, we typically consider a high proportion of their revenue to be recurring and assess cash flow volatility as stable.

Some companies have low recurring revenue; for example, we may classify as volatile a software company that chiefly sells perpetual licenses, rather than subscriptions. A perpetual license sale is a one-time sale and changes in IT spending can affect timing of perpetual license sales. In addition, a decline in perpetual license sales can have a disproportionate effect on profit because of their high margins--gross margins often exceed 90%.

Section 34 | Telecommunications

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the telecommunications sector based on:

- Market position and competitive environment;
- Regulatory environment;
- Installed technology; and
- Customer quality.

Market position and competitive environment: In our view, market position for telecoms companies depends not only on market share but also on barriers to entry and the number of competitors. For example, we would expect a successful incumbent wireless telephone company to have preserved its dominant share of voice traffic in its market. By contrast, we would judge a wireless carrier competing against several other carriers as successful if it has increased its market share.

Regulatory environment: Regulatory stances vary widely from jurisdiction to jurisdiction. Pro-competition regulators often require the incumbent firm to lease its network to other operators at below-cost prices; in essence, to subsidize its competition. Other regulators protect incumbent firms by erecting substantial barriers that effectively prevent, or at least discourage, new entrants to their market.

Technology: The rapid pace of technological improvement in the sector has enabled industry providers to deliver more services, at higher speeds, and at a declining cost. As technology continues to advance, the state of a telecom company's installed technology can easily become dated. We consider the state of the company's technology, relative to its industry segment and competitors in its market:

- For a wireless provider, we would assess the availability of the latest technology, such as fixed wireless access offerings and 4G and 5G wireless standards;
- For fixed-line broadband, including cable companies, we consider the deployment of digital technology and the extent of high-speed connectivity offerings, such as fiber to the premises.

A telecom company that has superior technology and can support more services at higher quality levels can demand premium pricing while attracting more customers and reducing churn. A company with a high level of installed technology can also invest in expansion and marketing initiatives to increase revenue. In contrast, a company with lagging technology is at a clear competitive disadvantage because it cannot offer a full array of market-competitive services. To remain a viable competitor, it will need to divert cash to making basic network upgrades, instead of investing in cutting-edge technology.

Sector description

Companies that derive more than half of their revenue by providing data connectivity services, which include voice and video transmission; or by leasing network, physical infrastructure, or satellite capacity to other companies, such as wireless providers, broadcasters, or data center operators.

Subsectors	Typical CPGP
Cable and satellite	Services and product focus
Alternative carriers	Services and product focus
Integrated telecommunication services	Services and product focus
Tower companies	Capital or asset focus
Data center operators	Capital or asset focus
Fiberoptic carriers	Capital or asset focus
Wireless service providers	Services and product focus
Monopolistic network, in a supportive regulatory framework	National industry and utilities

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Customer quality: A favorable customer mix, in terms of contractual relationships and premium, creditworthy customers, can provide a competitive advantage. For providers of services that have limited differentiation and low switching costs, such as wireless services and wholesale voice and transport, an enforceable customer contract bolsters revenue stability, reduces marketing costs, and supports strategic planning by enhancing revenue visibility. In contrast, where a significant proportion of revenue is not under contract or the average remaining contract length is shorter than peers', providers of such services are at a competitive disadvantage.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Limited competition within a supportive, predictable regulatory framework that provides meaningful barriers to entry.	High level of competition within a regulatory regime that lacks stability and establishes few barriers to entry.
Successful market position, demonstrated by a leading or substantial (more than one-third) market share.	Lagging market penetration, or competition with far larger and better-capitalized operators, including global companies.
Favorable brand recognition and reputation; factors that support premium pricing; superior customer growth or retention; and lower marketing costs.	Unfavorable reputation that results in below-market pricing and inferior customer retention, leading to elevated marketing costs.
Participation in industry segments that have favorable longer-term growth prospects; or delivering services with demand characteristics more like those of utilities.	Reliance on commoditized or mature product offerings in structural decline.
Government policies that stimulate demand, such as durable subsidies for certain residential telecommunication services.	Government policies mandate the inclusion of influential domestic investors, which impairs operational flexibility and efficiency.
State of the art technology and, for wireless carriers, adequate spectrum for the predicted demand.	Limited ability to maintain adequate customer service levels and meet future demand due to lagging technology or lack of operational resources (for example, wireless spectrum or satellite orbital slots).
For digital infrastructure providers such as data centers, sites near to enterprise customers and carrier interconnection points; for tower companies, sites in capacity-constrained urban areas that have low overbuild risk.	Unfavorable site locations.
Predictable revenue and factors that reduce customer churn, such as contractual relationships or material switching costs for customers.	Revenue visibility is hampered by limited contractual relationships with customers.

Scale, scope, and diversity

We assess scale, scope, and diversity in the telecommunications sector based on:

- The size of the operator's service area and customer base, network, or other segment-relevant measures;
- Geographic diversity; and
- Product diversity, including the ability to offer a competitive suite of services.

The scale, scope, and diversity of a telecom company depends on its business stability and ability to realize economies of scale.

Service area and customer base: We examine how an operator's customer base and network assets affect its ability to realize economies of scale. For example, wireless and wireline service providers with larger service areas can carry more of their traffic "on-network," rather than paying for third-party carriage. This improves the utilization of and margins on network and spectrum assets with high operating leverage.

Scale enables wireless operators to offer customers broader service coverage without roaming, which is an added competitive advantage. Thus, regional wireless providers may be at a disadvantage as they offer nationwide service plans, but then pay substantial amounts to other wireless providers in order to service customers that roam off their own limited network.

Scale may confer bargaining power when negotiating for network and consumer premise equipment (CPE). For fixed-line players like cable or direct-to-home (DTH) operators, it can help them negotiate favorable terms with wireless mobile virtual network operators (MVNOs) or programming content providers.

Geographic diversity: In our view, participating in a variety of attractive and geographically diverse markets improves financial resilience should there be a regional market downturn. It also reduces the impact of exposure to aggressive competitors or specific local regulators. That said, diversification benefits may be offset by participation in less credit-supportive markets and may increase a company's exposure to country, regulatory, or competitive risks.

We assess diversity as weaker where significant proportion of a company' revenue come from weaker customers. Customer concentration is also a particular risk for companies that rely on a single major customer or tenant, with no visibility on replacement; this may affect satellite operators and some telecom infrastructure providers.

Product diversity: In reviewing product diversity, we consider a telecom company's ability to offer a competitive suite of products such as advanced fixed line and wireless connectivity, video, and other value-added services. An array of attractive bundled package offerings increases revenue per customer and improves customer retention. The telecom industry frequently sees customers substitute products and services for newer alternatives, as well as changes in customer demand; this makes product diversity particularly valuable. For example, many residential customers no longer pay for a physical telephone line because wireless services offer a suitable substitute for voice calls. The loss of these customers mostly affected companies that only offered wired telephone services--for integrated telecom companies, the impact was offset by growth in other segments, such as wireless, enterprise, and data centers.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Sufficient scale to optimize operating leverage or achieve economies of scale, given the significant fixed-cost component of network-intensive segments such as wireless and wireline, cable, long-haul transport, towers, and satellite-based services.	A small customer base across which to spread fixed costs, or an inability to achieve economies of scale in procurement negotiations.
A service area sufficiently large to enable most traffic (terrestrial or wireless) to be originated, transported, and terminated on-network, with minimal need to pay for third-party carriage.	Limited service area or network coverage, forcing the provider to pay third parties to originate, transport, and terminate a material proportion of traffic.
Operations in several attractive and geographically and economically diverse markets.	Market concentration, particularly in a less-attractive market or jurisdiction where regulation and public policy are unstable, leaves an operator exposed to volatility.
Diversification across wired and wireless broadband product lines, which enables telecommunications providers to offer the attractive, integrated service bundles that improve customer satisfaction and retention and minimize the risk of product substitution.	Limited product diversification exposes the company to changing customer preferences. Customer churn is likely to increase where a provider cannot offer a service package that bundles and integrates wireline and wireless services, especially in converged commercial markets.

Operating efficiency

We assess operating efficiency in the telecommunications sector based on:

- The industry segment and related capacity utilization measures;
- The maturity of the market and cost management practices; and
- Customer service and quality metrics.

The operating efficiency of a telecom company depends on its EBITDA margin, adjusted according to its industry subsector and the nature and maturity of its markets. For example, we may view a 60% EBITDA margin as consistent with adequate operating efficiency for a wireless tower operator, but a 35% EBITDA margin as consistent with our view of strong operating efficiency for a wireless services provider.

Industry segment: The key drivers for EBITDA margin vary across the different segments in the telecom industry, for example:

- For tower leasing, it is generally the number of tenants per tower;
- For fixed-satellite service (FSS) and mobile soft switch (MSS), the number of customers combined with revenue per customer; and
- For data centers, we consider the percentage of total square footage that has been leased.

Market maturity: The stage of maturity of the market in which a company operates is also an important consideration. EBITDA margins at startups are depressed by the initial marketing costs and customer subsidies, combined with the impact of having fewer customers over which to spread fixed costs. Conversely, growth potential in absolute terms is limited in a mature market but the EBITDA margin is likely to be at its peak because per unit expenses such as marketing are lower and spread over a larger installed base.

Customer service and quality metrics: The company's performance in terms of customer churn has a knock-on effect on its operating efficiency. We therefore consider customer satisfaction and service metrics, as well as other quality metrics. These include customer call wait times, percentage of problems resolved on the first customer call and, for wireless operators, network quality measures.

We also look at asset utilization, capex as a percentage of revenue, and the segment-specific measurements below. We consider these factors in relation to peers, specifically, those that have a similar sale mix and operate in markets of similar maturity.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
High revenue per customer or asset unit that results in an EBITDA margin consistently above peers.	Low per unit revenue that results in an EBITDA margin consistently lower than peers.
Capex as a percentage of revenue is lower than peers and ROC is higher than peers.	Capex as a percentage of revenue is higher than peers and ROC is low.
Superior customer satisfaction metrics that result in low customer churn	High customer churn that increases marketing costs.
Management actively works to anticipate which business segments show declining potential and mitigate this by expanding into areas with higher potential growth.	Management has a record of failing to anticipate and effectively mitigate the impact of declining business segments.
Residential wireline voice providers	
A record of reducing operating expenses to reflect weak secular trends.	A record of failing to actively lower operating costs.
Wireless and fixed broadband providers	
Superior marketing performance leading to high ARPU and low SAC.	Subpar marketing or operational performance, resulting in inferior customer satisfaction, elevated churn with a low ARPU and high SAC.
Wireless operators	
Large service areas that can carry most traffic on-network and minimize payments to other carriers for off-network customer roaming.	Significant payments to other carriers to provide service when customers roam (particularly for regional operators that have a limited service area).
Fixed-satellite service	
High utilization of satellite transponder capacity.	Low utilization of satellite transponder capacity.
Wireless and broadcast tower operators	
Above-average number of tenants or customers per tower and high lease renewal rates.	Lower-than-average tenancy rates, which weakens margins. This risk is magnified for towers that are built on spec.
Data center operators	
A high level of interconnection within its customer base; above-average utilization of total space or total power output; above-average yield per square foot; a high lease renewal rate; and a power usage efficiency (PUE) ratio, indicating strong energy efficiency;	Low interconnectivity and a reliance on managed service; low utilization of total space or power output, which depresses the yield per square foot; shorter-than-average lease terms; subpar lease renewal rates; and a weak PUE ratio.

ARPU--Average revenue per user. SAC--Subscriber acquisition costs.

Financial Risk Profile

Supplementary ratios

In recognition of the capital intensity of most telecom companies, we primarily use FOCF to debt as a supplementary ratio. DCF to debt is also useful where companies make high dividend payouts.

Section 35 | Transportation Cyclical

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Business Risk Profile

Competitive advantage

Cyclical transportation companies depend on the revenue potential of the segments and regions they operate in to gain a competitive advantage. Sizable shares of strong markets can give them a pricing advantage and bolster sales performance when economic conditions weaken. The factors we consider when evaluating competitive advantage vary by subsector.

Airlines

For airlines, we consider:

- Characteristics of the route network, such as access to major markets; national and global coverage, including alliances; whether hubs are well-positioned to serve connecting traffic flows; and the degree of competition from other airlines' hubs.
- The attractiveness of the markets served, in terms of growth prospects; proportion of premium traffic, which is usually more profitable; degree of competition within the market; and the effect of regulation on revenue and potential profit.
- The strength of the airline's position within the markets it serves, based on share of local traffic at the major airports being served; share of traffic on the airline's own largest routes; barriers to entry in core markets and airports served.
- Service standards and reputation, which are particularly important on intercontinental routes and for attracting business travelers and other passengers willing to pay a premium price.

Sector description

Companies that derive more than half of their revenue from operating airlines (including heavy air freight), shipping companies, trucking companies, or certain other types of transportation firms, such as bus companies.

Subsectors	Typical CPGP
Airlines	Capital or asset focus
Shipping	Capital or asset focus
Trucking	Capital or asset focus
Buses	Services and product focus

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Our sector-specific liquidity considerations are described in "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers."

Shipping

For shipping companies, we consider:

- The attractiveness of the shipping industry segment in which the company participates, compared with other shipping segments. For example, we consider the dry bulk sector to be far more volatile and less predictable than the liquefied natural gas and liquefied petroleum gas tanker segments because companies in the gas shipping segments operate under very-long-term, take-or-pay contracts, with counterparties that are typically reputable. Thus, amendments or defaults under the charter agreements are rare.
- Size of fleet, based on the number of owned and chartered-in vessels.
- Overall attractiveness of the fleet, as measured by age, fuel efficiency, and technical characteristics of vessels.
- The size of the route network and its appeal to global customers. This will depend on the trade lanes in which the shipping companies operate and we generally view international operators with a global route network more favorably than regional players. That said, most international shipping segments are highly fragmented, with the largest operators typically having a 2%-4% share of the market. An exception is for container liners and shipping companies that operate domestically within the boundaries of just one country and may be protected by cabotage laws (that exclude outside competitors).

Trucking

For trucking companies, we consider:

- The degree of fragmentation, intensity of competition, and stability of volumes in the trucking segments in which the company operates. For example, gasoline volumes are relatively stable compared with construction material volumes.
- The attractiveness of the services provided (or the product mix) in terms of growth prospects; portion of contractual revenue versus spot revenue; and effect of supply and demand on revenue and margin potential.
- Position or geographic presence in key markets. For example, we may evaluate the depth of service or level of penetration in a specific lane or corridor between cities, or assess market share by tonnage in key lanes.
- Fleet size, because customers are increasingly choosing to rationalize their truck transportation arrangements to focus on fewer key suppliers.
- Service standards and reputation, which are particularly important for contractual business, for intermodal moves, and the transportation of hazardous materials such as chemicals and fuel.
- New products and complementary offerings, which are often driven by technological capabilities. These can be used to deepen customer relationships, by enabling the company to meet specific customer needs. They may also result in lower costs, improved service, and increased efficiency, thus raising switching barriers.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
A leading or very substantial market share in the markets where the company operates.	Market share is modest or lags that of peers.
Participation in markets whose size, growth prospects, and competitive dynamics offer an opportunity to generate above-average revenue; or participation in markets that have much more stable demand and pricing than is usual for the cyclical transportation sector.	Below-average revenue generation because of participation in smaller, low-growth, or very competitive markets.
An ability to translate market leadership into higher revenue or stronger operating profits than its competitors.	Competes mostly on price, due to a lack of control over scarce infrastructure, spot or short-term contracts, or an inability to clearly differentiate its service.
Barriers to entry, established by controlling scarce infrastructure or by signing long-term contracts, that give the company more pricing power or more stable revenue.	Low barriers to entry, that give the company limited pricing power.
Participation in subsegments that have more favorable characteristics than average for the cyclical transportation industry, such as certain highly concentrated and stable bus markets.	Participation in segments that have less favorable characteristics than average for the cyclical transportation industry. For example, shipping bulk commodities (such as crude oil, coal, or iron ore) internationally is a highly fragmented segment that is very price competitive.

Scale, scope, and diversity

Cyclical transportation companies tend to have high operating leverage because they invest a substantial amount in fixed assets. Most also operate transportation networks so wide coverage of various regional markets makes it easier to attract customers. In our view, the volatility of their revenue and profitability can be mitigated somewhat by serving a diverse range of regions and customers.

The factors and statistics that we use in evaluating scale, scope, and diversity vary by subsector within the wider cyclical transportation industry.

Airlines

For airlines, we consider:

- Scale, measured as traffic in revenue passenger miles or kilometers, number of flights, and number of passengers.
- Geographic coverage of the route network. We expect revenue to be more stable if the airline targets a range of markets, globally or within a country.
- Balance between different types of travelers, such as business or leisure travelers. On average, premium travelers are more profitable, but if an airline relies too heavily on one type of traveler the potential for revenue volatility increases.
- Diversification in terms of nonpassenger businesses, such as air cargo, maintenance-repair-overhaul (MRO) or the sale of frequent flyer miles, and ancillary fees such as baggage and seat selection. Air cargo tends to have more volatile demand than passenger transport. The sale of frequent flyer miles typically offers high margins and relatively low risks.
- Airlines dedicated to freight services tend to be smaller and less diversified. In this subsegment, we focus on scale measured by revenue ton miles or kilometers or hours flown; length and terms of any contracts; regional or global coverage; diversity by products transported; and customer diversity.

Shipping

For shipping companies, we consider:

- The scale of the vessel fleet, which can improve end-market and customer diversity. Operators that have multiple classes of vessels (tankers, containerships, and bulk commodity ships) that are of various sizes, or those that participate in commercial pools, can carry a broad range of commodities and meet the needs of customers with widely different capacity requirements.
- The diversity of the customer base and the proportion of reputable charterers included; this limits counterparty risk and makes revenue more predictable.
- Geographic coverage of the 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.

Trucking

For trucking companies, we consider:

- Their geographic coverage and diversity by end markets. Companies gain greater revenue stability by serving a variety of end markets within each country.
- Characteristics of the sectors and end markets to which they are exposed. Some sectors are more volatile than others (for example, retail is more volatile than fuel) and changes in demand will have a knock-on effect on trucking company revenue.
- Volume, based on tonnage per day and number of shipments per day. These metrics are particularly useful where a trucking company may benefit from economies of scale and gain a competitive advantage from providing extensive services on high-volume traffic lanes.
- Degree of customer concentration. Reliance on a key customer exposes companies to counterparty risk, which is mitigated if the company has a long-term relationship with its key customer and the customer has good long-term growth prospects.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
A sizable equipment fleet and broad service offerings, which can support above-average revenue generation and profit potential by offering better utilization, economies of scale, or a wide range of services that is attractive to customers.	Modest scale that leaves the company vulnerable to larger competitors and may force it to compete mainly on price.
Participation in a variety of markets with favorable supply and demand fundamentals, especially where demand in those markets is not closely correlated.	Participation in only a few markets, particularly if those markets have unfavorable growth prospects or are intensely competitive.
Diversity of customers, so that the loss of any single account does not have a material adverse effect on revenue and profitability.	High customer concentration or heavy reliance on one or a few customers.

Operating efficiency

A cyclical transportation company that has a high degree of operating efficiency should generate stronger profit margins under all market conditions. We focus on:

- Cost structure;
- Asset utilization and efficiency measures such as revenue or cost per unit of capacity; and
- Operating profit margins.

Revenue generation tends to vary according to market conditions. Therefore, we view cost structure as a more consistent means of differentiating companies and place greater emphasis on operating costs.

Airlines

For airlines, we consider:

- Revenue generated per unit of capacity based on metrics such as passenger revenue per available seat mile (PRASM), passenger revenue per available seat kilometer (PRASK), or revenue per ton kilometer (RTK). Airlines tend to report different metrics in different countries and regions. Reporting on a per ton kilometer basis is useful for airlines that generate a significant proportion of their revenue from carrying freight. We may also assess revenue generation by looking at yield, which helps us assess pricing; and load factor, which helps us judge utilization.
- An airline's operating cost per unit of capacity, based on measures such as operating cost per available seat mile (CASM), operating cost per available seat kilometer (CASK), or operating cost per available ton kilometer. We may also look at fuel and labor costs. The cost of labor, in particular, can be a good way to differentiate airline cost structures. Operating statistics are most useful when compared across direct competitors because market characteristics can vary significantly by country or region.
- The age and fuel efficiency of the aircraft fleet: Younger and more fuel-efficient planes generally have lower operating costs.
- Whether the fuel exposure is hedged. Although fuel hedging is expensive and adds to operating costs, it can guard against sharp increases in fuel prices that could weigh on profits.

Shipping

For shipping lines, we consider:

- The proportion of vessel revenue days (calculated as ship available days, minus the days that vessels are not available for employment--for example, due to repairs or dry-docking) that are committed to long-term charter agreements, rather than being sold via the spot market. Long-term, fixed-rate, noncancellable charters normally translate to less volatile and more predictable revenue streams, compared with spot contracts.
- The length of any charter agreements. This indicates the pricing and utilization risks the shipping company will be exposed to when the contracts come up for renewal.
- Vessel utilization compared with peers. This can be influenced by the proportion of ships under long-term charters or in pooling arrangements.
- Physical condition of the fleet, based on age, engine-type, fuel consumption, and technological advancements. Younger and more fuel-efficient ships generally have lower running costs and are preferred.

- The degree to which the shipping company bears the risk of changes in bunker fuel (which is used to power ships) prices. Operators whose vessels are subject to time charters are generally able to pass fuel costs to their customers; 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 (such as crew, and technical and management fees) and voyage expenses (such as fuel costs, and port and canal tolls).
- Operating flexibility, measured by the proportion of tonnage chartered-in, versus owned. Operators that have chartered-in ships can return ships when their charters expire, which is particularly valuable during cyclical downturns.
- For unionized shipping companies, we evaluate labor relations and labor costs, and assess whether the union or unions could disrupt operations in the event of a contract dispute.

Trucking

For trucking companies, we consider:

- Operating efficiency metrics, such as the operating ratio (operating expenses, including depreciation, as a percentage of operating revenue) and operating margin before and after depreciation.
- Asset utilization metrics, such as the proportion of empty miles (where no freight is being carried) and the 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).
- Physical condition of the truck fleet, measured by age. Younger fleets generally have lower operating costs (including maintenance), require less capex, and comply more fully with regulatory requirements.
- For unionized trucking companies, we evaluate labor relations and labor costs, and assess whether the union could disrupt operations in the event of a contract dispute.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Sustainable operating cost advantage, caused by economies of scale, lower labor costs, more fuel-efficient equipment, or process efficiencies, and measured by segment-specific operating statistics.	Below-average operating profitability because operating costs exceed those of competitors and are not offset by sustainable, stronger revenue generation.
Sustainable revenue advantage, caused by stronger asset utilization or product differentiation, measured using segment-specific operating statistics.	Below-average revenue generation that is not offset by consistently lower costs, resulting in subpar operating profitability.
Transportation equipment that is newer, more fuel-efficient, and more suitable for the services provided than that of competitors.	A fleet that is less fuel-efficient on average than those of competitors.
Relatively stable and positive labor relations, particularly for passenger transportation companies, where morale can affect service and reputation.	Labor relations or provisions in labor contracts have the potential to affect a company's ability to operate efficiently.
Regulations, if any, that do not materially erode 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 compared with competitors in other countries or regions.	Volatile operating profitability because of exposure to risks from stronger competitors or other unfavorable underlying market characteristics or changes.

Financial Risk Profile

Core and supplementary ratios

We view transportation cyclical as prospectively volatile. Accordingly, as stated in our corporate methodology, we typically calculate our ratios by applying a 50% weight to the current year and a 50% weight to the first forecast year. Where a company operates in a subsector and segment that is less volatile than most cyclical transportation segments, such as certain bus markets, we may calculate our ratios based on five years, as we do for most corporates.

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the transportation infrastructure sector based on:

- The transparency and predictability of the regulatory framework, or the concession or contract, under which the company operates; and the potential for changes to regulatory policy and/or to government intervention (negative or supportive); and
- The demand risk, which depends on the size and attractiveness of the catchment area, including location, population served, wealth and economic strength and growth potential, and contribution to the regional development.

Regulatory or contractual framework: We consider how tariffs are set; how regulated revenue is determined and shared; and the regulator's record on oversight, protection of stakeholders, and enforcement of legal or contractual constraints. Mandatory investments, with no legal or contractual means of recovering these capital costs, may place some transportation infrastructure companies at a competitive disadvantage.

Demand risk: We consider the company's specific role and relative value added to users and economies relative to other modes of transportation, as well as the stability and type of traffic. Key competitive drivers are market share dynamics and the nature of competition, including the number of competitors and the presence of alternative modes of transportation.

Airports

Regulation, oversight, and tariff-setting mechanism: Regulated airports may benefit from transparency and visibility on the determination of tariffs, while commercial airports may be more exposed to competition but enjoy greater tariff-setting ability. For regulated airports, we assess the independence and predictability of the regulatory framework underpinning the operation of the airport. We focus, in particular, on the ability to adjust tariffs and recover costs in a timely manner, as well as earn a reasonable return supporting access to markets. Pricing frameworks include "single till," "dual till," and "hybrid till" models:

- The single-till method caps the maximum return on total airport assets, including commercial revenue sources (such as retail, parking, or property revenue). This provides more certainty to returns and earnings, and is generally considered as more credit protective by reducing volatility, lowering downside but also limiting upside.
- Under the dual-till method, the returns on aeronautical assets are regulated or subject to oversight, while the commercial revenue sources (such as retail, car parking, or property) are unregulated. This method permits substantial upside from growing airport revenue, and gives the airport management a greater role

Sector description

Companies that derive more than half of their revenue from (or for which more than half of their assets are) the regulated or commercial operations of airports, road networks, railways system (including rail tracks, passenger, and state-owned freight railway), and other assets and services, such as navigable waterways, or air and marine controllers.

Subsectors	Typical CPGP
Commercial transportation infrastructure such as car parks and ports exposed to competitive pressures such as short-term agreements with shipowners, tariff structures, or competitive factors	Capital or asset focus
Regulated infrastructure, such as airports, roads, ports, mass transit, and railways, which is typically subject to government policy and regulation that limits competitive pressures and supports stable profitability	National industry and utilities

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

but, equally, could represent more downside risk during economic downturns or unsuccessful commercial strategies.

Finally, we factor in any obligations or constraints under license and permits, future development rights, operating conditions such as curfew hours, noise or environmental restrictions, and related penalties.

Demand risk: We consider:

- The size and attractiveness of the airport's catchment area and markets, including wealth and economic strength and growth potential. We also incorporate environmental trends, which differ by region, and their potential impact on the airport's profitability.
- The stability and type of passenger traffic. Transit passenger numbers tend to fluctuate more than origin-and-destination (O&D) passengers. In addition, domestic (long-distance) traffic may be more essential than certain international routes that could be subject to higher geopolitical or health and safety (for example, pandemic outbreaks) risks. Similarly, tourist numbers tend to be more affected by economic trends than flying to visit friends and relatives.
- The competition from other airports in the catchment area or alternative modes of transport (for short-haul). Lack of alternatives may make airports essential to remote areas or islands, and good connectivity with other transport links can also offer protection to volume risk. International hubs, in particular, can gain a competitive advantage through their aeronautical charges, airport facilities, airline network, or connectivity.

Roads

Regulatory framework: For roads, we assess how closely their regulatory or contractual framework is aligned with the government's infrastructure policies and long-term plans, and the road financial design and stability. A strong framework that includes clear pricing or tariff-setting mechanisms, will attract long-term capital and offer operators the ability to recover their operating and capital costs in a timely manner.

Demand risk: We consider:

- The location, wealth, and size of the populations and markets the road serves, its connectivity with the regional economy and other roads, the purposes of the trips being made, and user affordability.
- The stability and nature of traffic volumes. For example, commercial traffic (heavy goods vehicles) typically reacts more than light traffic vehicles under adverse macroeconomic conditions, heightening the impact of an economic downturn on the road. Roads that collect availability payments are exposed to lower traffic risks than those that collect tolls.
- The competition in terms of existing or future transportation alternatives and other operators. When analyzing the value for money a project offers users, we focus mainly on time savings and security, compared with alternatives.

Car parks

We analyze car parks that operate under long-term concessions, with tariff setting mechanisms and contractual protections that resemble those of toll road operators, as infrastructure companies under our criteria. When assessing this sector, we consider the size and diversification of the portfolio, as well as the location of key assets and their proximity to users' final destinations; parking alternatives (such as on-street parking); and long-term changes that may fuel an increase in demand for parking, such as the development of event facilities, or the area becoming a tourism or business destination.

Ports

Regulatory framework: For ports operating under concessions, we consider the legal strength of any contractual provisions implemented to prevent overcharging and the transparency of components such as mandatory capex requirements and conditions for unions working on site. At the same time, we assess the extent to which a port depends on the service decisions made by shipping lines.

Demand risk: We consider the ports' location, connectivity, and position with respect to global or regional trade routes; the catchment area it serves; and its past record of volume patterns during economic downturns versus peers. To assess exposure to demand risk, we also consider the company's operating and traffic performance. In some cases, ports benefit from guaranteed revenue, or from harbor dues or fees that are subject to long-lasting agreements, making usage more predictable. By contrast, where ports have high exposure to commodities, traffic may be more volatile. Traffic will also be affected by physical constraints, such as the depth of an access channel or the port's network of intermodal transport connections (rail links, inland shipping, the road network, and pipelines).

Mass transit and railway

Regulatory framework: Mass transit and rail services (including passenger and freight rail networks) could be provided under a wide variety of regulatory, legal, political, or contractual frameworks and concession agreements. Competitive advantage is assessed by considering government policy, the scope of services provided, asset profiles, competition and affordability, and the provider's ability to access ancillary revenue.

Typically, rail services are provided under a bilateral agreement between the government and the provider that specifies which services are considered public service operations (PSO) and regulates their provision and remuneration. Because governments usually subsidize PSO services, a material part of the funding is exposed to approval of the public budget. We assess these agreements based on:

- The transparency of the key components used to set rates;
- How long they last and the clarity of the renewal process;
- Whether all operating and capital costs can be recovered; and
- What incentives exist to improve the service.

Some freight rail networks are operated under a franchise agreement with the government (that is, the company gets long-term licensing rights to operate the business during the franchise agreement, but the government retains step in rights).

Government policy: Close alignment with national and local infrastructure planning and policies is beneficial for mass transit providers and freight rail networks. Environmentally focused government policies could encourage investment in railways because trains are more environmentally friendly than airlines and automobiles. Large, densely populated cities could also significantly reduce transport congestion and improve commuting efficiency by developing an extensive metro network. The cost to users of mass transit systems can also be politically sensitive, making regulatory or governmental intervention to keep prices affordable likely. This can significantly affect the quality of cash flow. In some cases, governments regulate the fare at a low level but provide regular operational subsidies to compensate the companies or will reimburse them by allowing land sales or access to property development earnings. Similar concepts apply to freight rail networks particularly if governments are focused on transition from road to rail freight.

Demand risk: Competition from alternative providers and alternative means of transport affect traffic stability, especially under adverse macroeconomic conditions. Long-distance mass transit competes with road networks and airports, and companies that depend on tourists are exposed to fluctuations in demand over the economic cycle. Although commuter traffic, including intercity commuting, is a more stable source of income, it remains exposed to the domestic economy and level of work-from-home activities. Customer choices are affected by the operating history and track record of transit companies, which is critical for the rail sector because it is exposed to alternative travel options. We consider metrics such as service punctuality, user satisfaction, and passenger safety when assessing the user view of quality of service and value for money. Rail networks may or may not carry volume risk depending on contractual arrangement/regulation. Customer loss and product concentration can affect traffic stability, unless the rail networks have the ability to spread their costs (operating and capital investment cost through contractual arrangements or regulatory mechanisms) across users, which would support the business through economic cycles and profitability.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
The company provides an essential service to a national or regional economy. The area the company serves is large and wealthy and includes a capital city, economic hub, or strategic routes.	The company serves a relatively small or weak economy and/or demand patterns can be considered as volatile or uncertain.
Limited competition.	Competition from operators or other transportation modes is meaningful, creating volatile demand and price pressure.
The company offers a strong value for money, benefitting from a strong asset rationale and a stable and resilient demand.	The value added by the company could be perceived as limited by end users, resulting in demand uncertainty.
The regulatory or contractual framework or concession agreement is transparent, predictable, and consistent, and enables adequate and timely cost recovery. Alternatively, the entity enjoys strong own tariff-setting ability.	The regulatory, legal, or political framework or concession agreement is unfavorable or unpredictable, and no compensating mechanism has historically been provided.
There is no history of adverse government or regulatory intervention on infrastructure assets, and we do not expect such intervention in future.	Recent history of adverse government or regulatory intervention in the transportation infrastructure industry or other regulated industries. Additional costs or investment requirements were not economically or financially compensated.
Airports	
The airport is dominant within its catchment area and competition from adjacent airports or alternative transportation modes is limited.	The airport is exposed to above-average competition from other airports in the catchment area or in the case of transit passengers, in the region; or there is greater competition from other modes like high-speed rail, in the case of short-haul traffic; or serves as an end point for a catchment area suffering from a structural economic decline.
The airport serves a variety of traffic flows, including a significant share of Origin & Destination traffic. Any significant share of transit passengers is mitigated by track-record and/or established position as an international hub.	The airport has a high share of transit passengers, or serves a niche market such as business, tourism or other travel if we see such traffic as more volatile and sensitive to economic or geopolitical drivers.
The airport is geographically well positioned and connected to road and railways networks.	The airport serves as an end point, and/or lacks accessibility, with limited connectivity to roads and railways

Strong or strong/adequate	Adequate/weak or weak
Airport routes are attractive to ensure that departing airlines could be replaced quickly.	Declining route attractiveness and/or high airline concentration, with non-competitive cost structure.
Aeronautical unit charges are in line with or lower than peers. If higher than peers, the charges are considered affordable by users.	Aeronautical unit charges are higher than peers; or weak ability to pass-through costs when tariffs are set by regulator.
Credit risks from environmental or other regulations are seen as manageable.	Opposition from the government or local communities on grounds of environmental concerns or noise pollution could be disruptive, and this is not mitigated in our view by the regulatory framework. One or more of the company's airports is exposed to extreme climate risk.
Roads and car parks	
The company is dominant within its market, and/or is part of a national or regional network. The asset(s) serves a developed, stable, and diversified local economy with high income per capita, low unemployment, and observed stable correlation to GDP.	Specialized asset with narrow end user universe. The asset(s) serves developing, volatile, and/or undiversified local economy; high unemployment; observed divergence between GDP and traffic growth.
Point of origin and destinations are linked to roads and their major economic or population centers.	Point of origin and destinations are not linked to major economic or population centers.
Track record and strong contracts ensuring passive protection (competing facilities will not be built or upgraded) and active protection involving government action (traffic-calming).	The company cannot recover its fixed and variable operating costs, investments, and capital costs (depreciation and a reasonable return on investment) in full or on a timely basis through the economic and political cycle.
Competition from other transportation links and infrastructure operators is limited and stable.	Stiff competition from other transportation links and infrastructure operators.
The road represents a significant proportion of the total end-to-end average journey and time saving is significant compared to alternative routes.	The road is a stand-alone facility with no link to any other major network.
Protective legislation is in place that could lessen the threat from alternative transportation modes and ensure robust cash return.	Several future threats can be identified that could affect growth prospects.
Clear pricing or tariff-setting mechanisms, with track record of its ability to adjust the tariff as per concession or contractual framework.	Record of riots or protest against tariff increases, which aren't economically or financially compensated on a timely basis.
Steady traffic profile due to high reliance on commuters or, for car parks, an access to a variety of destinations, such as shopping centers, airports, or industrial sites.	High recreational traffic (seasonal demand) and/or high reliance on commercial vehicles
Ports	
The port serves a broad catchment area where trade routes are active and attractive. It has a dominant market share, or limited threat of loss of market share to neighboring ports.	The port serves a narrow catchment area that is on secular decline, or reliance on a limited user base or single industry that has uncertain long-term prospects. It faces strong competition from nearby ports and is exposed to uncertain competitive dynamics or cannibalization from other ports over the medium to long-term.
The port enjoys a natural competitive advantage due to its geographic position, for example close to large population centers that provide robust local demand for goods, water depth of the access channel, and/or fit-for-purpose. The port benefits from interconnection with existing infrastructure in its hinterland.	The port has geographic or asset constrains, such as limited water depth or lackluster interconnection to hinterland.
Established and clear mechanism of setting port charges, with supportive leasing and commercial activities.	Unclear mechanism for setting port charges, with restrictions on leasing and commercial activities.
For market-determined charges, the port has high negotiating power with its customers.	The port has a track record of poor negotiating power with its customers.
Mass transit/railway	
The company is dominant within its market or markets, has a large network, and competition from other transportation links or modes and operators is limited and stable, contributing to stability in passenger or freight volumes.	High sensitivity to fluctuations in volume exposes the company to cash flow volatility; or volumes are expected to show a structural decline, with no offsetting mechanism, such as government support.
The catchment area is wealthy and there is some flexibility to raise tariffs.	Tariffs cannot be raised without causing user affordability to drop, or are kept low for socioeconomic reasons, and there is no ongoing support.

Strong or strong/adequate	Adequate/weak or weak
Price setting mechanism / subsidies is supportive and ensure adequate cost recovery, including return on investments. Mechanism to recover capex is clearly defined.	Price setting mechanism is ad hoc and do not cover costs. Mechanism to recover capex investment is not defined well.

Scale, scope, and diversity

We assess scale, scope, and diversity in the transportation infrastructure sector based on:

- The various revenue streams and their key drivers;
- Geographic footprint, including the size, diversity, and maturity of a company's assets; and
- Remaining asset or concession life.

Although transportation infrastructure assets require a high initial investment, the marginal cost of servicing additional demand once the asset is operational is relatively low, until the capacity has been fully utilized. Ultimately, the benefit of scale and diversity is that traffic demand and revenue are more stable. Therefore, when assessing scale, scope, and diversity, we typically focus on operations.

Participating in a variety of markets that have favorable supply-and-demand fundamentals and are not closely correlated is positive, but not a precondition for scale, scope, and diversity to be assessed as strong or strong/adequate.

Airports: We analyze the number of passengers relative to other facilities in the area; the traffic type (O&D versus transit, friends and family, for leisure, or for business); overall revenue diversity, and the extent to which revenue is correlated. We take into consideration the airport's split between aeronautical versus nonaeronautical, that is, commercial revenue (retail, property, or leased assets), as well as what proportion comes from cargo volumes. We analyze the factors underpinning revenue stability and growth, including contracts tenor.

Customer concentration would normally preclude us from viewing scale, scope, and diversity as strong. However, the negative impact of concentration may be offset if we believe the carrier(s) can be promptly replaced or if we believe that the default of a carrier would not result in traffic interruptions and materially affect the aeronautical payments or passenger volumes; the airport has strong credit fundamentals; or government support (to the airport and/or the carrier) or other mitigants are in place.

Roads and car parks: We analyze the company's revenue streams and their key drivers, including any long-term contractual income (for example, from property, leased assets, or availability payments); the remaining life of the asset or concession, or the weighted average in the case of a portfolio of assets, and the prospects of concession extension/renewal to sustain cash flow; and the size, geographical diversity, and maturity of the markets the company serves, and the number and diversity of its customers or users.

Ports: Port activity is affected by trade and economic cycles, political and economic policies, natural hazards, and exposure to cargo demand and interruptions, including from competition for handling cargo from other ports and regions. However, customer, regional and geographical diversity can mitigate the risks to port operations. Government policies concerning foreign trade, currency, and agriculture can have a significant impact on the amount of cargo flowing through a specific port. Ports well positioned to ride out any temporary or cyclical disruption to the flow of one or two products have serving catchment areas that have developed a broad array of trading partners, handle a range of cargo types, and/or have a stable relationship with the communities in which they operate as well as major shipping lines that call on the port.

We also analyze the port's sources of revenue, including any long-term contractual income (for example, contractual agreements with shipping lines, port tenants, or leased assets). Key metrics include the revenue split in terms of regulated versus commercial, by cargo type, and across different ports, given the speed of loading and offloading and the relative distance to competing ports.

If a port's competitive advantage is adequate or below, significant customer concentration may present additional risks. In addition, ports are exposed to the volatility of the shipping industry which is vulnerable to system shocks and frequent supply-and-demand imbalances that are beyond their control. These may include exposure to commodities such as oil and gas, iron ore, and coal. A single or large tenant, commodity concentration or high proportion of trans-shipment cargo also expose the port operator to changes in global or regional markets, or supply chains.

Mass transit/railway: We analyze the company's revenue streams and their key drivers, including the share that is not regulated, such as retail and real estate revenue; the size, geographical diversity, and maturity of the markets the company serves, and the number and diversity of its customers or users. Where available, we consider the proportion of income from commuters versus noncommuters; and where relevant, the split between long- and short-haul transport. Diversification is less important in this sector because mass transit and rail assets are viewed as essential, and are typically monopolistic.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
The remaining asset or concession life is comfortable or in line with peers, typically 10 years or more.	Remaining life of the asset or concession is limited or less than five years, and it is unclear whether it will be renewed.
Airports	
High proportion of origin-and-destination passengers, of which we view those visiting friends and family to be the most resilient and stable group.	High share of transit passengers, especially if the number could be affected by competition from other hub airports.
High share of domestic or intraregional (for example, within the EU) passenger traffic, where these passengers are unlikely to switch to an alternative mode of travel.	Heavily reliant on more-volatile traffic, such as leisure, especially if tourism in the region is sensitive to economic and geopolitical risks.
The attractiveness and profitability of the routes suggest that the main carrier or carriers could be easily replaced within a short period, if these airlines were in financial distress.	Significant customer concentration, particularly when combined with a competitive advantage assessment of adequate or below.
Commercial revenue benefits from long-lasting contractual protections, such as long-term leases. Multiple and diverse revenue streams that demonstrate good resilience.	Revenue fluctuations caused by demand risk or exposure to short term leases and/or contracts.
Roads and car parks	
Mature assets that serve sizable and wealthy markets.	Small markets with limited wealth and poor growth prospects, or subject to intense competition.
Portfolio of assets	Single site/ asset
Ports	
Mature assets that serve sizable and wealthy markets.	Small markets with limited wealth and poor growth prospects, or subject to intense competition.
Large size of handling capacity and number of berths	Port operates a single berth or-has limited interconnexion with other infrastructures.
Regularly handles large shipping volumes and demonstrates diversity in terms of cargo, shipping lines, trade destinations, and the offtakers it serves, which are generally stable during different economic cycles.	Has experienced significant swings in tonnage or activity due to high reliance on a few commodities or industries.
If landlord revenue is part of its business model, typically has a diversified tenant base to procure its revenue and limited operating risk.	Significant customer concentration, especially where the company's competitive advantage is assessed as adequate or below.
Mass transit/railway	
Integrated operators, with diversified revenue streams, for example, responsible for managing the rail infrastructure and providing passengers rail services, such as retail and real estate. This could mitigate demand risk and support stability of cash flow.	Less integrated operator with limited variety of additional rail services.
Operate mature or strategic transportation assets that serve sizable and wealthy markets. For rail networks, diverse sectors and customers.	Small markets with limited wealth and poor growth prospects, or subject to intense competition.

Operating efficiency

We assess operating efficiency in the transportation infrastructure sector based on:

- A company's ability to manage its cost base to maintain profitability and free cash flow through the cycle;
- The cost of maintenance and investment needs, based on the age and quality of the assets and the extent to which capacity is utilized;
- Working capital management and the effectiveness of revenue collection; and
- Risk management, including quality of services and safety track record.

A transportation infrastructure provider that has a high degree of operating efficiency should generate stronger profit margins and be more able to adjust tariffs under the terms of its contract.

Ports: A port's ability to attract and retain shipping lines depends on it having sufficient capacity and delivering minimum service levels. Although the regulatory, legal, political, or contractual framework or concession agreement may enable the port to increase tariffs or be compensated for cost increases, we also look for indications that spending can be flexible, especially during periods of lower demand. Taking a modular approach to project development, for example, enables the port to defer aspects of new projects at need. In our view, this is vital to maintaining the port's underlying creditworthiness.

We assess the effect of government policies on maintenance and investment expenditure, the contracts the company has entered into, and its business plan. A company with greater operating efficiency will have a history of managing variable operating costs, for example, by using flexible outsourcing arrangements.

Mass transit/railway: We consider the company's record of investing in operational stability and resilience, including improvements to safety, given the industry's history of natural disasters and labor issues. In addition, we assess the effectiveness of any efforts to even out passenger (or freight) traffic volumes, such as use of dynamic pricing and any mechanisms within the regulatory, legal, political, or contractual framework or concession agreement that enable the company to increase tariffs or be compensated for cost increases, inflation, or higher interest costs. Conversely, we also consider whether the company can adjust expenditure when demand is lower based on our view of the effect of government policies on maintenance and investment costs, the contracts the company has entered into, and its business plan.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
Ability to maintain profitability through most of the cycle, either by managing the operating cost base or by quickly adjusting tariffs in response to rising costs.	An inability to manage the cost base or adjust tariffs within the next two years.
Regulatory, legal, political, or contractual framework or concession agreement supports the ability to adjust tariffs in a timely fashion when costs increase.	Operates in a competitive price environment and lacks regulatory, legal, political, or contractual framework or concession agreement.
Limited need for maintenance capex as long as assets are operational and in good condition.	Significant investment needs without an agreed mechanism for recovering the cost, or remuneration is significantly back-ended.
Stable cashflow generation and good working capital management, including flexibility to reduced maintenance cost in during downturn period.	Poor working capital management, or exposure to late payments and customer defaults.
Maintain a good track record of quality of services and safety.	Below average quality of services key performance indicators (KPIs), and history of safety events within the operator's control.
Airports	
Capacity expansions are well planned and de-risked, supported by contractual agreements with potential customers.	Lack of mitigation for the significant construction execution risks associated with sizable capacity expansion projects, especially if we view the airport operator as having limited expertise.
Toll roads and car parks	
Use of effective tolling technology and history, with high control of toll leakage or improving trend.	Typically uses manual tolling or an unreliable tolling system so that, historically, toll leakage has been high.
Ports	
High capacity utilization and operating KPIs. Salaries and other labor payments do not weigh on profitability.	Capacity constraints can arise because of regulation, prevailing weather, ship size, or infrastructure. Below average operating KPIs. Restrictive labor standards in terms of pay, benefits, and rewards are highly influenced by the presence of labor unions.

Financial Risk Profile

Volatility tables

We apply the low volatility table to transportation infrastructure companies that derive more than two-thirds of their operating cash flow from transportation infrastructure activities that we view as predictable, with the rest of their activities being not seen as high-risk or volatile, or not contributing a significant amount to the group's overall risk profile.

In addition, the company must:

- Have a CICRA of '1' or '2' and have a competitive advantage assessment of strong or strong/adequate; or
- Have a CICRA of '3'; have a competitive advantage assessment of strong; and have limited exposure to competitive risks or revenue volatility; a regulatory, contractual, and legal framework we view as supportive; and low risk of major negative political intervention.

We apply the medial volatility table to transportation infrastructure companies that do not qualify for low volatility and have all of the following characteristics:

- Derive at least half of operating cash flow from transportation infrastructure activities we view as predictable;
- Do not engage in activities that we consider present a significant risk to the overall profile;
- Have a CICRA of '3' or better; and
- Have a competitive advantage assessment of at least adequate; a regulatory, contractual, and legal framework we view as supportive; and low risk of major negative political intervention.

In all other cases, we use the standard volatility table.

Core ratios

Debt service costs are typically significant for transportation infrastructure companies, making FFO to debt the preferred measure of their cash flow/leverage.

Supplementary ratios

Our preferred supplementary ratio in this sector is FFO cash interest coverage.

Modifiers

Financial policy

When a transportation infrastructure company operates under a concession, it is required to repay its debt before the assets are due to return to the concession grantor. As a result, we include the company's strategy for reducing leverage conditions or to replace the expiring cash flow well in advance, in our assessment of its financial policy. If a company lacks a credible plan to decrease its leverage well before the end of the concession, we would likely assess it as having negative leverage tolerance.

Section 37 | Unregulated Power And Gas

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Business Risk Profile

Sector description

Companies that generate and sell electricity--or buy and resell power and/or gas in some combination of energy or capacity--through bilateral agreements with a variety of counterparties (for example, to utilities and other intermediaries, directly to end consumers, or to a market administrator or system operator). They may be supported by policies such as fixed-price or feed-in tariffs, or long-term contractual payments with creditworthy off-takers, but do not benefit from regulated rates.

Subsectors	Typical CPGP
High-risk pure retail supply in fragmented markets where price competition is intense	Commodity focus/scale driven
Independent power producers and energy traders, or vertically integrated energy companies that own retail or wholesale operations and require sizable capital investment	Capital or asset focus
Low-risk retail supply companies (for example, district heating, or companies that have a near-monopoly)	National industry and utilities
Merchant power	Capital or asset focus
Pure retail supply in markets where price competition and customer churn are modest	Service and product focus
Renewables, primarily sold under long-term contracts	Capital or asset focus

Competitive advantage

Unregulated power and gas companies, such as renewable generation companies, don't benefit from protective rate regulation. However, they may benefit from policy support and gain competitive strength from fixed-price or feed-in tariffs, or from long-term contractual arrangements with creditworthy off-takers.

We assess competitive advantage in the unregulated power and gas sector based on:

- Market structure and attractiveness;
- Earnings structure and stability; and
- Asset mix and quality or technological advantage.

Market structure and attractiveness: The risk level of an unregulated power and gas company is heavily influenced by the markets in which it operates. We anticipate that operating stability would be affected by public policies in areas such as energy and the environment. The market structure in the relevant national, regional, or state jurisdiction may also have an effect, based on the degree of market liberalization; types of contract in use; mix and age of generation assets; weather impact; quality of interconnections with other markets or price zones; risk of curtailment; contracting and pricing structures; structural balance between supply and demand; and market liquidity, transparency, and growth rate.

Earnings structure and stability: This can vary widely, depending on price volatility and the specific utility's contractual price protections. For entities that produce, buy, and resell power and gas, we analyze factors that may affect competitive pressure, such as barriers to entry; potential exposure to short positions; customer-base stability; ability to pass on cost increases to customers; and price structure and flexibility with end consumers. We also look at brand reputation; hedging and procurement risk; the range of products the company offers; customer satisfaction; customer churn rates; policy interference in market rates; and demographic trends. Credit-supportive features may include the ability to transfer pricing and, in some cases, volume risks.

For electricity generators and supply companies, long-term and attractive pricing certainty may be achieved via long-term contracts for differences (CfDs) or feed-in tariffs, or through flexible long-term off-take agreements (sometimes referred to as power-purchase agreements) with creditworthy counterparties. Separately, entities may mitigate pricing volatility through hedging, depending on the liquidity and depth of the energy derivatives market. In certain markets, part of the generation capacity may have firm energy obligations (also known as "must-dispatch status") for which companies are remunerated via capacity mechanisms that can enhance long-term cash flow predictability. Separately, renewables subsidy schemes may enhance predictability but can sometimes be subject to retroactive government interference.

Where companies are exposed to merchant risks or rely on spot markets to sell a high proportion of their volumes, we anticipate that earnings may be more volatile. A history of temporary short positions that force a company to source volumes in the spot market to meet its sale commitments would weigh on our assessment. This can occur where a company has committed to sell a certain volume at a fixed price and supplies are disrupted by unforeseen low-probability, high-impact operational, climate-related, or market events.

Asset mix and quality or technological advantage: Technological advantage--in particular, the quality and attractiveness of a company's generation portfolio--is key to ensuring long-term profitability in the sector, particularly for merchant power. We assess it based on:

- Generation type, fuel mix (thermal, hydro, renewables, or nuclear) and carbon intensity;
- Position in the merit order, which ranks all generating assets serving a market by marginal cost position, and dispatching profile (base, mid-merit, or peak load);
- Age profile and reinvestment needs (related to retrofits or replacement); and
- Location with respect to end customers and proximity to raw material inputs (such as integrated coal mines, a gas hub, or a major transmission line)

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Participates in a market or region that has well-established and predictable market rules, including transparent and reasonably predictable environmental rule-making processes.	Participates in a market or region that has poorly defined and unpredictable or transitory market rules; or a market that is undergoing significant structural changes and is subject to high uncertainty.
High barriers to entry, low market volatility, low competitive pressures, manageable structural changes (including from environmental net zero regulations or carbon taxes), and balanced supply-and-demand characteristics.	Low barriers to entry, high market volatility or uncertainty, weak medium- and long-term growth prospects, or supply-and-demand characteristics that are often unbalanced.
Has gained a technological advantage through its attractive and diverse mix of generation assets that have low variable costs, such as renewables.	Poor asset mix and quality.
Asset base is well-invested in diverse and favorable locations and has sufficient dispatchable capacities to limit supply shortages and exposure to extreme price spikes (this may include nuclear, hydropower, and--in some markets--gas-fired generation).	Asset base is in unfavorable locations (for example, it is exposed to curtailment) or has significant and unmitigated exposure to energy transition risks (for example, assets that have high greenhouse-gas emissions and may dispatch only under certain conditions).
Price risk has been sharply reduced or eliminated through regulatory or contractual protections or long-term off-take agreements with creditworthy counterparties, especially if the counterparties show diversity and the agreements last longer than eight years (or, for shorter agreements, renewal on similar terms is highly likely).	The earnings profile generally shows significant volatility over the short or medium term because most volumes are exposed to merchant risks, sold in spot markets, or sold at unfavorable prices, with only a modest level of hedging.
Strong retail market shares, or market position that benefits from generation dispatch and a generally stable retail market share that helps to limit load mismatch and lessen any reliance on selling into or procuring from a competitive market.	Shares in retail markets are relatively small and may be unstable; business model focuses on retail markets with only modest integration of operations and are typically subject to high competitive pressures or regulatory or country risks that impede the ability to pass along costs to end customers; or the company is a pure price taker.

Scale, scope, and diversity

We assess scale, scope, and diversity in the unregulated power and gas sector based on:

- The relative size of operations, earnings, and cash flow;
- The company's diversity in terms of the markets in which it operates;
- Customer and supplier concentrations;
- The breadth of the asset mix (including fuel type and plant diversity); and
- The degree of vertical integration--both forward (retail) and backward (generation or fuel).

Size of operations: We measure the scale of operations by power generation or distribution capacity, and by earnings and cash flow. Large-scale operations support stronger competitive positions, with more operating flexibility and economies of scale than small companies. For companies that supply the retail market, the position and size of the markets in which they participate can affect the degree to which they benefit from economies of scale.

Market diversity: We review the company's diversity across the markets it serves by looking at how its cash flow generation and stability benefit from operating in multiple geographic regions. We view companies more positively if they operate in regions that exhibit average to better-than-average levels of wealth, and where employment and growth levels underpin the local economy and support long-term growth and prices. The risk of operating in a single region may be mitigated if the region is sufficiently large, demonstrates economic diversity, and has at least average demographic characteristics. Increasingly, weak correlation of seasonal weather and extreme events across regions served may mitigate environmental risks.

Customer and supplier concentrations: These may expose any company in the unregulated power and gas market to higher risk of operational disruptions and cash flow volatility, especially in the case of retailers, as counterparty risk might be heightened by dependance on a few key customers. Customer diversity depends on the mix of residential, commercial, and industrial clients. Supplier diversity is driven by the company's needs; for example, having multiple natural gas pipeline alternatives indicates a diverse supplier base for a gas-fired power plant.

Asset mix: The broader the asset mix--whether by fuel type, dispatchability, geography, or markets--the greater the protection against risk factors that may affect one region and its market dynamics more than another, such as fluctuations in supply and demand, or price.

Degree of integration: Similarly, a greater degree of vertical integration provides a greater ability to withstand unexpected operational or market disruptions to any one aspect of the business.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Large scale relative to competitors, and a strong market position in its key markets.	Small in scale, with little pricing power, in a market that has low growth prospects.
Participates in a variety of attractive geographic or organized markets.	Concentration in one market that exhibits high volatility or risk.
Diversity and flexibility in terms of fuel mix and plants compares favorably with that of peers, based on factors such as number of plants and base/mid-merit/peak load. For example, in renewable generation, a company may see demonstrable benefits from its multiple assets and its resource risk may be strongly mitigated by uncorrelated geographic locations or use of different technologies, such as wind versus solar.	Company is exposed to operating availability risks at key plants because its diversity and flexibility in terms of fuel mix and number of plants is limited.
No meaningful supplier or customer concentrations, or counterparty or procurement risk.	Meaningful supplier or customer concentration or procurement risk that could lead to uncertain operational availability or increased cost risk.
Significant levels of forward and backward integration that reduces the volatility of operating earnings.	Full merchant or retail risk, with little meaningful integration or hedging that could mitigate price and volume volatility.

Operating efficiency

We assess operating efficiency in the unregulated power and gas sector based on:

- Cost competitiveness;
- Asset efficiency;
- Flexibility of the cost structure in absorbing demand declines (operating leverage) or input cost pressures; and
- Cost and operational risk management.

Cost competitiveness: Our assessment focuses on economies of scale; access to important commodity inputs (including via direct ownership, through attractively priced contracts, or based on location); and the fixed-cost profile.

Asset efficiency: Our assessment focuses on the nature and age of the technology deployed; its relative productive efficiency, availability, and capacity factors; and placement in the dispatch merit order, as appropriate.

Cost structure flexibility: Our assessment focuses on overall sensitivity to raw material cost fluctuations and commodity prices; the relative proportion of fixed costs to variable costs that--when elevated--could dampen cash flow if utilization rates decline; and cash flow dependence on actual asset utilization.

Cost and operational risk management: This is particularly relevant when we assess retail supply companies, where profit margins are narrow and highly dependent on adequate risk controls on hedging, contracting, and treasury management. For retail supply companies, we consider the relative cost of serving their customer base and their ability to manage collections, and, in particular, how this affects working capital management. We also evaluate suppliers' proficiency at managing billing system upgrades or the introduction of new systems--a poorly implemented process has an adverse effect on cost and customer base management.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
Sustainable, leading cost position due to economies of scale, fuel flexibility or integration, and production efficiencies that support plant positioning at the low end of the merit order; high and stable capacity (load) factors through the cycle; and high availability and capacity factors and state-of-the-art technology.	Cost position is relatively weak due to high fuel cost or concentration risk, with key plants at the average-to-weak end of the merit order curve; or weak availability and capacity factors, perhaps influenced by aging technology.
Cost structure has relatively low fixed costs and the sensitivity of profit margins to fluctuations in the cost of raw materials or commodity prices, or supply-chain risks is limited, or effectively mitigated.	Profit margins show higher-than-average sensitivity to fluctuations in the cost of raw materials or commodity prices, or supply-chain risks.
Strong risk management policies and limited risk taking that can result from large contractual or commodity hedging positions, including an ability to limit volatility during periods of extreme price spike scenarios.	Risk management policies allow higher-than-average risk position due to extensive contractual commitments (operational or commodity hedging), including exposure to the risk of a sizable effect on profit during extreme price spikes.
Efficient working capital management, supported by a record of shorter-than-average cash conversion cycles.	Inefficient working capital management, supported by a track record of longer-than-average cash-conversion cycles.
Retail suppliers	
A sustainable and leading cost-to-serve position, supported by a record of stable, above-market-average operating margins.	A higher average cost-to-serve position, demonstrated by a record of below-average operating margins and stability.
Stronger-than-peers working capital management (based on number of unbilled customers), often underpinned by use of a single platform and proven technology.	Cash collection could be adversely affected by the higher number of unbilled customers, compared with peers.

Profitability

The two main benchmark measures we use in determining profitability are the EBITDA margin and ROC. We select the most appropriate benchmark for a particular company based on factors including the market location, position on the value chain, capital cycle, and even type of asset. For example:

- A hydro, wind, solar, or nuclear generator is likely to have reasonably high margins and low ROC, reflecting its low variable cost profile and high capital intensity. In this case, we generally view ROC as a better metric.
- An entity that mainly focuses on thermal generation may have stronger ROC and weaker EBITDA margins, reflecting its significant fuel costs, compared with fixed costs. In this case, the EBITDA margin is the more appropriate metric.
- A retail supplier is likely to have low margins, but a high ROC, because its business requires a limited capital commitment (excluding any liquidity buffer required to meet its hedging needs). Here, we rely primarily on EBITDA margins.

For integrated players, the appropriate measure depends on the degree of vertical and horizontal integration. If the company is undertaking a large capex program that has a long lead time, we generally focus on the EBITDA margin. When assessing the profitability of companies engaged in trading activity or more-frequent, event-driven activity--for example, where asset acquisitions or divestitures, which can distort margins, are part of the business strategy--we generally use the ROC.

An unregulated power and gas entity that we assess as having above-average profitability would be able to sustain a higher profitability than its peers in a similar market because of the composition of its customer and asset portfolio, including the competitive position (merit order) within its markets. We would also expect the entity to have a history of managing its costs well.

For traditional incumbents in mature markets, where demand growth is declining or even flat, the flexibility of their asset portfolios can be important in determining the stability of profitability.

For merchant power and integrated companies, fuel is a key input cost, while for those that have retail exposure, energy costs and operating costs are important. An entity with long-term contractual arrangements that give earnings more stability might earn a lower return than a more commodity-exposed issuer, but still be assessed as having above-average profitability. Conversely, a company we assess as having below-average profitability would generally have higher input costs, less-predictable asset performance, higher related maintenance expenses, or uneven experience in managing capital projects.

Financial Risk Profile

Accounting

For unregulated power and gas companies that enter into long-term power purchase agreements (PPAs), we make adjustments to account for those obligations, as we do for regulated utilities under our ratios and adjustments criteria.

Volatility tables

We use the medial volatility table only when assessing companies that derive a significant proportion of their operating cash flow or profits from lower-risk industries (typically regulated utility activities or those having particularly strongly protected unregulated revenue). "Strongly protected unregulated revenue" refers to revenue that benefits from long-term contractual arrangements that ensure high cash flow predictability with limited volume, price, and counterparty risk. In addition, use of the medial volatility table is restricted to companies that operate in jurisdictions with a supportive legal and regulatory environment, limited exposure to energy transition risks, and little likelihood of political interference or contractual renegotiation. Assuming that they meet the previous conditions, eligible arrangements may include capacity mechanisms; CfDs; feed-in tariffs; PPAs; and take-and/or-pay contracts that have minimal commodity price, inflation, and volume exposure. Typically, a baseload PPA would not qualify.

We apply the medial volatility table to companies with unregulated activities with country risk of '4' or better that meet either of the following characteristics:

- About 50% or more of forecast operating cash flows or profits come from regulated activities that have a regulatory advantage assessment of adequate or better and/or about two-thirds when adding strongly protected unregulated revenue; or
- About one-third or more of consolidated operating cash flows or profits comes from regulated activities that have a regulatory advantage assessment of strong/adequate or better and a CICRA of '3' or better.

In addition, in either case, the competitive position for the remaining activities must be assessed as at least satisfactory.

In all other cases, we apply the standard volatility table to unregulated power and gas companies.

Section 1 | Asset Managers

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Traditional asset managers typically manage mutual funds--which invest in stocks, bonds, or money market instruments--on behalf of retail and institutional investors. Alternative asset managers typically manage private equity funds, hedge funds, debt (credit) funds, or fund of funds (of private equity or hedge funds)--mostly on behalf of wealthy individuals or institutional investors.

The primary source of revenue for a traditional asset manager is the management fees it charges. These are usually calculated as a percentage of assets under management (AUM). Although alternative asset managers also generate revenue from management fees, they have the potential to generate additional income by outperforming certain predetermined investment thresholds, known as hurdle rates. Earning performance fees is one of the primary business objectives at an alternative asset manager. Asset managers may also invest directly in their funds, alongside the third parties whose assets they are managing. By making principal investments, an asset manager can also generate investment income or dividend income.

Sector description

Companies that derive more than half of their revenue from the management and performance fees they earn by investing third-party money or assets on behalf of retail or institutional investors.

Subsectors	Typical CPGP
Asset managers	Services and product focus

Business Risk Profile

Competitive advantage

We assess competitive advantage for asset managers based on:

- Business strategy;
- Market position;
- Investment performance; and
- Net AUM flows.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Business strategy is to favor organic growth over aggressive growth fueled by acquisitions.	Business strategy is aggressive and acquisition-led, or has led to either a declining market share or product offerings for which there is little investor appetite.
Market position is supported by a sizable level of AUM that is typically sourced through global operations.	Market position is hampered by a small level of AUM, relatively short record of asset management, and few repeat clients.
Market position is backed by a sizable sales force and an increasing variety of distribution channels. Sales are high, stable, or growing.	Sales force is small and most AUM comes through a handful of distribution channels where the firm's market penetration is low.
Investment performance consistently outperforms its investment benchmarks or the investment performance of its peers.	Investment performance consistently underperforms its investment benchmarks and investment performance is weak compared with peers.
There is sustained growth in AUM and positive year-on-year net AUM flows.	AUM is declining because net AUM flows have been negative for an extended period in most of the firm's asset classes, or net AUM flows have been negative in the asset manager's key or largest funds and the outward flows were not reinvested in profitable alternative funds run by the asset manager.

Market position: Our assessment of market position depends on:

- The absolute level of an asset manager's AUM;
- Its market share in different geographies and products;
- Its brand reputation and record of managing AUM; and
- Its distribution capabilities.

In our analysis of traditional asset managers, we consider the level of AUM to be small if it is below $50 billion, midsize if it is $50 billion-$250 billion, and sizable if it is $250 billion-$500 billion (or equivalent amounts in other currency). We classify a traditional asset manager as global if it has more than $500 billion in AUM, particularly if its assets are geographically diverse. Alternative asset managers are typically much smaller and therefore we adjust our scale and AUM ranges when assessing market position. In addition, although their lower levels of AUM could be a weakness, many alternative asset managers offset it by structuring their funds in a way that locks up the assets for multiple years.

Investment performance: We examine investment performance, based on benchmarks (including its peer group) or indices, over three and five years.

Investment performance: asset managers

Performance relative to benchmark/peers	Typical characteristics
Positive	More than 70% of AUM performs in the top two quartiles over three or five years, or 70% or more of AUM outperforms the relevant three- and five-year benchmarks or indices.
Neutral	AUM performance is neither positive nor negative.
Negative	30% or more of AUM is in the bottom quartile over three or five years, or 40% of AUM or more underperforms the relevant three- or five-year benchmarks or indices.

Net AUM flows: Net AUM flows are very important to the competitive advantage assessment because they are a tangible metric of the effectiveness of an asset manager's business strategy, market position, and investment performance. We measure net AUM flows (defined as gross inflows minus redemptions and distributions plus or minus market impact) over one, three, and five years on an aggregate basis and by asset class and by channel. In our view, net AUM flows strengthen an asset manager's competitive advantage when it experiences positive net sales (that is, new investment exceeds redemptions). When outflows exceed new investments--that is, the asset manager experiences net redemptions over a period of three years--we see that as a weakness. During a year of very adverse industry conditions, like 2008, we could view asset managers that achieve a quicker recovery or turnaround relative to peers favorably in our competitive advantage assessment.

For alternative asset managers, we would not view fund distributions as negatively as we would view redemptions because fund distributions typically reflect 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

We assess scale, scope, and diversity for an asset manager based on:

- AUM by asset class;
- AUM by distribution channel or investor base;
- AUM by geography;
- Variety of funds and strategies; and
- Revenue diversification by business line.

The pursuit of diversification can expose an asset manager to significant risks. To enter new markets and launch new products successfully, the asset manager will require adequate staffing and infrastructure, as well as strong expertise in the new area.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Robust and active diversification of AUM by asset class, distribution channel, geography, investor base, and strategies or funds offered.	AUM is concentrated in terms of asset class, geography, investor base, or number of strategies or funds offered.
Absence of reliance on a particular customer, product, or fund, or on a group of a few customers, products, or funds.	Reliance on a particular customer or market or on a group of customers or end markets.
Ability to expand its scale or diversify its AUM in the next 12-18 months.	Inability to expand its scale or diversify its AUM in the next 12-18 months.
Other lines of business, in addition to asset management, in aggregate contribute more than 10% to total revenue in areas where management has adequate experience and the required skill set.	Diversification into business lines where management does not possess the required expertise.

AUM by asset class: For asset managers, we consider the proportion of AUM investments across the various asset classes, and the variety of investment styles applied within each asset class. For a traditional asset manager, we look at equity; fixed income; money market; and alternative assets such as private equity, credit, or hedge funds; for an alternative asset manager, we consider private equity; debt (credit or hedge fund) assets, including both public and private debt; and alternative asset classes, such as real estate and infrastructure. Any concentration of invested AUM exceeding 80% in a single asset class would weigh on our assessment of scale, scope, and diversity. Our assessment is stronger where the asset manager has made use of different investment styles within each asset class, according to the volatility of the product. For example, an asset manager can achieve a well-diversified product mix within an asset class by balancing:

- Equity AUM between growth and value stocks; or
- Fixed-income AUM across governments, corporate bonds, and structured finance.

For credit-focused asset managers, AUM may be well-diversified across distressed, mezzanine, and senior debt.

AUM by distribution channel/investor base: Another means of reducing risk is by investing through different distribution channels or having a wider investor base.

In assessing this element, we consider:

- The proportion of AUM distributed through retail and institutional clients;
- AUM by top 10 retail distribution intermediaries (including 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 funds); and
- Revenue contribution of the top three and top 10 clients (mostly institutional clients).

Generally, we see an investor base that includes retail and institutional investors as offering a more diverse revenue stream. Asset managers that focus largely or solely on the management and sales of retail mutual funds have a narrow investor base. They may mitigate this disadvantage by selling their mutual funds through a variety of distribution channels. This implies a well-established and well-diversified network of external sales people at national and regional brokerage firms, banks, insurance companies, and financial planning firms.

Stronger scale, scope, and diversity assessments for traditional asset managers typically reflect balanced exposure to retail and institutional investors, as well as to a diversity of retail intermediaries. A significant concentration in either may be considered a weakness. For alternative asset managers that typically invest on behalf of institutional clients, we focus more on the diversity or concentration of the institutional investor base.

AUM by geography: By investing AUM in different geographies, an asset manager can better protect itself against country-specific economic forces. For instance, if the U.S. stock market plummets, an asset manager with more than 90% of its AUM invested in that country could see an increase in redemptions as investors seek to exit the U.S. market. If the manager offers a choice of funds focused on different regions, investors may instead reallocate fund investments to funds managed by the same asset manager, but targeting other markets.

Variety of funds and strategies: We view concentration as detrimental for scale, scope, and diversity. Situations that we would weigh negatively include an asset manager where one fund or strategy represents more than 30% of its AUM or revenue or where the top three funds or strategies represent more than 50% of the AUM or of revenue. For this measure, we focus on revenue derived from asset management fees (as opposed to investment income or revenue derived from other business lines). Conversely, asset managers that have a large variety of funds/strategies without concentrations in any one investment style or product demonstrate stronger scale, scope, and diversity.

We also consider the life cycle of the funds, especially for alternative asset managers that have finite-life funds. An alternative asset manager whose funds are coming close to the end of funds' lives (typically 10-12 years) and for whom we expect a significant portion of AUM to trail off over the coming one to three years, would be in a weaker position, in our view.

Revenue diversification by business line: Although asset managers may already demonstrate strong diversification solely through their core competency--the asset management business--some have expanded into related lines of businesses which may enhance their position. Examples include brokerage or securities firm businesses; custody services; or advisory businesses that bring in fees, such as merger and acquisition advisory services.

Profitability

We measure profitability using adjusted EBITDA margin.

Asset managers generally derive revenue from three sources:

- Fee-related earnings: In most cases, these are contractual and recurring. We consider them high in quality as they are the most predictable source of revenue, in our view. Fee-related earnings include management fees, transaction fees, advisory fees, and interest income; they may also include a portion of dividend income.
- Performance fees: These are based on the performance of the funds under management and are typically subject to a hurdle rate. They are often volatile over an economic cycle, but are not negative.
- Investment income: This may include a portion of dividend income, but largely consists of principal gains (or losses) from investments made in funds alongside third-party investors.

Generally, we calculate profitability ratios based on a three-year average rather than five as for most corporate sectors: the previous year's results; our current-year estimate, which incorporates any reported year-to-date results and our forecast 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 we lack visibility regarding top-line revenue. Management fees are largely based on AUM or, in some cases, commitments from investors. Like stock prices, these cannot be forecasted with a high degree of accuracy. Similarly, it is hard to predict whether and when an alternative asset manager may receive a performance fee, as this occurs only after their investment performance exceeds a certain hurdle rate. Our forecasts for realized performance fees consider the asset manager's on-balance-sheet net accrued performance fees. We view these as a good indicator of the potential performance fees that may be realized in future periods. Our forward-looking estimates incorporate upcoming debt maturities, as well as any expected debt issuance or refinancing.

When calculating the EBITDA margin, we may adjust the EBITDA measure to account for the volatility of investment income or performance fees. Income from management fees is more stable than that from investments or performance fees, which depend on the asset manager achieving positive investment returns above a hurdle rate. To account for that, we apply a haircut of at least 50% to the past five-year average realized performance fees and realized investment income, if these revenue sources represent more than 10% of the five-year average total revenue. If we expect these revenue streams to be significantly impaired for an extended period (at least three to five years), we could apply a haircut of up to 100% in our adjusted EBITDA calculation. As few traditional asset managers reach the 10% threshold because they do not generally receive performance fees, the haircut is more likely to be applied to alternative asset managers. Finally, to calculate the ratio, if we make adjustments to EBITDA (the numerator) related to realized performance fees and investment income, we make similar adjustments to revenue (the denominator).

We include both incentive fees and carried interest when calculating performance fees. In our view, these two sources of income exhibit a comparable level of volatility and should be given the same treatment. We exclude the unrealized portion of net performance fees and net investment income from our calculation of adjusted EBITDA because we consider a firm's ability to realize the cash flow benefit of unrealized revenue to be less certain, and it is difficult to predict the timing and amount that may be received. Our adjusted EBITDA also uses performance fees and investment income net of related compensation expense.

Carried interest (carry) is the percentage of a private fund's investment profits that a fund manager receives, and is primarily used in private equity strategies. Incentive fees are a form of performance fee typically related to funds where the underlying assets generate a coupon, for example, mezzanine debt mostly used in hedge fund strategies.

Where an asset manager has not provided the split between realized and unrealized performance fees and investment income, we calculate all performance fees and investment income as a percentage of total revenue, on average over the past five years. If this percentage is 10% or less, no haircut applies. Where it exceeds 10%, we make assumptions to estimate the proportion that is realized, and use that figure to apply our haircut.

Financial Risk Profile

Core ratios

Our preferred ratio to determine the cash flow/leverage assessment for an asset manager is debt to adjusted EBITDA as per our corporate methodology, and we apply the adjustments for realized performance fees and realized investment income described in the profitability section above.

However, we use debt to adjusted total equity for:

- Asset managers that operate a hybrid model that emphasizes investing their own funds' permanent capital as debt or equity investments in underlying portfolio companies, as well as managing third-party assets to generate management and performance fees; and
- Asset managers that 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, solely focusing on cash flow/leverage would give us an incomplete picture of financial risk.

Adjusted total equity is calculated as reported equity less goodwill, intangible assets, and unrealized portfolio appreciation or depreciation. We exclude any equity investments in finance companies or equity in structured vehicles (such as collateralized loan obligations and collateralized debt obligations) managed by the firm because these investments amplify leverage.

Asset managers: 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: Typically, we emphasize forward-looking estimates more than historical ratios in our analysis, weighting the previous, current, and next fiscal forecast years at 20%, 40%, and 40%, respectively.

That said, the length of the time series applied depends on the company's relative credit risk and other qualitative factors. We may adjust our weighting of the time series if we consider a transformational event has occurred (see "Time horizon and ratio calculation" in our corporate methodology).

Modifiers

Capital structure

In analyzing asset managers' capital structure, we add an assessment of the diversity of the capital structure to the four subfactors described in our corporate methodology. We view diversity of the capital structure as a tier one risk subfactor, which we assess as neutral or negative. We determine the preliminary capital structure assessment using the table below.

Asset managers: assessing preliminary capital structure

Assessment	Subfactor assessment
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.

Diversity of the capital structure

To assess diversity of the capital structure, we evaluate how debt and equity are combined to form the company's capital and the degree of diversity within each of these two components. For debt, the key considerations are how many different debt sources the company has, its access to different bank lines, and the number of banks providing those lines. For equity, we consider whether the company is publicly traded and whether it can raise funds from public markets, as well as whether its equity includes any hybrid securities, such as preferred equity, in addition to common equity.

Confidence sensitivity at asset managers is somewhat higher than at nonfinancial corporate firms, which may make them more susceptible to a rapid reduction in funding flexibility under adverse market or economic conditions. We therefore view access to public equity markets as favorable for asset managers. In addition, reliance on one or a few financial institutions to raise debt increases an asset manager's exposure to an economic downturn. We view diversity of capital structure as negative if a company is reliant on a single source (such as one bank) to raise debt and is privately owned, with limited access to additional equity.

Investments

As described in table 22 of our corporate methodology, our assessment of investments may be used to adjust our preliminary assessment of capital structure. In the case of asset managers, investments are classified as neutral or positive.

Sizable investments are generally positive for our assessment of the investments subfactor. We define investments as sizable if they exceed outstanding gross funded debt (excluding operating leases or the unfunded pension liability adjustment) by at least 50%. This level allows for a liquidity discount, should the investments need to be liquidated. Investments may include general partnership or seed investments in underlying funds, direct investments to portfolio companies, or nonstrategic financial investments.

We only assess the investments subfactor as positive if:

- The asset manager has investments that have been sizable, on average, for at least a year, and are expected to remain so for at least a year;
- We use debt to adjusted EBITDA as our core ratio, rather than debt to adjusted total equity;
- Financial risk profile is assessed as modest or weaker;
- We can ascribe an estimated value to the investments;
- The investments demonstrate strong evidence of being able to provide financial flexibility if they were to be monetized over an intermediate timeframe;
- The asset manager's financial policy, as it relates to financial discipline, suggests that it would use the proceeds to pay down debt, in the event of monetization; and
- These proceeds would be sufficient to improve existing cash flow/leverage ratios by at least one category.
- Exposure to interest rates, credit spreads, foreign exchange rates, and commodity and equity prices is small or hedged.

Section 2 | Financial Market Infrastructure

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Business Risk Profile

Competitive advantage

We assess competitive advantage in the financial market infrastructure sector based on:

- How critical the service provided is to the functioning of the markets it serves;
- The provider's reputation among its members and the cost of switching to another provider; and
- The provider's regulatory track record.

Some exchanges, clearinghouses, and central securities depositories (CSDs) enjoy special privileges or official monopoly protection in their home markets. We call these institutions "national champions" because of this special standing in the domestic financial markets. National champions typically have a competitive advantage assessment of strong.

A financial market infrastructure provider (FMI) that is not a national champion can still achieve a competitive advantage assessment of strong if it has both of the following characteristics:

- It is critical to the functioning of the financial markets or the national economy in its home jurisdiction; and
- It has a valuable brand and good reputation among its members based on providing fast, reliable, secure, and efficient services, and members would face high switching costs.

An FMI with a competitive advantage assessment of weak typically has all three of the following characteristics:

- It is not important to the functioning of the markets it serves;
- It has an inferior brand and poor reputation among its members based on providing subpar services and switching costs are low; and
- It has a mixed regulatory record.

Scale, scope, and diversity

We assess scale, scope, and diversity as outlined in table 9 in the corporate methodology, incorporating industry-specific measurements for volume and diversity as detailed below.

We focus our analysis on volume trends because these directly affect top-line revenue. We also consider the extent to which the FMI generates recurring revenue that is not volume-dependent, and may be relatively stable, irrespective of market conditions.

Sector description

Companies that derive more than half of their revenue from activities linked to the value chain of operating securities and derivatives markets or payment networks.

Subsectors	Typical CPGP
Financial market infrastructure companies (including exchanges, clearinghouse, and central securities depositories)	National industry and utilities

Other adjustments

To calculate a company's financial metrics, please refer to the sector-specific adjustments in "Corporate Methodology: Ratios And Adjustments."

Our sector-specific liquidity considerations are described in "Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers."

How we measure volume depends on the services that the FMI provides:

- For derivatives exchanges and clearinghouses, we consider open interest and the number of contracts traded and cleared;
- For stock exchanges, we evaluate the number and value of shares traded, as well as the total number of listed companies and their aggregate market capitalization;
- For CSDs, we assess the amount of assets under custody and the volume of settlement activity; and
- For payment networks, we use cash and payment volumes and the number of processed transactions, accounts, and cards.

Diversity offers an FMI more stable earnings across its principal business activities. We measure diversity based on three key variables: products, customers, and geography. For example, we consider the breadth and revenue mix of the instruments listed at derivative exchanges and the companies listed at stock exchanges. For stock exchanges, we also consider:

- The industries represented among the listed companies;
- The balance of domestic and foreign companies; and
- Whether specific members contribute a disproportionate amount of transaction volumes or revenue.

For payment networks, we also consider diversification in transaction volumes and revenue, by merchant name or industry sector.

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
A secure market position that is not threatened by competitors.	Vulnerable market position that faces a serious threat from competitors.
The financial benefits of large economies of scale.	Limited economies of scale.
Expanding volumes.	Shrinking volumes.
A revenue base well-diversified by listed (or cleared) instruments, membership (that is, customers), and geographic (domestic/foreign) markets served.	Concentrated revenue base by listed (or cleared) instruments, membership, or markets served.
Clearinghouses	
Lists and actively trades (clears) a large number of stocks in a cross section of uncorrelated industries.	Lists and trades a small number of stocks in a few correlated industries.

Operating efficiency

We assess operating efficiency as outlined in table 10 of the corporate methodology, incorporating one industry-specific characteristic.

Operating leverage in the FMI industry is typically high because a sizable proportion of revenue is transaction- or volume-based, and FMI companies require large upfront investments in processing platforms and telecommunications networks. At least initially, this means high fixed expenses.

Factors such as manufacturing processes and working capital management are not that relevant to our view of operating efficiency in FMI companies. Instead, our assessment focuses on economies of scale, expense structure, and technology. We monitor the overhead ratio (operating expenses to operating revenue) closely to evaluate the extent to which economies of scale are helping to lower overall costs. That said, we de-emphasize the overhead ratio when assessing independent member-owned FMI companies that have utility-like characteristics.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Overhead ratio well below industry average.	Overhead ratio well above industry average.
State-of-the art technology, with ample capacity to absorb expanding volumes.	Technology that has little or no capacity for expansion and has already been surpassed by superior technology of its competitors.

Profitability

Generally, we calculate profitability ratios using EBITDA margin based on a three-year average: the previous year's results; our current-year estimate, which incorporates any reported year-to-date results and our forecast for the remainder of the fiscal year; and our forecast for the next fiscal year.

However, for independent member-owned institutions that have "utility-like" characteristics and return most, if not all, excess revenue to members, we do not assess profitability based on ratios. This is because our profitability analysis is geared toward profit-maximizing institutions whose shares are typically publicly listed and traded. Therefore, our usual metrics are less meaningful in assessing profitability at these institutions, which serve their member-owners, rather than third-party shareholders. Although they tend to operate at or near the break-even point and have high overhead ratios, they often have considerable flexibility to adjust fees or reduce rebates in response to changing market conditions. In addition, they typically exhibit strong member support. Therefore, we assess profitability at most independent member-owned FMI companies as either strong or strong/adequate.

Financial Risk Profile

Our forward-looking estimates incorporate upcoming debt maturities and expected debt issuance or refinancing. We calculate our core and supplementary ratios based on a three-year weighted average: the previous year's results (20%), our current-year estimate (40%), and our forecast for the next fiscal year (40%).

That said, the length of the time series applied depends on the company's relative credit risk and other qualitative factors. We may adjust our weighting of the time series if we consider a transformational event has occurred (see "Time horizon and ratio calculation" in our corporate methodology).

In the case of an independent member-owned (utility-like) FMI with nominal adjusted debt, we may assign a minimal financial risk profile assessment where we consider that the outcome implied by the financial risk metrics would provide a misleading view of the financial risk of the entity.

Supplementary ratios

Our preferred supplementary ratios are adjusted EBITDA to interest, and FOCF to debt.

Volatility tables

We generally apply the low volatility table to FMI companies that exhibit or are expected to exhibit low levels of revenue volatility and operate in an industry and region that has a CICRA of at least '2'. If volatility is low and the CICRA is '3', we apply the medial volatility table.

If the CICRA is '4' or higher, we use the standard volatility table.

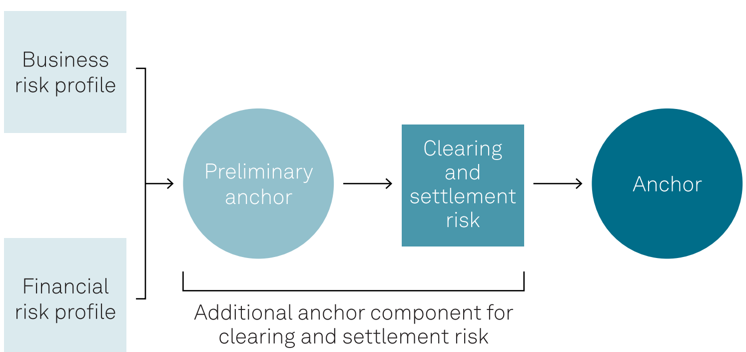
Anchor

If we consider clearing and settlement (C&S) risk to be relevant to an FMI company's creditworthiness, we incorporate it into our assessment of the anchor. This is the key difference between our approach of FMIs and the general approach in corporate methodology. That said, C&S risk is not relevant in certain cases, for example, where a clearinghouse has outsourced the clearing function to an independent third party, on an arms-length basis; or if the company is highly diversified and clearing plays only a minor role in its activities and earnings.

To incorporate our view of C&S risk, we first combine the financial and business risk profile assessments and derive the preliminary anchor. We then incorporate our assessment of C&S risk, to determine the anchor. In most cases, the anchor will be in line with the preliminary anchor or up to eight notches below it. Rarely, a clearinghouse or CSD may demonstrate sufficient strength to prompt us to apply one notch of uplift.

Note that when deriving the preliminary anchor for an independent, member-owned FMI company with characteristics similar to a utility, we may apply the weaker of the two anchor outcomes listed in table 3 of the corporate methodology if we do not consider that its business risk profile fully reflects its weaker EBITDA margins and overhead ratios.

Financial market infrastructure companies: Determining the anchor



Source: S&P Global Ratings.

Clearing and settlement risk

A clearinghouse's most important function is to reduce credit risk among its members by acting as guarantor or central counterparty (CCP) to trades executed in its market. Similarly, a CSD acts to reduce settlement risk among its members by completing trades on a delivery-versus-payment (DVP) basis, and by following other well-established risk management policies and procedures. In our opinion, the risk of a member default is the single largest risk that clearinghouses and many CSDs face.

C&S risk applies to clearinghouses, CSDs, and payment networks. Our assessment is based on the diversity and creditworthiness of the membership, as well as the institution's risk management policies and procedures, compared with international standards. It indicates:

- A clearinghouse's ability to protect itself from loss should a member default while it is acting as CCP or guarantor of a trade.
- 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 does not make payment, according to the terms of the transaction. Settlement failure may or may not be the result of a counterparty default.
- A payment network's ability to protect itself from loss should a member default when it is guaranteeing payments.

We assess C&S risk for clearinghouses and CSDs irrespective of whether they are independent entities or operate as subsidiaries or divisions of larger organizations.

Membership: The first line of defense against clearing or settlement loss is the creditworthiness and diversity of the institution's membership. High admission standards are a positive. In measuring the diversity of the membership, we consider the number of members less important than their relative contribution to the FMI company's aggregate risk exposure. For a clearinghouse, we evaluate creditworthiness using a weighted average of the creditworthiness of members, weighted by their initial margin requirements.

We generally assess as strong a membership group that is highly diversified, with a weighted average creditworthiness of 'A' or stronger. A concentrated membership group that has a weighted average creditworthiness weaker than 'BBB-' would generally be classified as weak. Adequate falls in between.

FMIs typically monitor the financial health of their members closely. We would expect an FMI company's risk department to:

- Review the financial status of each member;
- Surveil members' trading activities and clearing risk exposures on a near-real-time basis; and
- Generate risk exposure reports that are disseminated to a management team that has the authority to take appropriate action quickly if risk exposures become too large or breach pre-established limits.

If we see material deficiencies in an FMI company's ongoing membership surveillance, then we would assess its membership as weak.

Risk management policies and procedures: Clearinghouses and CSDs are subject to the standards laid out 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 therefore assess their risk management policies and procedures against these standards, using the information provided by the institution or official sources. Our assessment is based on the extent to which it observes the relevant PFMI standards, the most important of which are those covering credit risk (PFMI principle no. 4), collateral (no. 5), margin (no. 6), liquidity (no. 7), and business risk (no. 15).

We assess risk management policies and procedures at clearinghouses and CSDs as follows:

- Strong, if they greatly exceed those of the relevant standards;
- Adequate, if they fully or broadly observe the relevant standards;
- Less than adequate, if they partly observe the relevant standards, or
- Weak, if they do not observe the relevant standards.

Typically, FMIs that are not traditional clearinghouses or CSDs, such as card payment networks, are not subject to the PFMI standards. For these companies, we instead consider whether they maintain:

- 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.

Risk management policies and procedures at payment networks is assessed as adequate if they meet these targets. We assign an assessment of less than adequate or weak if they underperform.

Impact of C&S risk: We combine our assessments of membership and risk management policies and procedures to gain a preliminary understanding of how C&S risk may affect the preliminary anchor (see table below). We then review the FMI to identify any serious deficiencies in specific components of its financial safeguard package, or any identifiable weaknesses in the banking system that could inhibit its ability to meet its obligations in a timely manner. If we identify additional risks, it will negatively affect how our C&S assessment affects the preliminary anchor.

Initial impact of C&S risk on the preliminary anchor

	Risk management policies and procedures			
Membership	**Strong**	**Adequate**	**Less than adequate**	**Weak**
Strong	1	0	-1	-3
Adequate	0	0	-2	-4
Weak	-1	-2	-3	-5

Numbers indicate the notches between the preliminary and final anchor, based on C&S risk. Additional risks may increase the downward impact by up to three more notches. C&S--Clearing and settlement.

The final stage of our assessment of C&S risks is to look for deficiencies in areas we did not cover when assessing membership and risk management policies and procedures.

For example, a clearinghouse will have a financial safeguard package, comprising readily available liquid resources that could be used if necessary to fulfill its clearing obligations. The package is most often used to cover losses stemming from a member default. We analyze a clearinghouse's financial safeguard package and its associated default waterfall in detail.

The most common components of the financial safeguard package are:

- The clearinghouse's own liquid capital,
- The margin collected from members,
- The guarantee funds, and
- Its assessment powers.

The guarantee fund and assessment powers enable the clearinghouse to mutualize the risk of default across its members. We view this as positive because mutualization of risk gives the members an incentive to police each other's trading activities. Their own contributions to the guarantee fund will be at risk if another member defaults, and they will face calls to replenish the guarantee fund, should it be tapped. If a clearinghouse were to rely entirely on its own capital to cover member defaults, with no mutualization of risk, we would consider this a negative factor.

We assess the various components of the financial safeguard package to understand the degree of protection that each provides to the clearinghouse. That said, we see the overall protection afforded by the package as more important than its individual components. Although our assessment of the components is typically more qualitative than quantitative, we consider certain practices to be a deficiency at any clearinghouse. In addition, we compare practices with those elsewhere in the market. There is no optimal structure, in our view. Very strong guarantee fund contributions can offset weakness in the margin calculation--some clearinghouses rely more on individual member margin requirements, while others rely more on the mutualized guarantee fund.

Some of the key deficiencies we may identify in the financial safeguard package 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 that are outsized, or lead to sustained poor backtesting performance;
- 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 clearinghouse's own resources, such as its equity, within the default waterfall, as opposed to member collateral posting or default funds;
- Insufficient back-up lines or other sources of settlement liquidity; and
- History of losses stemming from member defaults.

For CSDs, we consider whether:

- There are identifiable weaknesses in the national banking system that could inhibit it from meeting its settlement obligations in a timely manner;
- Collateral management practices, where relevant, appear imprudent or expose 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.

If none of these apply, we would not modify the initial assessment of C&S risks shown in the table above.

Modifiers

Capital structure

A few FMIs are prudentially regulated by the national banking regulators. To a limited extent, these FMIs conduct banking operations, such as deposit-taking or granting credit facilities, linked to their core FMI business. For these companies, we assess the capital structure by calculating the risk-adjusted capital (RAC) ratio, as described in our risk-adjusted capital framework methodology. Based on the RAC ratio, we may then modify the anchor as shown in the table below.

Modifications to the anchor, based on capital structure

RAC ratio %	Notches
>15	2
10-15	1
7.0-9.9	0
5.0-6.9	(1)
<5	(2) or more

RAC--Risk-adjusted capital.

That said, an FMI that has an anchor in the 'a' category may only receive one notch of uplift and an FMI that has an anchor of 'aa-' or above will not receive any uplift because we would expect it to have strong capitalization.

Section 3 | Financial Services Finance Companies

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Financial services finance companies (FSFCs) include:

- Consumer finance companies, which provide small-ticket loans, check cashing services, and other related consumer services, generally to consumers who have little or no access to traditional commercial banks.
- Originators and servicers, which originate and service loans such as residential or commercial mortgages and student loans, but do not retain the investment in these loans on their balance sheets, and are thus exposed to minimal credit risk.
- Auto fleet services companies, which provide services such as vehicle inventory management, fuel monitoring, vehicle maintenance, and fuel card payments solutions.
- Financial and professional real estate service providers, which offer services such as investment management, property services, brokerage, and research.
- Money transaction processors, which facilitate transactions such as money transfers and bill payments.
- Debt collectors and servicers, which invest in distressed debt portfolios, or service nonperforming loans and receivables for third parties.
- Other FSFCs provide a variety of commercial and consumer finance products.

The primary risks that FSFCs face differ from those faced by the nonbank financial institutions (NBFI) we rate under our financial institutions rating methodology. Specifically, we apply our financial institutions rating methodology where we consider that a company's greatest credit risks relate to asset quality, funding and liquidity, and tangible capital. For example, a NBFI is more likely to default because of a weakness in its balance sheet than because of an inability to service debt obligations from operating cash flow.

We apply the corporate methodology to FSFCs because we consider that their primary risks relate to their ability to generate cash flow, rather than to the amount of capital they may need to withstand credit losses. Although FSFCs may be prone to similar risks as NBFIs, these risks have a lesser effect on our view of creditworthiness. As a result, we incorporate an analysis of funding, credit quality, and tangible capital, but emphasize our analysis of cash flow, relative to debt and interest expense, more than we would in rating a NBFI.

Sector description

Companies that derive more than half of their revenue by offering financial services to commercial or consumer clients, and where the risk to their cash flow generation is greater than the risk to their capital buffers.

Subsectors	Typical CPGP
Financial services finance companies (including consumer finance companies, originators and servicers, auto-fleet services companies, real-estate services, distressed debt purchasers, and money transaction processors)	Services and product focus

Business Risk Profile

Our assessment of the competitive position of a FSFC uses the corporate framework and includes an additional factor: regulatory and legislative risk.

Competitive advantage

We assess a FSFC's competitive advantage based on its:

- Strategy;
- Brand equity, reputation, and marketing; and
- Market position.

Strategy: We analyze whether the company's strategy is consistent with its organizational capabilities and marketplace conditions. We consider the degree of success in establishing leadership positions in the markets in which it competes, and in protecting or growing its market share in a profitable manner without materially altering the company's risk profile.

Brand equity, reputation, and marketing: We consider a company's brand strength as well as market share by key markets and regions, if available. We also look for trends and consider the attractiveness of the key markets and regions in which a company operates. Brands commanding a clear price premium demonstrate strong brand equity and reputation. Brand strength is typically confirmed with market share gains, above-average profitability, and premium pricing. Brand equity can also come in the form of customer and supplier relationships when pricing is more competitive.

Market position: We assess a company's market share by business line (when data are available), pricing power, customer and supplier retention, quality of business and near-term prospects, ability to weather adversity, and business track record.

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Business strategy has articulated long-term plans and has been successful in achieving goals.	Business strategy has been reactive, poorly defined, and has shown mixed results in achieving plans.
Business strategy supports market share, and is consistent with organizational capabilities and market conditions, which mitigate risks relative to competitors.	Business strategy is inconsistent or not well adapted to market conditions, which increases risks relative to competitors.
Competitors find it difficult to achieve a comparable low-cost position or to provide a comparable product or service offering.	A lack of differentiation, poor product or service quality, and ease of migration to a new provider increases vulnerability to competitors.
A superior record of product or service quality leads to strong brand equity and reputation.	Poor brand equity and reputation.
Favorable market position thanks to barriers to entry that effectively reduce, or even eliminate, the threat of new market entrants.	Unfavorable market position and a lack of barriers to entry that makes the company vulnerable to competitors' actions.

Scale, scope, and diversity

We assess a FSFC's scale, scope, and diversity based on its:

- Diversity of product or service range;
- Geographic diversity; and
- Volumes, size of markets and revenue, and market shares.

Diversity of product or service range: We consider the revenue and profitability mix from the FSFC's various business sources. We assess diversity through a variety of measures, which may include customer, geographic, supplier, end market, and product or service, depending on the information available.

Volumes, size of markets and revenue, and market shares: We consider a company's reliance on a particular customer or end market, or on a group of customers or end markets. In our view, participation in a variety of attractive target markets generally results in greater stability during market downturns. As such, we consider the size and diversity of a company's revenue base relative to close competitors. The overall size of a company's target markets also influences our assessment of scale, which is especially important for a company whose competitive strategy is to be the lowest-cost provider of a service (as opposed to a premium-price service provider).

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Wide variety of products or service offerings.	Limited range of products or service offerings, which are sometimes correlated; and limited prospects for expansion or diversification.
Broad geographic diversification.	Narrow geographic focus.
No reliance on a particular customer or end market, or on a limited number of customers or end markets.	Reliance on a particular customer or end market, or on a limited number of customers or end markets.
No reliance on a particular supplier, business partner, or small group of partners.	Reliance on a business partner or a small group of partners, which may cause volume declines if prices increase.

Operating efficiency

We assess an FSFC's operating efficiency based on its:

- Cost structure;
- Ability to withstand lower demand; and
- Reinvestment needs.

Cost structure and ability to withstand lower demand: We consider a company's ability to control costs without hurting product or service quality. Flexible cost structures limit pressures on operating margins during periods of lower demand or industry downturns. Companies with scalable business models that generate consistent sales growth using a fixed expense base often exhibit greater operating efficiency.

Reinvestment needs: We consider the level of reinvestment necessary to maintain existing operations. Maintenance capex, as a proportion of revenue, is a common metric we use in our assessment. A company's perceived historical over- or under-investment in its operations can also influence our assessment of reinvestment needs.

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Superior cost position permits above-average profitability, even if capacity utilization or demand are below ideal levels.	Inferior cost position relative to peers, possibly because of inefficient facilities or processes.
Ability to adjust expenses in response to changes in demand without damaging product or service quality.	Limited capability to manage fixed costs or to withstand lower demand levels.
Solid investment in technology and infrastructure that supports revenue and profit growth prospects.	Lack of investment in technology and infrastructure that leads to a higher cost structure and operations that are less efficient than peers.

Regulatory and legislative risk

Our analysis focuses on the credit implications of the regulations that apply to FSFCs. We do not consider that our assessment of this subfactor can have a positive impact on the overall competitive position. Therefore, we assess a company's exposure to regulatory or legislative risks as either (1) adequate, (2) weak, or (3) vulnerable. If the regulatory and legislative risk assessment is (3) vulnerable, we cap competitive position at vulnerable. If the regulatory and legislative risk is assessment is (2) weak, we cap competitive position at weak. Where an FSFC is not exposed to regulatory policies--existing or prospective--that could meaningfully constrain profitability, we assess its regulatory and legislative risk as adequate and no cap applies.

Regulators can affect the operating environment and profitability in a variety of ways. For example:

- Profitability may be constrained by rules that cap the interest rates that clients may be charged or limit the type or range of clients a finance company can target; or
- Compliance costs may rise if new regulatory reporting standards are imposed.

Regulatory and legislative risk: typical characteristics

Weak	Vulnerable
Subject to ongoing regulatory scrutiny, sometimes in a loosely regulated industry, and profitability could be constrained if new policies were to be implemented.	Subject to ongoing regulatory scrutiny, and profitability will likely be constrained if new policies are implemented.
Exposed to regulatory and legislative changes, but diversification by product or geography may partially mitigate the risks.	Exposed to regulatory and legislative changes, exacerbated by product or geographical concentration.
Government policy or regulation has constrained profitability or altered business conduct standards in the past.	Government policy or regulation has significantly constrained profitability or greatly affected business conduct standards in the past.

Profitability

FSFCs operate using a wide variety of business models, and revenue sources vary across the sector. Therefore, in some cases, we assess profitability relative to the company's direct peers within its subsector, rather than within the FSFC industry as a whole. In subsectors characterized by stable profits and a high volume of transactions, we may consider a company to have an average level of profitability, even if its EBITDA margins are low, relative to the wider industry.

Generally, we calculate profitability ratios for FSFC based on a three-year average: the previous year's results; our current-year estimate; and our forecast for the next fiscal year.

Financial Risk Profile

We generally calculate our core and supplementary ratios based on a three-year weighted average, rather than five years as in most corporate sectors, because it is often impractical to make projections for FSFC beyond the next fiscal period given the lack of visibility regarding top-line revenue. We generally weight the previous year's results (20%), our current-year estimate (40%), and our forecast for the next fiscal year (40%). That said, we may use other periods or weights depending on the company's relative credit risk and the occurrence of transformational events.

Adjustments to debt

When a company uses short-term funding to purchase high-quality liquid assets that expose it to minimal credit risk, we may adjust our debt measures by netting the value of the short-term liquid assets against the value of the debt in our ratio calculations. At the same time, we reclassify related interest expenses to operating expenses.

For example, we may net the debt against the assets where a U.S. mortgage company has originated a pool of loans that conform to a government-sponsored enterprise's (GSE) guidelines, and market practice indicates that the GSE is certain to purchase eligible loans within a short period. The netting recognizes that the credit risk incurred is minimal and of short duration. We apply a similar approach to the debt used to finance advances provided by mortgage servicers, if the advances have a first-priority lien against an entire pool of mortgaged properties and are supported by significant overcollateralization.

There are exceptions to this approach. When stressed market conditions or some other factor suggests that a GSE could stop purchasing assets or abruptly change its criteria--or if a warehouse provider has the option to require significant additional margin with little notice to the FSFC--we would not net the asset-specific funding against the assets funded by the debt. Similarly, we would not net debt against a mortgage servicer's advance if we expected the value of the residential mortgage-backed security to decline below the value of the collateral against which the FSFC has advanced money. In addition, a GSE may reject nonconforming assets, which would then return to the mortgage originator's balance sheet. If this occurred, we would stop netting their value against the asset-specific funding.

Supplementary ratios

We consider two supplementary ratios--EBITDA to interest expense and debt to tangible equity.

We generally use debt to tangible equity when assessing FSFCs that have positive tangible equity and a balance sheet containing a substantive amount of financial assets (see the table below). Tangible equity is defined as total equity, less goodwill and nonservicing intangibles. The ratio helps us see how the FSFC funds its business and how much cushion it has to sustain unexpected losses.

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

Modifiers

Capital structure

Our analysis of capital structure at FSFCs includes an assessment of the company's dependence on revolving, short-term, asset-specific funding. We consider asset-specific funding to be an additional tier 1 risk subfactor, as described in our corporate methodology, and classify it as neutral, negative, or very negative.

A company that depends on asset-specific funding to facilitate origination volume may be susceptible to the disruption caused by adverse economic environments. If asset-specific funding options become unavailable, the FSFC's funding choices and the confidence-sensitivity of its assets will directly affect its ability to maintain business volumes and meet its obligations. That said, we rate FSFCs that have large confidence-sensitive funding exposures under the financial institutions rating methodology because we consider them more susceptible to changes in asset credit quality and tangible capital.

We assess asset-specific funding by considering stability during times of stress, the diversity of counterparties, the type of collateral being pledged, and the maturity of the asset-specific funding sources. These sources include secured and unsecured warehouse lending facilities; repurchase agreements; asset-backed security transactions; and residential mortgage-backed security transactions.

An FSFC that we regard as having a neutral asset-specific funding assessment generally has limited or no reliance on asset-specific funding sources to support ongoing business operations.

An FSFC we regard as having a negative asset-specific funding assessment is typically characterized by one or more of the following:

- Reliance on asset-specific funding sources to support ongoing business operations.
- A high proportion of debt maturities within 12 months, or the maturities show a concentration within a single quarter.
- Reliance on a concentrated group of financial counterparties.

We typically assess this subfactor as negative when asset-specific funding is used to finance assets, and we net the debt against the assets as described above.

Where an FSFC has all three of the characteristics associated with a negative asset-specific funding assessment and one or more facilities are also subject to substantial margin call exposure, we assess this subfactor as very negative.

We determine the preliminary capital structure assessment using the table below, rather than table 21 in our corporate methodology. We may then adjust the initial assessment based on our analysis of the investment subfactor (see table 22 of the corporate methodology).

Preliminary capital structure assessment for FSFCs

Assessment	
Neutral	No Tier 1 subfactor is negative.
Negative	One Tier 1 subfactor is negative, and the Tier 2 subfactor is neutral.
Very negative	Two or more Tier 1 subfactors are negative; or one Tier 1 subfactor is negative and the Tier 2 subfactor is negative; or asset-specific funding is very negative.

Adjustments for auto fleet leasing companies

Because the leasing of auto fleets is capital-intensive and the assets show high depreciation and amortization, cash flow/leverage metrics based on EBITDA are of limited use in assessing creditworthiness. Therefore, while we consider auto fleet leasing companies to be FSFCs, we use the analytical approach described in our key credit factors article for the operating leasing industry to assess the following elements:

- Profitability,
- Cash flow/leverage,
- Capital structure,
- Financial policy, and
- Liquidity.

Adjustments for distressed debt purchasers

Distressed debt purchasers (DDPs) acquire defaulted receivables at high discounts and aim to collect as much as possible from the portfolios acquired. They may sell the debt portfolios at any time to boost liquidity. Revenue is typically recognized using an assumed purchase multiple or internal rate of return based on the estimated amount and timing of future cash collections. In practice, principal collections typically exceed the estimates used to report revenue. Therefore, we believe the accounting reported EBITDA treatment typically underestimates the debt repayment capacity of these companies. Such a treatment will not reflect the flexibility provided by the principal collections or portfolio amortization, which can be used to support the timely repayment of debt obligations.

In our analysis, we typically adjust reported metrics to add an amount equal to 50% of collections applied to principal back to revenue and EBITDA. This enables us to capture that the cash flow associated with collections on distressed receivables could, in part, be used for debt repayment. It also recognizes the extra flexibility provided by the principal collected and the ability to resell portfolios in the market, and acknowledges that DDPs typically use at least part of this cash flow to replenish their income-generating asset base and maintain profitability over the cycle.

Although DDPs can choose when to buy defaulted receivables, a lack of investment can significantly deplete their future collections. We rate companies on the assumption that they will maintain their current activity level--that is, we do not assume a rapid contraction in activities or a run-off scenario. Therefore, although industry practice for DDPs is to present cash-adjusted EBITDA metrics, we do not add back 100% of collections.

We calculate our supplementary ratios (debt to tangible equity and EBITDA interest coverage) applying these adjustments. In addition, we use a supplementary ratio of FOCF to debt to analyze distressed debt purchasers because FOCF is a proxy for the cash that a company generates from its core operations and has available for debt repayment after investments in new portfolios are made. We consider this information critical when rating companies that have aggressive capital structures and high investment needs. When calculating FOCF, we include the full amount of principal collected as well as investments in new portfolios. To assess a company's investment needs, we use either the amount necessary to maintain existing operations, or our own estimate of the future cash needed to purchase new portfolios.

Furthermore, for DDPs we do not typically deduct accessible cash and liquid investments from debt because we view these funds as transitory and expect them to be allocated to new portfolio investments.

Appendix 1 | Abbreviated Terms

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The following acronyms and abbreviations are provided for reference.

Acronyms and abbreviations

Short form	Expanded term
Capex	Capital expenditure
CFO	Cash flow from operations
CICRA	Corporate industry and country risk assessment
CPGP	Competitive position group profile
DCF	Discretionary cash flow
EBIT	Earnings before interest and tax
EBITDA	Earnings before interest, taxes, depreciation, amortization
EBITDAR	Earnings before interest, taxes, depreciation, amortization, and rent
FFO	Funds from operations
FOCF	Free operating cash flow
GAAP	Generally accepted accounting principles
IFRS	International Financial Reporting Standards
PIK	Payment-in-kind
R&D	Research and development
ROC	Return on capital
ROE	Return on equity
SACP	Stand-alone credit profile
SER	Standard error of the regression
SG&A	Selling, general, and administrative

Appendix 2 | Profitability

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We typically use the metrics shown below to calculate volatility of profitability in each sector.

Volatility of profitability

EBITDA margin	Nominal EBITDA	Return on capital
Asset managers	Aerospace and defense	Midstream energy
Auto and commercial vehicle manufacturing	Agribusiness, commodity foods, and agricultural cooperatives	Oil and gas exploration and production
Auto suppliers	Building materials*	Refining and marketing
Health care equipment	Business and consumer services	Transportation cyclical
Health care services	Capital goods	
Homebuilders and real estate developers	Commodity chemicals	
Financial market infrastructure	Consumer durables	
Financial services finance companies	Consumer staples and branded nondurables	
Media and entertainment	Containers and packaging	
Oilfield services and equipment	Contract drilling	
Pharmaceuticals	Engineering and construction	
Railroads, package express, and logistics	Environmental services	
Regulated utilities	Forest and paper products	
Retail and restaurants	Leisure and sports	
Technology hardware and semiconductors	Metals production and processing	
Technology software and services	Mining	
Telecommunications	Specialty chemicals	
Unregulated power and gas	Transportation infrastructure	

*For companies in the building materials sector that produce finished goods, we would use EBITDA margin.

Appendix 3 | Sector And Industry Variables

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The sector and industry variables and associated details in this appendix are expected to be periodically updated and republished, as market conditions warrant.

Profitability thresholds

We use the thresholds in the following three tables to assess the level of profitability of entities in most of the sectors covered by our corporate methodology. Two sectors--homebuilders and real estate developers and regulated utilities--are excluded from these tables; we do not set fixed ranges to assess the level of profitability for these sectors. Instead, we emphasize comparisons with similarly constituted peers that use the same accounting basis or where the regulatory framework is comparable.

Thresholds for assessing the level of profitability: EBITDA margin

(%)	Below average	Average	Above average
Aerospace and defense	<10	10-18	>18
Agribusiness, commodity foods, and agricultural cooperatives			
Grain processors, merchandisers, and crop input wholesalers	<3	3-5	>5
Commodity food ingredient companies	<12	12-15	>15
Meat and other nondairy animal protein processors	<5	5-10	>10
Sugarcane crushers and processors	<32	32-42	>42
Marketing and supply cooperatives	<3	3-5	>5
Cooperatives that sell branded products	<10	10-20	>20
Auto and commercial vehicle manufacturing	<6	6-10	>10
Auto suppliers	<9	9-15	>15
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

(%)	Below average	Average	Above average
Consumer durables			
Diversified durables	<8	8-14	>14
Home appliances	<6	6-9	>9
Consumer staples and branded nondurables			
Apparel	<10	10-15	>15
Nonalcoholic beverages and packaged foods	<10	10-20	>20
Personal care and household products	<15	15-25	>25
Tobacco and alcoholic beverage	<15	15-30	>30
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
Health care equipment	<22	22-35	>35
Health care services	<15	15-25	>25
Leisure and sports	<20	20-30	>30
Midstream energy	<15	15-65	>65
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 program production	<12	>12	-
Local/cable TV and streaming	<20	20-35	>35
Marketing services/miscellaneous	<15	15-30	>30
Cinema chains	<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
Pharmaceuticals			
Branded	<30	30-40	>40
Generic/contract development and manufacturing organizations	<20	20-30	>30
Specialty chemicals	<12	12-20	>20

(%)	Below average	Average	Above average
Railroads, package express and logistics			
Railroads †	<18	18-36	>36
Package express †	<4	4-7	>7
Logistics †	<4	4-7	>7
Retail and restaurants			
Department stores and specialty retailers	<10	10-16	>16
Discounter/food retailers/drugstores/convenience 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
Telecommunications			
Telecommunications	<25	25-40	>40
Cable	<30	30-40	>40
Direct-to-home	<20	20-30	>30
Towers/fixed-satellite service/mobile soft switch	<45	45-60	>60
Data centers	<35	35-50	>50
Transportation cyclical			
Shipping	<10	10-30	>30
Trucking	<8	8-15	>15
Airlines	<8	8-15	>15
Transportation infrastructure	<30	30-55	>55
Unregulated power and gas			
Unregulated power and gas	<15	15-30	>30
Retail supplier	<5	5-10	>10

(%)	Below average	Average	Above average
Financial services			
Asset managers	<20	20-35	>35
Financial market infrastructure companies	<43	43-66	>66
Financial services finance companies	<15	15-35	>35

*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. †Measured by EBIT margin.

Thresholds for assessing the level of profitability: return on capital

(%)	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
Leisure and sports	<6	6-11	>11
Midstream energy			
Low-risk midstream companies	<5	5-10	>10
All other midstream companies	<6	6-12	>12
Metals production and processing	<5	5-9	>9
Refining and marketing§	<10	10-20	>20
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
Telecommunications	<8	8-12	>12
Transportation cyclical	<4	4-10	>10
Unregulated power and gas			
Unregulated power and gas	<6	6-12	>12
Retail supplier	<6	6-12	>12

*For grain processors and merchandisers, we generally calculate return on capital based on a three-year average. §Under midcycle conditions.

Calibration for standard error of the regression (SER) by industry

Our view of volatility of profitability is informed by our industry-specific SER parameters, which we established based on seven years of data.

SER calibration by industry based on EBITDA

	Volatility of profitability assessment*					
(%)	**1**	**2**	**3**	**4**	**5**	**6**
Aerospace and defense	=<5	>5-11	>11-18	>18-30	>30-79	>79
Agribusiness, commodity foods, and agricultural cooperatives	=<8	>8-13	>13-16	>16-27	>27-45	>45
Auto and commercial vehicle manufacturing	=<11	>11-19	>19-23	>23-36	>36-55	>55
Auto suppliers	=<11	>11-15	>15-19	>19-27	>27-42	>42
Building materials	=<6	>6-9	>9-14	>14-20	>20-49	>49
Business and consumer services	=<6	>6-11	>11-17	>17-24	>24-48	>48
Capital goods	=<7	>7-11	>11-16	>16-25	>25-42	>42
Commodity chemicals	=<13	>13-24	>24-34	>34-40	>40-59	>59
Consumer durables	=<9	>9-15	>15-26	>26-32	>32-47	>47
Consumer staples and branded nondurables	=<4	>4-8	>8-14	>14-20	>20-37	>37
Containers and packaging	=<5	>5-9	>9-12	>12-17	>17-34	>34
Contract drilling	=<24	>24-28	>28-42	>42-53	>53-118	>118
Engineering and construction	=<3	>3-10	>10-16	>16-26	>26-45	>45
Environmental services	=<5	>5-10	>10-16	>16-18	>18-27	>27
Forest and paper products	=<13	>13-18	>18-25	>25-36	>36-61	>61
Health care equipment	=<6	>6-10	>10-15	>15-20	>20-34	>34
Health care services	=<5	>5-11	>11-18	>18-22	>22-40	>40
Homebuilders and real estate developers	=<11	>11-16	>16-23	>23-29	>29-73	>73
Leisure and sports	=<19	>19-27	>27-39	>39-66	>66-116	>116
Media and entertainment	=<8	>8-15	>15-20	>20-30	>30-60	>60
Metals production and processing	=<13	>13-27	>27-40	>40-55	>55-84	>84
Midstream energy	=<4	>4-7	>7-12	>12-16	>16-22	>22
Mining	=<14	>14-23	>23-30	>30-41	>41-57	>57
Oil and gas exploration and production	=<18	>18-24	>24-28	>28-36	>36-42	>42
Oilfield services and equipment	=<24	>24-28	>28-42	>42-53	>53-118	>118
Pharmaceuticals	=<5	>5-9	>9-14	>14-22	>22-35	>35
Railroad, package express, and logistics	=<5	>5-9	>9-14	>14-17	>17-26	>26
Refining and marketing	=<23	>23-36	>36-42	>42-54	>54-114	>114
Regulated utilities	=<3	>3-5	>5-7	>7-11	>11-20	>20
Retail and restaurants	=<6	>6-10	>10-15	>15-23	>23-42	>42
Specialty chemicals	=<6	>6-11	>11-15	>15-23	>23-34	>34
Technology hardware and semiconductors	=<10	>10-14	>14-19	>19-26	>26-47	>47
Technology software and services	=<6	>6-11	>11-16	>16-23	>23-43	>43
Telecommunications	=<3	>3-5	>5-8	>8-12	>12-27	>27

	Volatility of profitability assessment*					
Transportation cyclical	=<8	>8-15	>15-42	>42-58	>58-101	>101
Transportation infrastructure	=<6	>6-12	>12-22	>22-31	>31-55	>55
Unregulated power and gas	=<5	>5-8	>8-14	>14-18	>18-30	>30
Overall	=<5	>5-10	>10-16	>16-25	>25-48	>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. Data covers the seven years to December 2021.

SER calibration by industry based on EBITDA margin

	Volatility of profitability assessment*					
(%)	**1**	**2**	**3**	**4**	**5**	**6**
Aerospace and defense	=<4	>4-8	>8-14	>14-23	>23-82	>82
Agribusiness, commodity foods, and agricultural cooperatives	=<5	>5-9	>9-12	>12-18	>18-28	>28
Auto and commercial vehicle manufacturing	=<7	>7-13	>13-22	>22-29	>29-58	>58
Auto suppliers	=<6	>6-11	>11-14	>14-20	>20-32	>32
Building materials	=<4	>4-7	>7-9	>9-13	>13-23	>23
Business and consumer services	=<5	>5-7	>7-12	>12-18	>18-37	>37
Capital goods	=<4	>4-6	>6-11	>11-18	>18-38	>38
Commodity chemicals	=<10	>10-16	>16-22	>22-26	>26-39	>39
Consumer durables	=<7	>7-12	>12-15	>15-21	>21-41	>41
Consumer staples and branded nondurables	=<3	>3-5	>5-9	>9-15	>15-30	>30
Containers and packaging	=<3	>3-6	>6-9	>9-13	>13-25	>25
Contract drilling	=<9	>9-13	>13-21	>21-45	>45-113	>113
Engineering and construction	=<5	>5-9	>9-13	>13-20	>20-41	>41
Environmental services	=<4	>4-6	>6-11	>11-15	>15-20	>20
Forest and paper products	=<9	>9-13	>13-19	>19-22	>22-35	>35
Health care equipment	=<4	>4-7	>7-9	>9-14	>14-21	>21
Health care services	=<4	>4-7	>7-11	>11-16	>16-24	>24
Homebuilders and real estate developers	=<8	>8-12	>12-16	>16-22	>22-48	>48
Leisure and sports	=<10	>10-15	>15-29	>29-64	>64-309	>309
Media and entertainment	=<5	>5-9	>9-13	>13-21	>21-52	>52
Metals production and processing	=<11	>11-17	>17-26	>26-36	>36-53	>53
Midstream energy	=<2	>2-5	>5-11	>11-17	>17-29	>29
Mining	=<8	>8-14	>14-19	>19-25	>25-41	>41
Oil and gas exploration and production	=<6	>6-11	>11-13	>13-18	>18-28	>28
Oilfield services and equipment	=<9	>9-13	>13-21	>21-45	>45-113	>113
Pharmaceuticals	=<4	>4-7	>7-9	>9-13	>13-26	>26
Railroad, package express, and logistics	=<3	>3-5	>5-9	>9-14	>14-23	>23
Refining and marketing	=<18	>18-27	>27-33	>33-55	>55-104	>104
Regulated utilities	=<3	>3-5	>5-7	>7-10	>10-19	>19
Retail and restaurants	=<4	>4-7	>7-12	>12-18	>18-34	>34
Specialty chemicals	=<4	>4-8	>8-11	>11-15	>15-24	>24
Technology hardware and semiconductors	=<6	>6-8	>8-12	>12-17	>17-32	>32
Technology software and services	=<5	>5-8	>8-12	>12-18	>18-42	>42
Telecommunications	=<2	>2-3	>3-5	>5-7	>7-15	>15

	Volatility of profitability assessment*					
Transportation cyclical	=<6	>6-13	>13-40	>40-68	>68-158	>158
Transportation infrastructure	=<3	>3-6	>6-11	>11-21	>21-49	>49
Unregulated power and gas	=<4	>4-9	>9-13	>13-19	>19-32	>32
Overall	=<3	>3-7	>7-11	>11-17	>17-38	>38

*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. Data covers the seven years to December 2021.

SER calibration by industry based on return on capital

	Volatility of profitability assessment*					
(%)	**1**	**2**	**3**	**4**	**5**	**6**
Aerospace and defense	=<10	>10-22	>22-29	>29-63	>63-198	>198
Agribusiness, commodity foods, and agricultural cooperatives	=<13	>13-18	>18-23	>23-32	>32-72	>72
Auto and commercial vehicle manufacturing	=<14	>14-25	>25-40	>40-67	>67-474	>474
Auto suppliers	=<16	>16-25	>25-35	>35-56	>56-95	>95
Building materials	=<9	>9-18	>18-27	>27-39	>39-85	>85
Business and consumer services	=<12	>12-26	>26-42	>42-77	>77-260	>260
Capital goods	=<10	>10-16	>16-33	>33-71	>71-225	>225
Commodity chemicals	=<23	>23-35	>35-49	>49-61	>61-111	>111
Consumer durables	=<19	>19-32	>32-48	>48-61	>61-150	>150
Consumer staples and branded nondurables	=<8	>8-14	>14-24	>24-42	>42-103	>103
Containers and packaging	=<11	>11-17	>17-26	>26-46	>46-198	>198
Contract drilling	=<53	>53-83	>83-140	>140-276	>276-769	>769
Engineering and construction	=<6	>6-18	>18-29	>29-43	>43-152	>152
Environmental services	=<12	>12-18	>18-31	>31-50	>50-135	>135
Forest and paper products	=<23	>23-43	>43-49	>49-52	>52-101	>101
Health care equipment	=<11	>11-19	>19-33	>33-53	>53-122	>122
Health care services	=<12	>12-22	>22-36	>36-62	>62-156	>156
Homebuilders and real estate developers	=<10	>10-16	>16-19	>19-29	>29-72	>72
Leisure and sports	=<27	>27-47	>47-79	>79-150	>150-458	>458
Media and entertainment	=<14	>14-25	>25-49	>49-80	>80-309	>309
Metals production and processing	=<28	>28-45	>45-63	>63-106	>106-202	>202
Midstream energy	=<6	>6-12	>12-17	>17-25	>25-71	>71
Mining	=<21	>21-36	>36-50	>50-79	>79-198	>198
Oil and gas exploration and production	=<34	>34-52	>52-89	>89-130	>130-416	>416
Oilfield services and equipment	=<53	>53-83	>83-140	>140-276	>276-769	>769
Pharmaceuticals	=<10	>10-19	>19-30	>30-49	>49-125	>125
Railroad, package express, and logistics	=<8	>8-17	>17-24	>24-31	>31-166	>166
Refining and marketing	=<48	>48-63	>63-97	>97-123	>123-318	>318
Regulated utilities	=<5	>5-8	>8-11	>11-17	>17-37	>37
Retail and restaurants	=<10	>10-18	>18-27	>27-48	>48-139	>139
Specialty chemicals	=<12	>12-20	>20-33	>33-49	>49-107	>107
Technology hardware and semiconductors	=<14	>14-27	>27-38	>38-63	>63-153	>153
Technology software and services	=<10	>10-32	>32-64	>64-134	>134-372	>372
Telecommunications	=<7	>7-12	>12-20	>20-36	>36-110	>110
Transportation cyclical	=<18	>18-41	>41-87	>87-146	>146-359	>359

	Volatility of profitability assessment*					
Transportation infrastructure	=<11	>11-20	>20-31	>31-55	>55-114	>114
Unregulated power and gas	=<9	>9-20	>20-30	>30-42	>42-83	>83
Overall	=<8	>8-17	>17-30	>30-55	>55-163	>163

*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. Data covers the seven years to December 2021.

SER calibration by industry based on EBITDA for nonbank financial services sectors

	Volatility of profitability assessment*					
(%)	**1**	**2**	**3**	**4**	**5**	**6**
Asset managers	=<7	>7-9	>9-14	>14-20	>20-34	>34
Financial market infrastructure companies	=<5	>5-7	>7-10	>10-15	>15-22	>22
Financial services finance companies	=<11	>11-19	>19-23	>23-35	>35-64	>64

*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. Data covers the seven years to December 2021.

SER calibration by industry based on EBITDA margin for nonbank financial services sectors

	Volatility of profitability assessment*					
(%)	**1**	**2**	**3**	**4**	**5**	**6**
Asset managers	=<4	>4-5	>5-8	>8-11	>11-16	>16
Financial market infrastructure companies	=<1	>1-3	>3-4	>4-5	>5-11	>11
Financial services finance companies	=<5	>5-16	>16-18	>18-29	>29-54	>54

*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. Data covers the seven years to December 2021.

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Key Changes From Previous Criteria

The criteria incorporate the changes described in "Request for Comment: Sector-Specific Corporate Methodology," published Dec. 11, 2023, and consolidate detailed sector-specific provisions for corporate entities, currently described in nine different articles, into a single article. Most of the changes relate to the overall presentation of the criteria. We have also incorporated a few updates to enhance transparency, usability, and comparability between sectors.

- In the transportation infrastructure, regulated utilities, and unregulated power and gas sectors, we revised some of the conditions for applying the benchmark volatility tables when assessing cash flow/leverage. This is to better encapsulate the benefit of supportive regulatory or contractual revenue frameworks, and to capture potential gradual transitions in credit risk.
- In the financial services finance companies sector, we revised our adjusted EBITDA calculation for distressed debt purchasers. We add 50% of the principal collections back to revenue and EBITDA when assessing cash flow/leverage, to provide a more-comprehensive picture of the company's debt repayment capacity. The cash flow associated with collections on distressed receivables could be used to support debt repayment.
- In the forest and paper sector, we removed a supplementary ratio specific to timber REITs because it adds unnecessary complexity.

Impact On Outstanding Ratings

Based on our testing, and assuming that the entities in scope of this criteria (about 5,000) maintain their credit risk characteristics, we expect to take fewer than 15 rating actions, all of only one notch. We expect most of these rating actions to be upgrades.

Related Publications

Table of contents

Fully superseded criteria

- Key Credit Factors For The Midstream Energy Industry, Nov. 15, 2021
- Key Credit Factors For The Telecommunications And Cable Industry, June 22, 2014
- Key Credit Factors For The Pharmaceutical Industry, April 8, 2014
- Key Credit Factors For The Unregulated Power And Gas Industry, March 28, 2014
- Key Credit Factors For The Oil Refining And Marketing Industry, March 27, 2014
- Key Credit Factors For The Leisure And Sports Industry, March 5, 2014
- Key Credit Factors For The Homebuilder And Real Estate Developer Industry, Feb. 3, 2014
- Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013

Partly superseded criteria

- Corporate Methodology, Jan. 7, 2024

Retired guidance

- Guidance: Corporate Methodology, July 1, 2019

Related criteria

- Corporate Methodology, Jan. 7, 2024
- Management And Governance Credit Factors For Corporate Entities, Jan. 7, 2024
- Methodology: The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers, Oct. 23, 2023
- Financial Institutions Rating Methodology, Dec. 9, 2021
- Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Risk-Adjusted Capital Framework Methodology, July 21, 2017
- Commodities Trading Industry Methodology, Jan. 19, 2017
- Key Credit Factors For The Operating Leasing Industry, Dec. 14, 2016
- Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers Dec. 16, 2014
- Principles Of Credit Ratings, Feb. 16, 2011

Other related publications

- Sector-Specific Corporate Methodology Published, April 4, 2024
- RFC Process Summary: Sector-Specific Corporate Methodology, April 4, 2024
- S&P Global Ratings Definitions, updated from time to time

This report does not constitute a rating action.

This article is a criteria article. Criteria are the published analytic framework for determining credit ratings. Criteria include fundamental factors, analytical principles, methodologies, and/or key assumptions that we use in the ratings process to produce our credit ratings. Criteria, like our credit ratings, are forward-looking in nature. Criteria are intended to help users of our credit ratings understand how S&P Global Ratings analysts generally approach the analysis of issuers or issues in a given sector. Criteria include those material methodological elements identified by S&P Global Ratings as being relevant to credit analysis. However, S&P Global Ratings recognizes that there are many unique factors / facts and circumstances that may potentially apply to the analysis of a given issuer or issue. Accordingly, S&P Global Ratings criteria is not designed to provide an exhaustive list of all factors applied in our rating analyses. Analysts exercise analytic judgement in the application of criteria through the rating committee process to arrive at rating determinations.