

Article Title: Criteria | Corporates | Project Finance: Key Credit Factors For Social Infrastructure, Accommodation, And Entertainment Project Financings Data: (EDITOR'S NOTE: —This article has been superseded by "Sector-Specific Project Finance Rating Methodology," published Dec. 14, 2022, except in jurisdictions that require local registration.) 1. These criteria present S&P; Global Ratings' methodologies and assumptions for its Key Credit Factors (KCF) for rating social infrastructure, accommodation, and entertainment project finance transactions. 2. This paragraph has been deleted. SCOPE OF THE CRITERIA 3. These criteria apply to social infrastructure, accommodation, and entertainment project financings structured as availability-based projects, volume-based projects, or a combination of both. 4. Social infrastructure, accommodation, and entertainment project financings cover: Education projects, such as primary and secondary schools and tertiary teaching facilities; Health projects ranging from large, relatively complex regional hospitals to smaller local primary care facilities and psychiatric facilities; Social housing, military barracks, and student accommodations; Detention centers (i.e., prisons) and judicial facilities; Convention centers; Office accommodations; Data centers and archiving facilities; Hotels; Sports stadiums and arenas; and Student housing and university accommodations. SUMMARY OF THE CRITERIA 5. These criteria specify the key credit factors relevant to analyzing the construction phase stand-alone credit profile (SACP) and the operations phase SACP for social infrastructure, accommodation, and entertainment projects, which we rate in accordance with "Project Finance Construction Methodology," published Nov. 15, 2013, and "Project Finance Operations Methodology," published Sept. 16, 2014. 6. As indicated in tables 1 and 2 below, factors marked with an 'X' in the "Key credit factor" column provide additional guidance on the sections of the construction phase criteria and the operations phase criteria. For factors not marked with an 'X' in that column, only the information provided in the construction phase criteria and the operations phase criteria apply. This KCF also provides assumptions for determining our base and downside cases specific to social infrastructure, accommodation, and entertainment projects. Table 1 Social Infrastructure, Accommodation, And Entertainment: Areas Of Additional Guidance --WHERE ASSESSED-- FACTORS CONSTRUCTION PHASE CRITERIA KEY CREDIT FACTOR A. Construction phase business assessment 1. Technology and design risk a) Technology risk i) Technology track record in this application X X ii) Technology performance match to contract requirements and expectations X X b) Design cost variation risk i) Degree of design completion and costing X ii) Design complexity X X 2. Construction risk a) Construction difficulty X b) Delivery method i) Contractor experience X ii) Degree of contract risk transfer X 3. Project management X 4. Adjusting the preliminary construction phase business assessment X B. Financial risk adjustment 1. Funding adequacy (uses of funds) X X 2. Construction funding (sources of funds) X C. Construction phase SACP X 1. Construction counterparty adjustment X D. Other factors X Table 2 Social Infrastructure, Accommodation, And Entertainment: Areas Of Additional Guidance --WHERE ASSESSED-- FACTORS OPERATIONS PHASE CRITERIA KEY CREDIT FACTOR A. Operations phase business assessment 1. Performance risk a) Asset class operations stability X X b) Project-specific contractual terms and risk attributes X - Performance redundancy X - Operating leverage X - O&M; management X - Technological performance X - Other operational risk factors X c) Performance standards X d) Resource and raw material risk X 2. Market risk a) Market exposure (including market case guidance) X X b) Competitive position X X 3. Country risk X B. Determining the operations phase SACP 1. Preliminary operations phase SACP (including base-case guidance) X X a) Debt service coverage ratios X 2. Adjusted preliminary operations phase SACP a) Downside analysis X X b) Debt structure (and forecast average debt-service coverage ratio) X c) Liquidity X X d) Refinance risk X X e) Projects without fixed contractual maturity dates X f) SACP's in the 'ccc' or 'cc' categories X 3. Final adjustments to arrive at the operations phase SACP X a) Comparable ratings analysis X b) Counterparty rating adjustments X O&M--Operations; and maintenance. 7. This paragraph has been deleted. 8. This paragraph has been deleted. METHODOLOGY Part I: Construction Phase SACP A. Technology And Design Risk 9. Social infrastructure, accommodation, and entertainment projects typically have limited exposure to technology. In assessing the technology and design risk, one key credit factor is the track record of the technology, equipment, material, or technical solution in similar ground and weather conditions and scale as well as how the technology solution and design address the site-specific challenges. 10. For the majority of assets in the sector, the main technology exposures include: Heating

and cooling systems; Building management and temperature control; Security systems; Water and waste water treatment systems; Building ventilation; Energy efficiency and environmental standards; Lifts and escalators; and Information technology, including voice and data systems. 11. Some assets, such as stadiums, may have additional technology exposure. For example, stadiums may have retractable roofs and video and scoreboard displays. 1. Technology track record in this application 12. In most cases, when assessing the technology track record, we assign an assessment of "commercially proven" because most of the technology that is used in social infrastructure, accommodation, and entertainment projects is off-the-shelf technology that building owners have used in many similar projects over a substantial time period and that has a proven track record for comparable operating conditions. For example, most projects will use off-the-shelf building management, heating, and ventilation systems, which we consider to be commercially proven under specified operating conditions. 13. We generally assign a "proven" assessment when the proposed technology is a minor change from a commercially proven technology. For example, a project could propose a more fuel-efficient or cleaner burning boiler system to heat the building, which, despite having some operating history, might have less-certain whole life costs. Similarly, many building management systems face ongoing obsolescence risk, which may impair the project company's ability to maintain the building and lead to an earlier-than-planned lifecycle replacement. If the costs associated with this are likely to have a material impact on predicting the overall lifecycle budget, then we may assign a "proven" assessment. 14. We are rarely likely to use an assessment of "proven but not in this application or arrangement" for these projects. In most cases, contractual mechanisms will likely limit the risk that the project company faces if there is material technology risk. For example, medical imaging equipment risk is often mitigated by protecting the project from default risk in the event that the technology fails to perform. If these mechanisms are absent or are regarded as ineffective and less-well-proven technology--such as a new medical imaging system--then we might consider the "proven but not in this application or arrangement" assessment to be appropriate. 15. New or unproven technology is rarely used in social infrastructure, accommodation, and entertainment projects. However, we assess an application to be "new or unproven technology" if a critical system has not been previously used in an operating environment similar to that of the project. 2. Technology performance match to contract requirements and expectations 16. In most cases, an assessment of "matches all" will apply if a sponsor's project bid sets out how its technical proposals meet the contracted output requirements. The contracting authority evaluates each bid to confirm whether it fully meets the contract requirements; any deviation would generally be a condition for the contracting authority to accept the offer. However, in limited circumstances, an assessment of "exceeds" or "falls short of minor" may apply under these criteria, as outlined in paragraphs 17 and 19 below. It is unlikely that we will assign an assessment of "falls short of material" in this sector, given the limited exposure to technology risk and the contracting authority's significant oversight prior to contract execution. 17. Importantly, many project agreements mitigate elements of technology risk by transferring the risk to a counterparty. We subsequently assess counterparty risks in accordance with "Project Finance: Project Finance Construction And Operations Counterparty Methodology," Dec. 20, 2011. For example, projects are typically protected from performance risks associated with information technology systems in hospitals, such as medical imaging, although the initial supply and installation of such medical equipment may remain with the project. While maintenance of these systems may be one of the project's subcontractors' responsibilities, the contracts are typically structured to ensure that such medical equipment's failure does not weaken the project's credit quality. If these measures are absent or are regarded as ineffective, then we may assign a lower technology performance assessment to reflect the higher technology risk under these criteria. 18. To receive an assessment of "exceeds," under these criteria, a project must demonstrate that all of its components can achieve the relevant performance standards in extreme on-site conditions. The project may achieve this in various ways depending on the detailed project requirements. For example, heating systems may be significantly more energy-efficient than specified, or they may be installed with higher levels of redundancy than specified. Alternately, retractable roofs or playing fields in a stadium could be designed to operate across a much wider range of temperature and wind speeds than the contractual requirements specify. 19. Where systems are likely to affect operations across the whole building, we adopt a weak-link methodology in assessing

technological performance risk. For example, if heating systems provide significant head room above the contract performance thresholds but the security systems match the performance requirements, then we assign an assessment of "matches all" under these criteria. 20. Using a weak-link approach, an assessment of "falls short of minor" will apply when there is a risk that a specified technology may fall short of the contract requirements, leading to an increased risk of financial deductions. For example, when a building is likely to fall short of contracted energy use targets or installed elevators are inadequate for the expected traffic levels. If these risks remain with the project company, then we assign an assessment of "falls short of minor" under these criteria. 21. While we consider it unlikely, an assessment of "falls short of material" will apply if we believe that the project will not reach contracted requirements based on the technology employed. This would typically require a significant error by the contracting authority that evaluated the bid and considered it acceptable prior to financial close. B. Design Cost Variation Risk 1. Design complexity 22. Each new project is often uniquely designed to meet bespoke output requirements based on its location and user needs. However, given the extensive range of cost and building performance data that are available generically in the building industry for developed markets, an appropriate degree of certainty exists regarding how buildings are likely to perform once properly constructed. Many standard form contracts provide relief to a project that limits potential risk. We assign the design complexity assessment after factoring in the impact of contractual mitigation. For example, if ground condition risk remains with the contracting authority, then--everything else being equal--this would reduce design complexity risk. Planning and permitting risk are considered part of the project management assessment. 23. A number of factors could influence a building design's complexity, which, in turn, would affect the building's operational performance as follows: Ground and site conditions: First, soil with limited ability to support building loads may require more complex foundation designs to maintain building stability. Second, underground structures, such as railway tunnels, may require more complex foundation designs to ensure that the building works do not damage any existing assets. Site surveys: Inadequate surveys create uncertainty, which may limit flexibility, cause unexpected delays, and increase construction costs. Brownfield sites are at particular risk of having inadequate survey data if existing buildings requiring demolition prior to construction prevent survey access. Utilities: Sites that have a large number of utilities services, such as power lines or water pipes, or highly important mains supplies may limit working time and increase the risk of cable strikes, which lead to delays. Brownfield sites with limited records of utilities services are particularly exposed to this risk. Environmental conditions: Contamination, endangered species, and unexpected archaeological finds may delay construction and increase construction costs. Site access: Confined building sites without room for onsite material storage, poor road access, or complex decanting requirements and construction phasing will limit the contractor's ability to recover from unexpected delays. Construction adjacent to sensitive buildings, such as operating theaters, may also limit working times and practices. Refurbishment works and building conversions: These works can create uncertainty about both construction time and cost because the existing building's condition may be uncertain, particularly when structural works are undertaken. The refurbished building's long-term performance may also be less certain than for new build works. Key considerations in determining the level of risks involved in refurbishment works include the degree of risks retained by the contracting authority and detailed knowledge of the building to be refurbished (e.g., structural drawings). 24. Under these criteria, we assess the following factors to determine the design complexity assessment: "Proven design." The design and construction sequence has not required material modification to account for site conditions, limited refurbishment works exist, and solid ground survey information is available, all of which are confirmed by an independent expert and adequate construction site access. Examples include simple schools and hotels, domestic accommodation and military barracks, hospitals on greenfield sites with good construction access, refurbishment works (which are limited to redecoration), and adequate survey data. "Modified proven design." An otherwise straightforward design and construction sequence has been tailored to meet specific site conditions, such as environmental conditions, utilities, or site access. This is likely to include medium-sized building projects, such as hotels, hospitals, or stadiums, with some exposure to poor ground conditions, somewhat restricted site access, or moderate levels of structural refurbishment works. "Established design modified for site conditions." Large building construction that has required substantial tailoring to meet site

requirements. This may include large hospitals on restricted building sites, hospitals with complex phasing requirements, and projects with substantial structural refurbishment works, poor ground conditions, or complex foundation requirements. "Simple first of kind." We will likely not assign this assessment to social infrastructure, accommodation, and entertainment projects because, in our view, it is unlikely that new technology will be used in this sector. A project would receive this assessment when employing a new design with a simple configuration. "Complex first of kind." We will likely not assign this assessment to social infrastructure, accommodation, and entertainment projects because, in our view, it is unlikely that new technology will be used in this sector. A project would receive this assessment when employing a new design with a complex configuration.

C. Financial Risk Adjustment

1. Construction base case 25. Most projects constructed in this sector use engineering and procurement and construction (EPC) contracts to mitigate construction cost and delay risk. Furthermore, some risks, such as force majeure risk or delays in achieving planning permission, are retained by the offtaker. Projects may also be exposed to delay due to variations that are agreed to during the construction process. If the concession agreement does not adequately mitigate the risk of cost increases or delays, we may make provisions for these risks within our base case under these criteria.

26. In some circumstances, stadiums and arenas may use an engineering, procurement, construction, and management contract to mitigate construction cost and delay risk, allowing the project to retain management of specific tasks, including procuring and installing specialized equipment, such as large-scale scoreboards or furnishings in the suite and club seat premium areas or restaurants. For this reason, S&P; Global Ratings may adjust its base case for those areas that are retained by the project, subject to our experience with project performance in the sector and any available reports from independent experts.

27. In rare circumstances when a project does not use fixed-price contracts, we will utilize information based on our previous experience with the sector and the contractors employed to determine the likely construction costs and schedules to define our construction base case. We will also use input from an independent expert as required.

2. Construction downside case 28. A risk exposure for a project in this sector is likely to be the failure and subsequent timely replacement of the project's building contractor. Where relevant, we calculate the forecast costs associated with replacing the construction contractor in accordance with "Project Finance: Project Finance Construction And Operations Counterparty Methodology," Dec. 20, 2011. The downside case includes an allowance for the impact of a replaceable builder not already included in the counterparty replacement analysis (see paragraph 76 of "Project Finance Construction Methodology," Nov. 15, 2013).

29. Factors that could increase the EPC contract price, which we include in the construction downside case, may include the residual risk to a project after any contract risk allocation as a result of delays or cost increases due to variations, planning consents, construction works that are required to be completed near sensitive operational facilities, or refurbishment works. For example, this could cover operating theaters in a hospital, poor ground conditions, unexpected archaeology, or delays associated with refurbishment works. In most cases, social infrastructure, accommodation, and entertainment projects seek to transfer all such risks to the building contractor or the offtaker or institute a sharing mechanism that caps the project exposure. To the extent that risks that remain with the creditworthy offtaker are mitigated by timely additional payments (e.g., upfront payments of capital costs for agreed variations), we do not typically make provisions for these possible costs in our construction downside analysis. If such contractual mechanisms are not present or are regarded as ineffective, then the downside analysis will include provisions for such additional costs. Due to the way these transactions are typically designed and structured together with independent oversight of construction payments, we typically expect such additional costs to be limited under a building contractor replacement scenario. If the project does not have sufficient liquidity to meet these additional costs, then the construction phase SACP will be weak-linked to the building contractor's credit quality.

30. The construction downside cost scenario will include our assessment of likely cost and revenue increases in the following allowances: Project operating costs: project salary allowances, office availability, insurances, etc. Facilities maintenance costs incurred during the construction period. Many projects may fully contract such costs on a fixed price basis. However, a project may be more exposed to maintenance cost increases during construction if the project delivers those maintenance services directly by using its own employees. Some projects may have a long construction period, during which

initial lifecycle costs are included within the construction uses of funds. Typically, this will include lifecycle costs of buildings that were transferred to the project without capital works requirements. The construction downside case would include our assessment of likely cost increases. To the extent that the project relies on revenues earned during the construction period, the construction downside will consider the impact of a reduction in revenues. Such revenues will typically be backed either by third-party support or retentions from the construction contract sum. Any construction delay risks that are accepted by the project owner. This may include, for example, risks accepted by a hotel owner if the construction delay is not covered by timely and on-demand liquidity or a revised construction schedule. The construction schedule for a project's completion and the related impact on the budget based on onerous or lenient completion standards. For example, a hotel may be open and collecting room revenues even if, for example, the rooms on the top floor are not finished by the substantial completion date. Part II: Operations Phase SACP A. Asset Class Operational Stability 31. Schools, offices, and small primary care facilities, such as general practitioner doctors' offices, will typically receive an assessment of 1 under these criteria. Small- and medium-sized hospitals--including district and general hospitals, and small prisons--will typically receive an assessment of 2 due to their more intensive use and the more demanding standards, such as cleanliness, that these facilities are required to meet. Larger, more complex hospitals, such as large or regional specialist acute care hospitals, and large prisons with complex service requirements, such as security, will typically receive an assessment of 3 due to their greater size, more intense use, and the facilities' complexity. 32. Some more recent availability-based projects have limited service requirements (e.g., soft facilities maintenance services may be retained by the contracting authority). While reduced service requirements may marginally reduce risk to the project, we will not differentiate the asset class operational stability assessment. However, we may consider reduced service requirements in the comparable ratings analysis. 33. Open-air stadiums and smaller hotels will typically receive an operational stability assessment of 1 due to their limited operating complexity. Complex and large-scale convention center hotels and arenas would typically receive an operations stability assessment of 2 given their relatively higher operating complexity. B. Market Risk 1. Market exposure (including base-case guidance) 34. Under these criteria, we will not generally assess market exposure for availability-based projects because we anticipate minimal variation in the cash flow available for debt service from our base case to the market downside case. 35. Some volume projects with market risk, such as university accommodation projects in the U.K. or hotels in the U.S., will only be paid for rooms that are occupied. In these situations, the market downside will be determined by examining the contractual features, such as minimum revenue guarantees, the market dynamics of local accommodations, and trends in occupancy over the previous seven to 10 years. 36. The market downside case for hotels will reflect the market conditions expected during a severe recession. For example, in the U.S., this case will generally be informed by the experience from 2008-2010, the low point of the recent economic cycle. We will use the following key assumptions for the market downside case: For operating and greenfield hotels, we will typically assume a seven- to 10-year downturn commensurate with conditions expected in an economic recession, followed by a two- to five-year period of normal conditions, and then another seven- to 10-year downturn. In the last 10 years of the hotels' estimated useful life, we will also assume deterioration in the hotels' ability to compete in the market as the facilities age or a new competing hotel opens, which will typically decrease annual revenue per available room (RevPAR) growth by at least 50 basis points relative to our base case. 37. The market downside case for stadiums and arenas will reflect the market conditions expected during a severe recession combined with a period of poor team performance. We will use the following key assumptions for the market downside case: Ticket revenues and attendance will be lower than the stabilized base case average and the decline will vary based on the sports league modified by the facility's competitive position as determined in Table 8. In the U.S., the typical attendance decline for the National Football League (NFL) is 5%, with the facility with the strongest competitive position declining by 4% and, in unusual circumstances, a facility with the weakest competitive position declining by 25%. The typical declines for the National Hockey League (NHL) and National Basketball Association (NBA) are 5%, declining to 4% for facilities with the strongest competitive position and a 20% decline for the unusual circumstance of a facility with a weak competitive position. For Major League Baseball (MLB), the typical decline is 12%, with the strongest

facilities at 8% and the unusual circumstances of the weakest facilities declining by 20%. In sports outside the U.S., where poor team performance can lead to demotion to a lower league, we will typically apply a reduction of 20%–50% to reflect likely ticket revenues in the lower league.

Contractually obligated income (COI), such as premium products of suites, clubs seats, and naming rights, typically declines by 2.5%-5% at each contract renewal point (generally assumed to be every 15 years) for facilities with an established operating track record. In sports outside the U.S., where poor team performance can lead to relegation to a lower league, a downside of 30%–60% will typically be applied to reflect the likely COI associated with the lower league with the amount of stress tied to the competitive position. We may assume a more modest decline if we believe the facility is highly competitive, allowing it to retain greater pricing power. For projects without an operating history, we will typically assume revenue from COI is 5%-15% lower at the contract renewal points. Turnstile/game-day revenue (i.e., food and beverage, parking, etc.) is tied to attendance levels and is based on the downside attendance levels. Minimum contractually guaranteed revenues provide a floor. If there is a material risk of a work stoppage, such as with many sports in the U.S., then we will apply a one-year work stoppage during the debt term. During the work stoppage, the facility will receive only contracted revenues whose contracts require payment during a loss of games. The pace of the recovery following the work stoppage will vary by league, with the NBA and NHL generally returning to pre stoppage levels in one year, and the NFL and MLB recovery over a longer period of time up to three years. The multi-purpose arenas have shorter recovery periods because historically it attracts additional arena programming during the work stoppages and attendance tends to recover faster due to team initiatives, such as discounting, to encourage fans to return. Similar to the attendance decline, this will vary based on the facilities competitive position score, with those facilities with strong competitive positions recovering faster and weak positions recovering over a longer period. 38. Stadium and arena projects may include financial structures to mitigate known sector risks. For example, a project may have a dedicated reserve account to fund facility operations and obligations during a work stoppage. Where we consider that the financial structure adequately mitigates the cash flow disruption, the market exposure assessment will exclude the impact of the work stoppage on cash flow available for debt service. We would then use the next weakest period of cash flow available for debt service for the market exposure assessment. When a reserve is used for a work stoppage, we will exclude that reserve from our remaining liquidity analysis (see paragraph 79 of "Project Finance Operations Methodology," Sept. 16, 2014). 39. Certain stadium and arena projects have long leases and debt tenor (up to 45 years). In these cases we often have limited confidence in market and operating assumptions in the outer years. As a result, we generally assume shorter asset life, typically 30 years for a new stadium, unless we have specific information that would point to a longer or shorter life. In our forecasts, we assume all debt amortizes within this timeframe. 2. Competitive position 40. The competitive position is typically not material for availability projects with revenues that are covered fully contracted and, therefore, no market risk exists. We outline the driving factors for our assessment of competitive position for student accommodation, hotels, and stadium projects below. (a) Student accommodations 41. Where university/student accommodations are exposed to market risk, we will consider the following factors when determining the competitive position assessment: Whether the facility is collocated with the offtakers' facilities; Whether marketing processes for the facility are closely linked to the offtakers' core business and strategy for growth; The strength of other commercial incentives, such as revenue guarantees, which may require the offtaker to pay for unoccupied rooms below a specified threshold; The degree of competing facilities in the region; Occupancy history; and Price sensitivity. 42. We list the factors we use to assess the competitive position for university and student accommodation projects in table 3 below. We will assess these attributes as positive, neutral, or negative. We describe the characteristics of positive and negative assessments below. If a factor does not meet these characteristics, then we will assess it as neutral. Table 4 specifies how we combine the results from table 3 to determine the competitive position assessment. In limited circumstances, one factor may be assessed as unusually negative. In this case, we will lower the competitive position assessment by at least one category below that defined by table 4 (e.g., "weak" instead of "fair"). For example, if an offtaker was actively building material competing supply adjacent to the rated project, then we will assess "competing supply" as highly negative and lower the competitive

assessment by at least one category compared to the outcome from table 4. Table 3 Competitive Position Factors - University And Student Accommodations

COMPETITIVE FACTOR	POSITIVE	NEGATIVE
Collocation	The facility is located on the same site as the offtakers' facilities.	The facility is located independent from the offtakers' facilities.
Marketing process	The offtaker directly manages the marketing to attract new residents or users or the offtakers' brand materially contributes to the marketing process.	The project markets itself as an independent accommodations provider.
Offtaker incentive	The offtaker has contractual or commercial incentives to maximize occupancy. This could include occupancy guarantees at a level below our project base case or an offtaker uses the facility as a competitive advantage to attract new business.	The offtaker has limited or no incentive or ability to assist a project to achieve the base-case occupancy levels in our forecasts.
Competing supply	The offtaker has committed to build no new facilities on site that would create barriers of entry for any direct competition. As a result, a project is able to clearly differentiate itself from competing facilities, such as private landlords.	The offtaker may build competing facilities on site or the project has limited ability to differentiate its facilities from other competing services.
Price sensitivity	The project can, and has, demonstrated its ability to increase prices with limited impact on occupancy. Occupancy levels are sensitive to price increases.	

Table 4 Competitive Position Assessments - University And Student Accommodations

COMPETITIVE ASSESSMENT	OUTCOME
Strong	All five competitive factors in table 3 are assessed as positive.
Satisfactory	At least four competitive factors in table 3 are assessed as positive and none are negative.
Fair	Does not meet the requirements of strong, satisfactory, or weak.
Weak	More than two competitive factors in table 3 are assessed as negative.

(b) Hotels and stadiums 43. The key factors we will consider in determining the competitive position for stadium and arena projects are: Pricing; Demand; Market strength; and Market share. 44. The key factors we will consider in determining the competitive position for hotel projects are: Market position; Market strength; The asset's condition; and Pricing elasticity. 45. In assessing the competitive position for hotels, stadiums, and arenas, we will consider the attributes described in tables 5 and 7 below. We will assess these attributes as positive, neutral, or negative. We describe the characteristics of positive and negative assessments below. If the project does not meet these characteristics, then we will assess it as neutral. In limited circumstances, one factor may be assessed as unusually negative. In this case, we will lower the competitive position assessment by at least one category below that defined in tables 6 and 8 (e.g., "weak" instead of "fair"). Two examples are (1) a hotel that's old, not well maintained, and has insufficient cash flow to undertake adequate maintenance and (2) a stadium that has been forced to lower prices despite strong team performance in order to maintain attendance. In such cases, we will lower the competitive assessment by generally one category compared to the outcome in tables 6 and 8.

Table 5 Competitive Position Factors – Hotels

COMPETITIVE FACTOR	POSITIVE	NEGATIVE
Market position	The hotel receives a consistent premium over similar competitive hotels. This competitive advantage may be due to factors such as proximity to the market driver (i.e., it is connected to a convention center). We would assess the strength based on the project's RevPAR (revenue per available room) compared to others in the market. For greenfield hotels, we would base our assessment on our sector experience and adjust it for the independent market study and sponsor case.	The hotel's market position is below other similar competitive hotels, as generally measured by RevPAR and volatility. During an economic downturn, the hotel's RevPAR dropped below those in the market and grew slower when the economy rebounded.
Market strength	The local market is significantly above the national market when measured by the local market's RevPAR or other market indices. For example, in the U.S., the market is ranked in the top 25 in the country.	The local market is significantly below the average market when measured by RevPAR. For example, the project is located in a secondary or tertiary metropolitan area.
The asset's condition	The hotel is new and well maintained compared to others in the market. For example, a strong hotel will routinely replace the furniture, fixtures, and equipment and upgrade amenities to attract visitors.	The hotel is older and not well maintained compared to others in the local market. A weak hotel extends the replacement cycle of furniture, fixtures, and equipment and does not provide modern amenities.
Pricing elasticity	The hotel maintains a greater market pricing premium than its competitors, and pricing is relatively insensitive to local and regional trends through economic cycles. For example, a hotel's average daily room rate does not decline as fast as its competitors and rebounds faster and stronger than other competitors.	It will

rank in the top quartile of the competitive set or comparable hotel class. The hotel average daily room rate dropped faster and rebounds slower during economic cycles relative to its competitors and is consistently in the bottom half of pricing. Table 6 Competitive Position Assessment – Hotels

COMPETITIVE ASSESSMENT TYPICAL CHARACTERISTICS

Strong All four competitive factors in table 5 are assessed as positive and none are negative. **Satisfactory** At least three competitive factors in table 5 are assessed as positive and none are negative. **Fair** Does not meet the requirements of strong, satisfactory, or weak. **Weak** More than two competitive factors in table 5 are assessed as negative. Table 7 Competitive Position Factors – Stadiums And Arenas

COMPETITIVE FACTOR

POSITIVE **NEGATIVE**

Demand The facility has consistent attendance and support from its fan base through poor team performance and economic downturns. For example, when the team winning percentage is less than .500, the team has not qualified for post-season championship games, or the team has been relegated to a lower league. The facility has inconsistent attendance trends, fan support, or team loyalty. **Material** attendance drops during periods of poor team performance or an economic downturn. **Market share** The facility attracts fans and sponsors in a greater proportion compared to other local entertainment options. We often measure this factor by comparing occupancy, average price, or renewal rates for the facility and premium products, such as suites and club seats, relative to others in the market and the league. For example, the facility would rank in the upper quartile. The facility has significantly low occupancy, poor renewal rates, and low pricing compared to others in the same market. These trends are generally present even in strong economic periods and successful team performance. **Market strength** The facility's regional market is significantly above average, as measured by general economic factors, such as wealth and income levels, and population trends, indicating it is desirable when compared to the other markets within the league. The facility's regional market is significantly below average, as measured by general economic factors, such as wealth and income levels, and population trends, making it undesirable when compared to the other markets within the league. **Pricing** The project can raise prices for tickets or premium offerings, at times in excess of the inflation rate. This may be measured by different ticket pricing in the primary and secondary markets or the favorable ranking in the league or regional market. For example, the average ticket price may rank in the top quartile of the league or the regional market. The project has limited ability to raise ticket pricing, even during strong economic cycles or when team performance is exceptionally strong. This is measured compared to the regional and league averages. For example, the facility may rank in the bottom half of the league average or regional market compared to other comparable facilities. Table 8 Competitive Position Assessment – Stadiums And Arenas

COMPETITIVE ASSESSMENT TYPICAL CHARACTERISTICS

Strong All four competitive factors in table 7 are assessed as positive and none are negative. **Satisfactory** At least three competitive factors in table 7 are assessed as positive. **Fair** Does not meet the requirements of strong, satisfactory, or weak. **Weak** More than two competitive factors in table 7 are assessed as negative. C. Preliminary Operations Phase SACP (Including Base-Case Guidance) 1. Availability projects 46. S&P; Global Ratings' base case for availability projects will generally be in line with the sponsor's base case because costs and revenues are predominately fully contracted. However, we may adjust the sponsor's base case if necessary based on independent information and our analytical experience. While most project revenues are contracted, projects can be exposed to deductions for failing to provide services to specification. In most cases, any deductions will be passed through in full to the project's service providers. Accordingly, S&P; Global Ratings' base case will not generally include deductions. However, we will assess the impact of the service provider's failure to meet its contracted service obligations and the consequences this could have under its contractual agreements. If an availability project is self-performing the services, then S&P; Global Ratings' base case will include expected deductions depending on the nature of the services being delivered and the payment mechanism's terms. 47. In most cases, if we determine that a subcontract price is not consistent with current market prices, then we will most likely reflect this by increasing the downside cost margin rather than by adjusting the base case. 48. Where costs are self-performed or uncontracted (e.g., lifecycle costs), S&P; Global Ratings' base case will be based on our assessment of likely costs, the independent expert's report (if available), and our experience with the sector and the region in which the project is operating. 2. Volume-based projects 49. S&P; Global Ratings typically develops its base case for volume-based

projects using the sponsor's base case as a starting point. We will make adjustments to our base case based on our sector experience and input from a market study conducted by an independent expert. S&P; Global Ratings' base case will consider the project's location, the local market, and the pledged revenues. For example, each project may have a different mix of pledged revenue, which may include: All stadium operating revenues available after payment of operating expenses, which may include lease payments from long-term tenants, such as the team; Only ticket revenue generated at the stadium or arena; Local hotel occupancy tax, sales tax, or other nonproject revenue, such as government appropriation revenues; All hotel operating revenues available after payment of hotel operating expenses; or Contracted payments based on room occupancy for university accommodation projects. 50. We will include in our base case the impact of any revenue contracts that may mitigate volume and pricing risk. Hotels may have short-term group bookings for room blocks contracted on a rolling basis, and stadiums/arenas may have medium- to long-term advertising, naming rights contracts, and suite contracts. Such contracts only partially mitigate risk. For example, contracts for hotel groups guarantee a daily room rate and a minimum number of room nights. However, during a recession, room nights under room block agreements tend to be lower than contractual levels because they are often postponed or cancelled. 51. Projects with volume exposure, such as hotels and stadiums, often have an annual requirement to fund the replacement of furniture, fixtures, and equipment (FF&E;) and major maintenance projects. FF&E; replacement schedules are a function of hotel occupancy and we will adjust them in accordance with our occupancy assumptions (see RevPAR in table 9 below). 52. For stadium and arena projects, we believe these projects face market competition and over time, will be less competitive relative to potential new facilities and other entrants. As a result, we generally forecast profitability will worsen. We typically do this by assuming revenues grow at a slower pace relative to operating expenses. Specifically, we assume that the annual revenue growth rate is 50 bps lower than the initial growth rate, which often results in a margin compression of roughly 10 percentage points from year 20 to year 30. 53. We will generally base room occupancy assumptions for student accommodation projects on the following assumptions: Trends in historical room occupancy rates, including average occupancy over the last five years (if available), with adjustments if these rates diverge significantly from the average; The strength of university marketing processes and any room guarantees offered to new students; and Incentives in place for the university to fully occupy project rooms (e.g., any revenue guarantees which may commence if room occupancy falls below a specified threshold). 54. We will use the assumptions in table 9 to develop our base case for hotels. 55. We will use the assumptions in table 10 to develop our base case for stadiums and arenas.

Table 9 S&P; Global Ratings Base-Case Assumptions For Hotel Projects

FACTOR ASSUMPTION Revenue per available room (RevPAR) We base our assessment on the market's current and historical average RevPAR growth rate, while considering the impact on the additional capacity added to the market. For new projects, we may apply a premium over similar competitive hotels if substantiated by our assessment of local demand conditions. For all operating projects, growth in RevPAR will slow as occupancy reaches a stabilized level and room rates move in line with S&P; Global Ratings' consumer price index (CPI) forecast. Ramp-up For new hotels, our ramp-up period is generally three to five years based on historical supply and demand trends. We may adjust this period based on the effectiveness of management's marketing strategy and short-term group bookings. Other factors that we consider include the strategy employed by competing facilities, such as discounting the average daily rate, or renovation projects to compete with the new hotel. Operating margin Our operating margin assumptions generally range between 40%-60% and are influenced primarily by the hotel's pricing power and regional labor costs and fixed obligations, such as property taxes and utilities.

Table 10 S&P; Global Ratings Base-Case Assumptions For Stadium and Arena Projects

VARIABLE ASSUMPTIONS Ticket revenues and attendance We typically base ticket revenues and attendance on the historical averages over the past seven stabilized years, adjusted for new capacity, seating configuration, market factors, and pricing premium. Typically, opening year attendance would be higher compared to historical trends, followed by a decline to a stabilized level within three to five years. Long term growth rates will generally be lower than CPI, especially for those teams with ticket prices in the top quartile, as market factors limit pricing flexibility. For facilities without an established operating history we rely on our experience which may be informed by reports from independent consultants.

Contractually obligated income (COI), such as premium products of suites, club seats, and naming rights. At the expiration of the current contracts, COI revenues increase with inflation and we adjust them for historical performance and market competitiveness in line with the facility's competitive position score. For projects without an operating history or in a competitive market, we would generally assume a price decline of generally 5% at the major renewal point, which typically occurs every 15 years. For uncontracted inventory, we would generally assume a portion is sold, either under short-term or individual game-day contracts, based on our experience with historical market demand. For new stadiums under construction without executed contracts, we would generally not assume that the sales of remaining uncontracted products contribute to occupancy of higher than 70% unless this can be substantiated by successful premarketing programs or strong expression of interest from existing patrons. Turnstile/game-day revenue (i.e., food and beverage, parking, etc.) Turnstile revenue is tied to annual attendance and follows our base case assumptions. If the contract includes guaranteed minimum revenue, then we would include the minimum revenue in our base-case forecast. Revenues would grow in line with our view of the CPI or decrease based on historical performance and market demand. Similar to ticket revenues, the growth rate may be lower than CPI as market factors, such as demand indicated by the competitive market assessment, may limit annual pricing flexibility. Non-sporting-event revenue (i.e., concert and family shows in an NFL stadium) We typically do not include non-sporting-event revenue in our base case unless a track record has been established for generally five years or the events are under long-term contract with a counterparty whose creditworthiness is assessed at least as high as the issue credit rating on the project. Operating costs We typically base operating costs on historical trends over generally three years of stabilized operations and adjust them based on our sector experience. For projects without an operating history, we rely on our experience and reports from independent experts and would generally be highest in the opening year, followed by declines over the next three to five years of 10% as the operations stabilize as indicated by the operations and management assessment (see Paragraph 32 of "Project Finance Operations Methodology," Sept. 16, 2014). The costs will grow in line with our view of CPI and increase by 50 bps in the last 10 years of the useful life as the facility ages. Major maintenance We would typically increase major maintenance expenses based on our inflation assumptions and increase the last 10 years by typically 50 bps higher maintenance which may be needed for an aging facility. Some major maintenance expenses will be driven by usage in addition to market factors and facility age and we would adjust this requirement based on our view of attendance and changes in consumer tastes. D. Adjusted Preliminary Operations Phase SACP 1. Downside analysis (a) Availability projects 56. Because revenues are generally fully contracted, the main variables for S&P; Global Ratings' downside case in this sector are operating costs, lifecycle and/or capital costs, and the timing of these variables. In contrast to most sectors, we assume that the transition from our base case to the downside case would happen rapidly. The downside stresses are generally run as a combined scenario. Table 11 below specifies the cost increase assumptions that we will typically apply in this sector. We may apply higher downside cost assumptions in limited circumstances. For example, if we consider that a facility's maintenance contract does not reflect current market prices, the downside will include the increases specified in table 11 plus an amount to correct for the original contract's lower-than-market pricing. 57. We expect that the most likely cause of underperformance in this sector is the failure and subsequent replacement of a project's contractors. We will calculate replacement costs in line with "Project Finance: Project Finance Construction And Operations Counterparty Methodology," Dec. 20, 2011, and, therefore, exclude them from the downside case. Following replacement, the downside scenario assumes a subsequent cost increase where relevant, as specified in table 11 below. Structural changes in the market for the contracted services, economic conditions, contractor- or issue-specific factors, and projects located in less-well-developed markets may result in higher replacement cost scenarios in the downside than specified in table 11. 58. Where facilities management services are provided by a contractor that is rated at the same level as the project or higher, and the services are backed by an appropriate guarantee from the parent company, S&P; Global Ratings' downside case will generally exclude services cost increases. In this case, we would deem the service contractor irreplaceable in accordance with "Project Finance: Project Finance Construction And Operations Counterparty Methodology," Dec. 20, 2011. To confirm the possible rating transition in the event of a

counterparty downgrade, we will run the downside including the additional costs following contractor replacement. 59. S&P; Global Ratings' downside case will also incorporate any other risks to which the project is exposed and that are not hedged or transferred to a suitable counterparty. For example, if a project is exposed to energy price or consumption risk, S&P; Global Ratings' downside case will include increases in these unhedged exposures as specified in table 11 below. 60. S&P; Global Ratings' downside case will generally include deductions that reflect poor performance as determined by the project's independent expert (if available) and our experience with the sector. S&P; Global Ratings' downside case will also consider how such deductions will be funded. If such funding is timely and provided on demand from a creditworthy source, then the financial impact of such deductions would be mitigated. 61. Projects often remain exposed to lifecycle risk (i.e., the risk that major maintenance costs exceed expectations or a change in timing) through the concession's life. We will impose a stress on lifecycle costs and timing, as set out in table 11 below, because our analysis assumes that the project would be exposed to lifecycle cost and timing risk if a lower-rated lifecycle counterparty defaults and is not replaceable. If, in accordance with "Project Finance: Project Finance Construction And Operations Counterparty Methodology," Dec. 20, 2011, we consider that the lower-rated counterparty is replaceable on similar terms, then S&P; Global Ratings' downside case would be based on our assessment of the replacement lifecycle contract's terms. As a result, S&P; Global Ratings' downside case may incorporate an inflated lifecycle contract cost but no exposure to lifecycle timing risk. 62. Where lifecycle costs and timing risk are subcontracted to a counterparty that is rated at the same level or higher than the project debt, we will generally not impose the lifecycle stress, and we will deem the counterparty irreplaceable in accordance with "Project Finance Construction And Operations Counterparty Methodology," Dec. 20, 2011. To confirm the possible rating transition in the event of a counterparty's downgrade, we will run the downside case including lifecycle risk. 63. Lifecycle timing risk will typically be assessed by moving 35% of the two-highest forecast semiannual lifecycle expenditures two years earlier than specified in S&P; Global Ratings' base case. If, in our opinion, it is difficult to forecast lifecycle costs and timings, then under the criteria we may make larger adjustments to the lifecycle timing in our downside case. If lifecycle expenditures are required to meet hand-back requirements and occur in the last few years of the concession, then we will ignore these periods when determining the highest periods of expenditure. In our opinion, expenditures planned purely to meet hand-back requirements are unlikely to occur earlier than scheduled unless, in our opinion, the costs are scheduled so late in the concession that there is likely to be insufficient time to complete the works prior to the end of the concession. 64. Table 11 below shows the stresses that we will typically simultaneously apply to an availability project.

S&P; Global Ratings Downside Case Assumptions For Availability Projects	
VARIABLE DOWNSIDE CASE	
Hard facilities maintenance costs	The hard contractor is terminated. We will apply a replacement premium of typically 10% higher costs.
Soft facilities maintenance costs	The soft facilities maintenance contractor is terminated two years after the hard facilities maintenance contractor. We will apply a replacement premium of typically 10% until the next benchmark period.
Project company management costs	Base-case costs typically increase by 5%.
Lifecycle costs	Typically a 10% increase on all real costs.
Lifecycle timing	We will move typically 35% of the two-largest semiannual payments two years earlier relative to S&P; Global Ratings' base case.
Third-party income	Only guaranteed levels, if applicable.
Energy costs	We will base the price assumptions on the maximum contracted exposure or the worst-case prices typically over the last 10 years.
Energy volumes	Typically increase by 5%.
Abatements/deductions	In the absence of operational history, we will typically base deductions on the independent experts' view of likely poor performance and our opinion of the operators' experience and capability in the sector and region in which the project is located. Where a project has substantial operating history and no recent independent expert report, we will typically apply financial deductions of at least twice the average level experienced during the operational period, capped where relevant by the facilities management contract termination threshold. In the absence of an independent expert report or operating history, we will apply deductions typically equivalent to 50% of the facilities management contract termination threshold. If the project is completing services directly, then the downside case will be based on our expectation of deductions associated with likely poor performance.

(b) Volume-based projects 65. S&P; Global Ratings' downside case will combine our market downside case with our operational downside assumptions and financial

stresses linked to any refinancing, where relevant. Our market downside case assumptions are described in paragraphs 35-37. Similar to availability projects, we will assume that the transition from S&P; Global Ratings' base case to S&P; Global Ratings' downside case will happen quickly. The main driver for S&P; Global Ratings' downside case is: For stadiums and arenas, an economic downturn or recession combined with poor team performance. For hotels, a new hotel entering the market. 66. Tables 12 and 13 show the stresses that we will typically apply simultaneously to volume-sensitive hotels or stadiums in our downside case. Operating costs include both variable costs tied to usage and fixed costs. Therefore, during an economic downturn, we would assume that operating expenses would be flat or decline slightly as management adjusts the variable costs, such as maid service or lost games, to match the occupancy. In addition, if a hotel has consistently low occupancy, then the major maintenance cycles may be less frequent. For example, major furnishings--such as carpeting and bedding--will require less frequent replacement because of lower usage. 67. We may apply higher downside assumptions in limited circumstances. For example, if the hotel has not reached stabilization or there are strong competing hotels in the market, we may assume a greater decline in operating margin. Table 12 S&P; Global Ratings Downside Case Assumptions For Hotel Projects VARIABLE ASSUMPTION Operating margin Operating margins will gradually decline by generally 10 percentage points from year 10 until the estimated end of life. Operating and maintenance and major maintenance costs The costs of running an aging facility increase at a slightly higher rate than in the base case. Typically, annual percentage cost increases would be 50 basis points higher relative to our base case. Furthermore, operating and major maintenance costs accelerate during the last 10 years of a project's useful life. Typically, we assume major maintenance costs grow by an incremental 2-5 percentage points per year. Table 13 S&P; Global Ratings Downside Case Assumptions For Stadiums and Arenas VARIABLE ASSUMPTION Operating and maintenance and major maintenance costs If the project has not stabilized by year five, then we will typically increase operating and maintenance costs by up to 5%, or the five-year average, to reflect our view of the steady state. 68. Lower downside assumptions may apply in limited circumstances. For example, if we believe the project has regularly followed major maintenance replacement, we may limit the growth in major maintenance costs to inflationary increases. 2. Liquidity 69. In most social infrastructure, accommodation, and entertainment projects, we will typically assess liquidity as "neutral." Debt service reserve accounts are generally sized to meet at least six months of debt service, while major maintenance accounts and other accounts are generally sized to meet any forecasted lumpy capital expenditures, tax, and transaction-specific structural features. 70. Some market-exposed projects, such as U.S. hotels and stadiums, may require greater levels of liquidity to achieve a "neutral" assessment. For example, convention center hotel projects are typically exposed to downturns in demand and occupancy, which move in line with regional and national economic trends, and do not have the ability to adjust operating expenses to offset the decline in RevPAR. 71. For liquidity to be assessed as "neutral" under the "Project Finance Operations Methodology," Sept. 16, 2014, we would expect U.S. hotels to have the following liquidity provisions: A debt service reserve account that is typically sized to meet 12 months of senior debt service; and FF&E; reserves for the periodic replacement of hard and soft FF&E; typically funded from 4% of gross room revenues ahead of periodic replacement. 72. For liquidity to be assessed as "neutral" under the "Project Finance Operations Methodology," Sept. 16, 2014, we would expect U.S. stadiums and arenas to have the following liquidity provisions: A debt service reserve account that is typically sized to meet 12 months of senior debt service. However, under certain circumstances--for example, when a stadium's revenues are predominately contracted and supported by a period of stable operation--a senior debt service reserve sized to support six months of senior debt service may achieve a "neutral" liquidity assessment; and Cash flow for an arena or stadium project may be interrupted during a prolonged work stoppage because a portion of the short-term or uncontracted revenues may not be collected. For a stadium or arena to have "neutral" liquidity, the project must be able to meet operating and debt service costs for 12 months without access to uncontracted revenues. This may be achieved by having sufficient contracted revenues to meet cash flow requirements in the event of a stoppage, dedicated prefunded reserves, or covenanted reserves, which build liquidity prior to the expiration of the league's collective bargaining agreement. 3. Refinance risk 73. When refinance risk is present, we will generally use the asset lives as indicated in table 14. Where applicable, we will adjust a specific

project's expected life based on its particular circumstances. Long-term concession agreements may cap a useful economic life. Table 14 S&P; Global Ratings Typical Asset Life ASSET TYPE TYPICAL ASSET LIFE Availability projects Contracted concession period University student accommodations Contracted concession period Hotels Typically 20 years for limited-purpose hotels and 30 years for large-scale convention center hotels Stadiums and arenas Typically 30 years REVISIONS AND UPDATES This article was originally published on Sept. 16, 2014. These criteria became effective on the date of publication. This article is related to our global project finance criteria (see "Project Finance Framework Methodology," published Sept. 16, 2014) and to our criteria article "Principles Of Credit Ratings," published Feb. 16, 2011. Changes introduced after original publication: Following our periodic review completed on Sept. 14, 2016, we updated criteria references and the contact list and deleted sections that appeared in paragraphs 2, 7, and 8, which were related to the initial publication of our criteria and no longer relevant. Following our periodic review completed on Sept. 11, 2017, we updated the contact list. Following our periodic review completed on Sept. 10, 2018, we updated the contact list. On Oct. 16, 2019, we republished this criteria article to make nonmaterial changes to the contact list. RELATED CRITERIA AND RESEARCH Related Criteria Project Finance Framework Methodology, Sept. 16, 2014 Project Finance Operations Methodology, Sept. 16, 2014 Project Finance Transaction Structure Methodology, Sept. 16, 2014 Project Finance Construction Methodology, Nov. 15, 2013 Project Finance: Project Finance Construction And Operations Counterparty Methodology, Dec. 20, 2011 Principles Of Credit Ratings, Feb. 16, 2011 Related Research Common Assumptions For U.S. Stadium And Arena Projects, Sept. 16, 2014 Credit FAQ: An Overview Of Standard & Poor's Criteria For Assessing Project Finance Operating Risk, Sept. 16, 2014 Credit FAQ: Provision Of Information For Assessing Project Finance Transactions, Dec. 16, 2013 FAQ: An Overview Of Standard & Poor's Criteria For Assessing Project Finance Construction Risk, Dec. 16, 2013 These criteria represent the specific application of fundamental principles that define credit risk and ratings opinions. Their use is determined by issuer- or issue-specific attributes as well as Standard & Poor's Ratings Services' assessment of the credit and, if applicable, structural risks for a given issuer or issue credit rating. Methodology and assumptions may change from time to time as a result of market and economic conditions, issuer- or issue-specific factors, or new empirical evidence that would affect our credit judgment.