Project Finance
Criteria Report

Rating Approach to Project Finance

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■ Introduction

Fitch has rated or reviewed many different types of project finance transactions in the international markets, including telecommunications, power projects, toll roads, airports, mines and pipelines. Fitch generally breaks down the analysis into the following areas: sponsors, pre-completion risk, operation risk, offtake risk, country risk and structural aspects. While these factors can be applied to most project financings, the relative importance of each in the analysis will vary by project.

The popularity of project financings in the international markets has increased significantly in recent years. This is in large part a result of the demand for infrastructure projects in emerging markets experiencing exponential growth. The increased popularity of BOOT (build-own-operate-transfer), BLT (build-lease-transfer), BOO (build-own-operate) and other structures has resulted in an increase in the use of project finance as a means of financing the infrastructure needs in countries throughout the world.

Historically, these projects have been financed by a combination of equity, internally generated cash flows and debt, which has generally been provided by commercial banks, export credit agencies and multilaterals. The capital markets have not been widely used to raise debt for infrastructure projects. Recently, there has been increasing interest in the capital markets as a source of funding for infrastructure projects. There are a number of reasons for this. First, the demand for infrastructure projects in emerging markets is increasing at a rapid pace, and, at the same time, governments are facing increasing financial constraints. Second, the commercial banks are not a natural source of financing for these projects due to the relatively long term of the loans required by the projects. Finally, the analysis of these transactions takes a significant amount of time and resources due to their complexity. With increased exposure to these transactions, parties are better able to analyze the allocation of risks.

In international projects, it is especially important to have strong economics, since the environment in which they operate can be untested or uncertain. Projects with strong economics provide incentives to the participants involved. Strong projects can achieve investment-grade ratings. Projects that have received investment-grade ratings include projects with construction risk. In these cases, a large part of the construction risk was assumed by the contractors and/or sponsors.

Typically, the rating of a project will be constrained by the rating of the sovereign. However, Fitch has reviewed a number of transactions that have attempted to mitigate certain sovereign risks and achieve a rating above that of the country. These have included transactions with political risk insurance as well as transactions structured to take advantage of the preferred creditor status of certain multilaterals and export credit agencies. Finally, projects that generate hard currency offshore may be able to be structured to reduce transfer and convertibility risk.

In rating projects in international markets, Fitch uses analysts with a variety of backgrounds. Typically, this would include the involvement of the international structured and project finance group; industry analysts, which vary with the type of project being rated; sovereign analysts; and analysts from the Fitch affiliate office in the country in which the project is located.

Sponsors

The quality of the sponsors is an important consideration when assessing the potential success of a project. Strong sponsors have significant positive experience within their own markets and internationally. Prior experience in the region and country in which the project is located is desirable. Fitch looks for previous involvement with projects that have been developed and operated successfully. The project sponsors should be able to demonstrate past experience with the technology. The involvement of local parties is considered to be advantageous, as they may be more knowledgeable of and responsive to the business and political environments within the country.

Fitch looks for evidence of the sponsors' commitment to the project. If the sponsors have significant resources and time invested in the project, they are less likely to abandon it. Higher levels of equity investments on the part of the sponsors are considered a positive factor when evaluating a project. The strategic importance of the project to the sponsor is considered. For example, the sponsor's performance on a high-profile project may heavily influence the chances for subsequent business within a country or region.

Fitch assesses the financial strength of the sponsors. The credit quality of the sponsors is important to ensure that they will be able to meet any future obligations they may have, such as contingent equity requirements. Weaker sponsors may be acceptable with a guarantee from a stronger corporate entity.

Pre-Completion Risk

Pre-completion or construction risk is the risk that the project is not completed on time, on budget and/or up to the required performance standards. The likelihood of these events occurring and their potential consequences are assessed. In reviewing these risks, Fitch considers the following factors: the contractors, projected costs, delay risk, technology and other terms of the construction contract. Construction risk is often the greatest risk in a project. However, in strong projects it is possible to mitigate this risk and achieve investment-grade ratings.

Contractors

Each of the contractors involved in the construction process is analyzed for experience and credit quality. The contractors' records of completing projects on time, on budget and up to the required performance standards are reviewed. Strong contractors have significant positive international experience. The contractors should be able to demonstrate previous experience with the technology and the type of project. Previous experience in the country where the project is located is desirable, as it will aid the contractors in understanding the work environment and the likely obstacles they may face. In addition, local exposure will help the contractors in choosing local partners, subcontractors and/or suppliers.

Generally, Fitch considers the involvement of local contractors to be advantageous due to their previous business and political experience in the country. In addition, the involvement of local contractors may reduce the political risk of the project. For example, internal opposition to the project may be reduced by the involvement of local parties.

The staffing requirements and the labor relations of the contractors are examined. The contractors should be able to draw on a sufficient base of skilled and unskilled labor. Any other factors affecting the ability and willingness of the contractors to perform their obligations are analyzed.

The financial health of the contractors is assessed. This is done to ensure that the contractors have the necessary resources to complete the project or meet any other obligations to the project that they may

have. In many projects, the contractors will be required to post performance bonds.

Costs

The risk that the construction costs will be greater than budgeted and the effect this could have on the ability of the project to make debt service payments are analyzed. In making this determination, Fitch examines the terms of the contract and the construction budget.

The construction contract is reviewed in order to determine under what circumstances the price can be increased. Construction contracts that pass on the risk of cost overruns to the contractors reduce the risk of cost overruns. These contracts provide significant motivation for the contractors to be on or under budget. Generally, in order for a project to receive an investment-grade rating, Fitch requires fixed-price turnkey contracts. However, the value of fixed-price turnkey contracts depends on the strength of the contractors and hence their ability and willingness to deliver on their obligations.

The construction budget is also reviewed. Even with fixed-price turnkey contracts, it is important that the budgeted cost of the project is reasonable and achievable. If this is not the case, the likelihood of future disputes is increased. For example, if a contractor is not making sufficient money on a project, the risk of the contractor not completing construction as agreed may be increased. In this case, the quality of the contractors' work may decrease if the project is no longer considered an important priority. This could affect the future performance of the project and hence the project's cash flows.

In order to determine the reasonableness of the budget, the cost of the project is compared with similar projects. Unique features of the project, such as difficult terrain, are considered in this analysis. The process by which the contract was awarded is reviewed. For example, if the contract was awarded by tender and the winning bid was substantially lower than competing bids, the reason for the cost difference will be investigated. It may be that the contractor has a significant competitive advantage or the contractor has bid too low. The adequacy of contingencies is also reviewed. Fitch requires that an independent expert review the budget and provide conclusions as to its achievability.

Delay Risk

Delay risk is the risk that the project is not completed by the projected completion date. In order to determine the likelihood of the construction schedule being achieved, Fitch reviews factors that could delay scheduled completion of the project, including the strength and experience of the contractors (as previously discussed), the length of the projected construction period, the technology, the availability of building materials and supplies, the terrain over which the project is being constructed, the risk of not receiving permits as and when required and the exposure to labor problems.

Delay risk will vary with the stage of development of the project and the length of the projected construction period. Projects that have longer construction periods are generally considered more risky. Delay risk can be lower for projects with significant construction already completed. Construction schedules in stronger projects will provide a cushion in the schedule for unanticipated delays.

Projects that use proven conventional technology are considered less risky. Generally, it is more likely that projects that involve new and unproven technology will run into unforeseen problems, which will delay the construction schedule.

Projects may be delayed because of the inability to receive materials and supplies on time. For example, materials and supplies that originate outside of the country may be delayed as a result of import problems. Assessing this risk includes a review of the suppliers.

The terrain over which a project is being built could cause potential delays. For example, projects that are built over mountainous regions or in regions with unpredictable weather may be much more susceptible to delay risk.

In some countries, certain projects have been the target of guerrilla attacks. If proper precautions are not taken during the construction phase, the potential for delay risk is great. Projects that are being constructed near population centers have a greater risk of public opposition, which could delay or halt the construction of the project.

The extent and timing of the requirement to receive consents and permits are reviewed. Often all of the necessary permits and consents cannot be obtained at

the outset. The risk of not receiving these consents and permits when needed and the effect of this on the construction schedule is assessed.

The potential for schedule delays due to labor unrest and substandard performance is analyzed. In some countries, there is a lack of a readily available supply of both skilled and unskilled labor. The need and availability of foreign workers is reviewed.

Fitch requires an independent engineer to perform an assessment of the project. As in all external reports that Fitch uses in arriving at a rating, the author of the report must be an experienced and reputable party. The independent engineer should review the construction schedule and comment on its attainability. Fitch reviews the analysis and conclusions of the independent engineer when assessing the delay risk. While the independent engineer's analysis and conclusions are an important part of the review process, the conclusions must be well reasoned and supported by the facts. Ideally, the independent engineer will have previous experience in the country.

Technology

As discussed above, during the pre-completion phase Fitch is concerned with technology issues that could have an effect on the ability to complete the project on time and on budget. In addition, the risk that the project will not be completed to the required performance standards is analyzed. For example, a power plant may be required to meet certain heat rate standards or suffer a reduction in tariffs. The risk for projects that make use of conventional proven technology is lower.

The contractors may be required to provide warranties as to the performance of the project. The length of the warranty period should be commensurate with the risks of the project. The warranty period should not begin to run until the project has met satisfactory completion testing.

Prior to commissioning and hence the beginning of the operation phase, an independent engineer should be required to confirm that the project has in fact been completed to the required standards, which would typically be recognized international standards. Fitch requires that the independent engineer confirm the reasonableness of the completion test.

Other Contract Terms

In addition to the matters outlined above, Fitch reviews the construction contract for the presence of other terms. For example, projects that receive a higher rating would be expected to have sufficient bonus and penalty payments if the project is not completed on time, on budget or up to the required performance standards. The penalty payments that the contractors are liable to pay should at least mirror the payments that the project company or vehicle may incur under any of the project agreements. For example, if the project company is required to compensate an offtaker for delay in completion of the project, then these costs should be passed on to the contractors when they are responsible for the delay. Penalty payments should be sufficient to provide for lost revenue that would be required to service the outstanding debt under stress scenarios commensurate with the rating. Any penalty payments must be received on a timely basis.

Fitch's analysis typically focuses on the penalty payments and their sufficiency to cover added costs of the project company. However, the presence of potential bonus payments is considered a positive as it may provide additional incentive for the contractors to exceed targeted performance.

The dispute mechanisms in the construction contract are reviewed. A reliable forum and mechanism should be provided for dispute resolution. Generally, this means that dispute resolution should be governed by internationally recognized standards. Of particular concern is the potential impact on the cash flows of a dispute. A dispute that is not resolved quickly can result in delays and cost overruns to the project. This can impair the ability to service the debt of the project.

Adequate insurance should be in place to deal with potential operating problems. The construction process should be well managed. Construction should be monitored with on-site inspection. The funds should be held in trust and not released until approval has been received by an independent engineer. In addition, the independent engineer should approve progress payments.

If any connecting infrastructure has to be built, Fitch will assess this risk. For example, a power plant may require a pipeline to be built in order to ship fuel to the plant, or a mine may require that a port be built or expanded so production can be exported. In assessing these risks, Fitch will review the same factors that have been outlined above.

Operation Risk

The operation risk is the risk that the project will suffer a reduction in productivity or output as a result of outages and/or failure to meet expected performance standards or, alternatively, the project will incur costs that are greater than projected. Either of these may result in a reduction in projected cash flows and resulting penalty payments under various of the project contracts and therefore impair the ability of the project to service its debt. These risks are reviewed to assess the likelihood of the events occurring as well as the consequences if they do. The extent and nature of the risks vary by project. The analysis of operation risk focuses on the ability and financial health of the operator, the cost structure, technology risk and the supply risk.

Operator

The operator is assessed based on its ability and motivation to carry out its obligations. The operator should have a demonstrated ability to operate the facility efficiently and effectively. This is evidenced by past experience with the type of project and technology. Ideally, the operator will have operated similar facilities in the same country or region.

The staffing of the project is reviewed. The facility should be run by competent parties. In projects in emerging markets, the operator may use expatriates to staff the facility during the early life of the project. The operator will then hire local people and train them to operate the facility, with the goal of eventually replacing the expatriates. Fitch will review both the availability and qualifications of expatriate and local staff.

The motivation of the operator to carry out its obligations is influenced by various factors, including compensation and the presence of bonuses and penalties in the operating and maintenance contract. The operator's compensation should be reasonable. An operator that is undercompensated may be motivated to take shortcuts in its obligations. For example, if an operator that is undercompensated bears some or all of the responsibility for repairs and maintenance, it may delay or reduce these expenditures. This could result in problems with the performance or repairs to the facility in the future when the debt is still outstanding.

The compensation may be fixed or include performance-based measures. Achievable performance-based measures are considered a positive as they provide incentives for the operator to achieve or surpass projected performance.

Penalties should be reasonable and ideally cover lost revenues that result from substandard performance by the operator. This lost revenue may be the result of reduced production or availability of the project, penalty payments due under the project agreements or, alternatively, reduced cash flow as a result of higher operating and maintenance costs.

Other factors that could have a positive influence on the operator's expected performance are the importance of the project to the operator and any other involvement that the operator has in the project. An operator that is new to a country and hopes to increase its exposure to the country through future projects may be particularly concerned with its performance on the project. Often an operator may also be a sponsor of the project. In this case, the ability of the operator to perform its obligations effectively and efficiently may influence the return it receives in its role as a sponsor of the project. The operator's financial health is reviewed to provide assurance that the operator will continue to operate the facility throughout the life of the debt.

The operating and maintenance contract should provide for dispute resolution. If the operator disputes the responsibility to incur added costs or make penalty or damage payments, there should be a mechanism to deal with this so the cash flows necessary to service the rated debt are not interrupted.

Costs

Fitch reviews the makeup, timing and potential volatility of operating costs. Operating costs vary by project but generally will include some combination of the following: fuel, labor, taxes, insurance, power and maintenance.

The potential volatility of the operating expenses are stressed in the cash flow analysis. Generally, operating costs that represent a pass through cost in determining the revenue component of the project are considered positive as they reduce the potential volatility of the cash flows. The exposure of the project to unanticipated operating costs is reviewed. For example, stricter environmental requirements in the future may result in an increase in project operating costs.

Technology

Technology risk exists in both the pre- and post-completion stages. Technology risk during the operating phase is the risk that the project does not perform to the required standards or does so at a greater cost than is budgeted as a result of problems related to technology. This risk varies significantly by project type. Generally, the risk is not as great when the technology is conventional and proven. At the very least, it is easier to quantify this risk based on past experience.

However, it is important to realize that past performance may not be an indicator of future performance. For example, a power plant that is not properly maintained may operate at low outage levels and high efficiency levels for an initial period of time. The substandard maintenance and repair may result in increased and longer outages as well as efficiency declines in the future. Technology risk increases significantly with new and unproven technology.

A feasibility study should be undertaken by an independent recognized expert with a proven track record in the field. Issues addressed by the feasibility study should include: capacity, availability, expected outages, repair and maintenance levels, future required capital investments, spare part requirements, expected efficiency levels and environmental issues. The feasibility study is reviewed for completeness and consistency in its conclusions as well as its assumptions.

Supply Risk

Some projects require that a resource or product exist or be available in order for the project to operate. This resource or product can take many different forms. For example, in a mining project there must be a sufficient supply of a certain mineral. For a thermal power plant to produce electricity it must be supplied with fuel. The supply risk is the risk that these resources or products are not available in sufficient quantities and/or at prices that allow the project to operate as projected.

In projects that involve the extraction of a resource or commodity, an assessment of the supply risk will involve a determination of the sufficiency of reserves and the cost of extracting them. Fitch requires a study by an independent expert addressing these issues.

If the resource or product is being supplied to run the project, such as fuel in a thermal power plant, Fitch confirms the availability of the resource or product. This includes an analysis of the price at which the resource or product is available. In projects where this type of supply risk is high, Fitch may require long-term supply contracts. These contracts may fix the volume and/or price at which the resource or product is supplied.

The importance of fixing the price at which the resource or product is supplied depends on the volatility of the price of the product and how the offtake price is determined. If the resource or product represents a pass-through cost in determining the revenue of the project, then generally fixing the price of the input is not as important. However, this may not be the case when increases in the cost of the resource or product supplied to the project make the cost of the project's output uneconomical to produce.

Fitch also examines how the product or resource is supplied to the project. This may involve a review of the connecting infrastructure through which the resource or product is delivered. For example, an oil-fired power plant may require that the oil be shipped through a port and pipeline to reach the plant. Where the risk of interruption in the connecting infrastructure is considered high, reliable alternative supply routes should be available.

The credit quality of any party involved in supplying the resource or product is assessed. If they are not strong credits, the availability of back-up suppliers may be required.

■ Offtake Risk

Offtake risk is the risk that the demand for the output or service does not exist at the price at which it is provided or the offtaker is unable or refuses to honor its commitment to purchase the offtake. In analyzing offtake risk, Fitch is concerned with how stable the cash flows are and hence the project's ability to meet its operating expenses and service its debt.

The economics of the project can be even more important in assigning a rating to international project financings. This is especially important in emerging markets, where less reliance may be placed on contract enforceability due to less reliable and developed legal systems.

While demand may exist for the project's output, the offtaker may not have the ability or the willingness to pay the prices necessary to make the project

economical. For example, consumers may not be able or willing to pay for access to a toll road when an alternative free road exists. Where there is one offtaker such as a government-controlled utility buying all of the project's output, demand risk of the project is shifted to the utility. In this case, the utility may choose to subsidize the service for various political and economic reasons.

In analyzing the offtake demand for infrastructure projects, Fitch differentiates between multi-user and single- or few-user projects. In a multi-user project, there are many end users of the project. Multi-user projects would be projects such as toll roads or telecommunications projects. Single-user or few-user projects are projects for which the offtaker or throughputter is a single entity or a few entities. Generally, power and pipeline projects would fall into this category.

Multi-User Projects

Market Risk:

Fitch's analysis of multi-user projects focuses on market risk. Market risk is the risk that there is not sufficient demand for the project's output at the prices necessary to generate sufficient cash flows to service the rated debt and make the project economically profitable. The demand projections for the project are reviewed. This includes an analysis of the need for the project and both the ability and willingness of consumers to pay for the output or service. An important consideration in this analysis is the proposed tariff or price of the project's output.

In reviewing the potential variability of demand, Fitch reviews the underlying assumptions used in arriving at the projections. For example, demand may be related to GDP growth in the country. In this case, the GDP growth assumptions would be reviewed and stressed in the cash flow modeling. Other macroeconomic assumptions such as inflation are also reviewed.

For multi-user projects with an operating history, Fitch will make use of the historical operating information. The historical information will be reviewed for volatility, growth and other trends. The value of the historical information will depend on the extent and reliability of the information as well as its value in predicting future performance. For example, while the past traffic flows on a road may serve as a useful indicator of future traffic flows, this may change significantly if the road has previously been a free road and now is proposed to be turned into a toll road.

Often the historical information either does not exist or provides little or no predictive value. In this case, Fitch requires a demographic and demand study by a recognized independent expert. The study is examined for the expected demand, the sensitivity of the demand to different assumptions and the reasonability of the assumptions. In addition, the record of the expert in predicting demand is examined.

Single-User or Few-User Projects

The focus with a single-user or few-user project is generally different than with a multi-user project. In these projects, one entity or a few entities are expected to purchase the project's output. Hence, the ability of the project to generate cash flows is heavily dependent on the ability and willingness of the offtaker to purchase the output. Generally, in higher-rated projects, the purchase contract is a take-or-pay agreement or some other form of "hell or high water" arrangement. This contract should be for a term at least equal to the life of the rated debt. In determining the risk that the offtaker will be unable or unwilling to honor its commitments, Fitch reviews the credit quality of the offtaker and the terms of the purchase contract(s), including the following: the pricing mechanism for the output, the quality of the output, the quantity of output and the presence of incentives.

Offtaker:

The ability of the offtaker or purchaser to perform under the purchase contract is dependent on the financial health of the entity or entities. If the entity (or entities) is (are) rated, Fitch will use this as a basis for determining the financial health of the offtaker(s). In emerging markets, this can present unique problems. An increasing number of companies are receiving ratings in emerging markets. However, at the present time, there are still many large companies that act as offtakers that have not been rated. In order to evaluate the project, it will be necessary for Fitch to perform a credit assessment of the offtaker.

The offtaker's ties with the government are of particular concern in many emerging markets. Often the offtaker will be 100%- or majority-owned by the government. The rating of the offtaker may depend on government support. With the increasing privatization of corporate entities in emerging markets, the offtaker may be sold before the rated debt is retired and hence

change the credit quality of the entity. As such, an important focus of the analysis of an offtaker controlled by a government is the likelihood of privatization and the resulting effect on the financial health of the offtaker and any surviving government commitment to the project.

Pricing Mechanism:

The pricing mechanism of the offtake contract should result in a stable and predictable cash flow to the project so that it is able to meet its operating and maintenance expenses and service its debt. Stronger projects have a good matching of revenues and expenses. If the project has large fixed costs, such as a power project with debt service costs and a fixed commitment under a fuel supply agreement, the price paid for the output should be in large part fixed, based on these costs. If the costs of the project are more variable, then this should be reflected in the purchase price. For example, if the price of fuel to a power plant is not fixed, then a purchase price based in part on the cost of fuel is desirable.

In reviewing the purchase price, it is important to review the overall economics of the project. This involves a review of the price the offtaker is able to charge consumers for its end product. For example, typically a utility offtaker would purchase power from a power plant and resell electricity to consumers. The price that consumers are willing and able to pay is an important part of the analysis of the project. In many emerging markets, a government-owned utility is subsidizing the purchase of the electricity by consumers. This may influence the motivation of the government and the utility to honor its contractual commitments. Stronger projects would be low-cost producers and consumers would be both willing and able to pay market prices for the project's output.

Quality:

The purchase contract may provide that the revenue will vary with the quality of the project's output. For example, the quality of minerals in a mining project will determine the offtake price. Alternatively, the offtake price in a power project may assume that the plant achieves certain efficiency standards related to the amount of fuel used to produce a defined amount of electricity. If these efficiency standards are not met, then the price paid for the power would be affected.

These risks are identified and assessed. Typically, the assessment of these risks involves a review of an independent engineer's report, which addresses the quality of the resources (e.g., oil or mineral reserves) or the efficiency level of the project (e.g., a power plant). The potential volatility of these factors is important in stressing the cash flows.

Quantity:

Quantity issues relate to the amount and timing of output that the offtaker is required to purchase. A purchaser may be required to purchase a minimum quantity over a period of time, such as a year, but is permitted to purchase the quantity at any time over this period. Alternatively, the quantity of output may vary throughout the project in accordance with seasonality or projected increasing demand. For example, a purchaser of power may have to meet heavier end-user demand in the winter and therefore require greater purchases during this time of year.

This variability of quantity purchased does not present a problem in itself, as long as the cost structure of the project reflects the demand for output. Difficulties arise if the purchaser is obligated to take a certain quantity of output but has a lot of leeway when the output will be purchased. In this case, the volatility of the revenue may make it difficult to meet ongoing expenses, including debt service payments. If the quantity to be purchased is subject to these types of uncertainties, it may be difficult to rate the project unless the structure of the transaction is able to deal with this variability of the quantity purchased and the resulting variability in cash flows.

Incentives:

Typically the purchase contract(s) will contain provisions for bonuses and penalties. These payments may be payable by either the project company or the offtaker. Bonus and penalty payments may take the form of a cash payment, price adjustment or a reduction of output purchased. Typically, they relate to quality, quantity or efficiency issues.

While bonuses can serve as a motivating factor for the project, the potential penalty payments often receive more attention when rating projects. This is because the penalty payments have a direct effect on the ability to make debt service payments. Penalty payments that the project incurs reduce the cash flow of the project. On the other hand, penalty payments received from the purchaser may compensate the project for lost revenue and/or penalty payments that the project may have incurred with other parties.

In stronger projects, the risk of the project incurring penalty payments under the offtake contract should be passed on to the parties that bear the responsibility for the penalties. This could be an operator, contractor, supplier or other party. This serves the dual purpose of motivating the other parties to perform their responsibilities and obligations up to the required standards and requiring them to compensate the project if they fail to perform as required. For example, a power plant may not be able to deliver the contracted quantity of electricity to a purchaser because the fuel supplier fails to deliver the contracted amount of fuel. In this case, the project should be entitled to receive offsetting penalty payments from the fuel supplier to compensate for the required penalty payments to the purchaser. Alternatively, the operator may be responsible for a pipeline's inability to deliver required quantities of output to the purchaser. In this case, the operator should be liable for the penalty payments.

Penalty payments are also required to be paid by the offtaker if it fails to purchase the contracted quantity of output. For example, the purchaser may need to construct connecting infrastructure in order to receive the output. This would often be the case with a pipeline or power project. If the connecting infrastructure is not in place by the time the purchaser is obligated to take the output, penalty payments should result. These penalty payments should compensate the project for its operating costs, debt service expenses as well as the penalty payments it may be required to pay to other parties involved in the project. For example, the project may be obligated to purchase a minimum quantity of fuel under a fuel supply agreement. If the project fails to purchase the minimum quantity of fuel, then it would be required to compensate the fuel supplier.

■ Country Risk

Projects in international markets face many risks that can vary significantly by country. Ideally, the project would operate in a stable and predictable environment. However, often this is not the case. In particular, in many emerging markets the environment for projects is untested or uncertain. Fitch's analysis of country risk, as it affects a project, focuses on three broad categories: the economic environment, the political and regulatory environment and currency risk. These risks are analyzed as they affect the entire project from construction through operation. Some of these factors have already been discussed when considering the individual risks in a project.

Economic Environment

In assessing a project, it is important to understand the economic environment in the country and the potential effect this could have on the project. This assessment considers both the macroeconomic and microeconomic environment in which the project operates and is expected to operate in the future. Many of these factors are considered when Fitch's sovereign analysts assign a rating to a country.

In assigning a rating to a project, it is necessary for the sovereign to have a rating. If Fitch does not currently rate the country, the sovereign analysts perform a credit assessment of the sovereign. Ordinarily, the rating assigned to senior foreign currency obligations of the government represents a ceiling for other ratings assigned to issuers domiciled within the government's jurisdiction. Hence, debt of other issuers in a country may approach – but typically is not rated higher than – the rating of a sovereign. In some circumstances, Fitch will rate above the sovereign ceiling on a local currency basis.

Generally, in situations in which Fitch has assigned a rating above the sovereign foreign currency ceiling, it has done so as a result of a revenue stream that is generated offshore in hard currency.

Additionally, Fitch is prepared to go above the sovereign ceiling in cases where a preferred creditor such as the World Bank or the International Finance Corporation (IFC) provide mitigants to the sovereign risks. These types of structured transactions can reduce transfer and convertibility risk. Projects can also be rated above the sovereign ceiling when political risk insurance is present. However, typically, a project finance rating would be constrained by the rating of the sovereign.

Political and Regulatory Environment

Fitch reviews the political and regulatory environment in which the project is being constructed and operated. A stable and predictable environment for a project is evidenced by the government's commitment, public support and the regulatory and legal environment in which the project is constructed and operated.

The likelihood of the government interfering with the project at some time during the life of the debt to which the rating is assigned is reviewed. Government interference with the project could result in reduced revenues, increased costs or other factors that would hinder the ability of the project to service its debt. For

example, government action may result in an unfavorable change in the regulatory environment, expropriation or nationalization of all or part of the project or an increase in public opposition to the project.

In reviewing the risk of government interference, the past history of the country will be examined. Generally, a country that has a history of negative interference with projects will be considered more likely to continue this behavior in the future as opposed to a country which has not exhibited this type of interference.

However, past behavior is not always a good indicator of future behavior. As such, Fitch reviews the incentives that exist for the government not to interfere negatively with the project. This will be heavily influenced by the political and economic importance of the project to the country. The potential consequences of the government interfering with the project may be significant. For example, if the government were relying on this type of investment in order to do future financings of projects, this would likely have an effect on the inclination of the government to interfere negatively with the project. In this regard, a government may be less likely to interfere in industries considered more important to the country.

In some situations, government assurances will be considered a positive factor in analyzing a project. For example, the government may provide assurances regarding exchange controls, consents, approvals, stable environment and noninterference with the project.

Public support for the project is reviewed. Public opposition to the project can result in delays or increased costs to the project or, in more extreme cases, abandonment of the project. Public support can be influenced by factors such as nationalism and the projected benefits of the project to the local communities both in terms of the output of the project and employment of local workers. For example, a power plant that is expected to provide significant local employment and provide affordable power to an area used to experiencing blackouts may receive significant support from the local community.

Stronger projects operate in a predictable regulatory environment. Characteristics of a weak regulatory environment include high potential for changes in the regulatory regime, inability to obtain construction and operating permits on time and timely tariff adjustments not being permitted or made.

The effect that the country's legal system could have on the transaction is reviewed. Ideally, the legal system would be a well-developed system that respects the validity of contracts and the rights of property owners and in which there exists well-settled corporate and commercial law. However, often this is lacking in emerging markets and, as such, greater emphasis is placed on the economics of the project. Other legal issues that are reviewed include the ability to take security over the project assets, the governing law of the project agreements and the ability to enforce judgments from other jurisdictions.

Currency Risk

Currency risk involves exchange rate volatility, transfer and convertibility risk. Exchange rate volatility is analyzed for the extent of potential devaluations and the resulting impact on the project. Transfer and convertibility risk is one of the factors that generally constrains the rating of the project to the sovereign ceiling.

Often the project will generate revenue in the local currency while part of the project expenses, such as debt service payments, will be made in a foreign currency. In order to mitigate the exchange rate volatility risk, some projects tie the tariff that is charged in local currency to the movement of some other variable. For example, the project revenues may be indexed to the exchange rate or domestic inflation. Alternatively, the tariff may be denominated in U.S. dollars.

Fitch considers stress scenarios for currency devaluation based on the economic environment in the country. It is important to consider the end consumers' ability to absorb the increased cost brought about by a currency devaluation. For example, a toll road with U.S.-dollar debt exposure, but operating revenues in another currency, may be able to legally adjust its toll rate in order to maintain a minimum coverage level if the project experiences adverse currency fluctuations. However, this might make the toll road unaffordable for a large number of consumers, thereby negatively impacting traffic flows. A mitigant to local currency devaluation risk is frequent sweeps of toll receipts into offshore U.S.-dollar trust accounts.

It is possible to use derivative instruments and swaps in order to mitigate exchange rate volatility. However, generally these markets are not well developed in emerging markets or can be utilized only at an extremely high cost.

Structure

Many project risks are reduced through the allocation of risks to the different project participants. For example, a large part of the construction risk may be assumed by the contractors, or an operator may be partly responsible for operating and maintenance expenses that exceed projections. However, when structuring a tranche of debt that is to receive a rating there may need to be greater mitigation of some of the project risks. Fitch's review of the structure of the debt issue involves the following areas: the cash flow mechanics, the capital structure and the legal issues.

Cash Flows

Under most circumstances, a project will rely on the revenue from a tariff or some other charge in order to service its debt. However, the debt issue will typically be structured so that the project costs can be serviced from alternate sources of funds in certain circumstances.

The tariff structure is reviewed in order to determine the potential exposure of the project to a reduction in projected cash flow. This includes an analysis of the market risk to which the project is exposed. A tariff that is determined based on the market price of the project's output may be subject to significant volatility. This risk may be mitigated by the requirement for higher pro forma debt service coverage ratios. Alternatively, the project costs may represent a pass-through cost in the calculation of the tariff. Tariffs that represent a good matching of revenues and expenses will expose the project to less volatility in cash flows.

The project may be exposed to temporary liquidity problems. For example, a strike at the project or any of the connecting infrastructure may shut down the project and result in an interruption of revenue. A debt service reserve account can be used to service debt during temporary difficulties with the project. Alternatively, timing problems in collecting revenues may expose the project to a temporary shortage of funds and a resulting inability to meet operating expenses. An operating reserve account may mitigate this risk. The size of any reserve account depends on the extent and nature of the risks that the reserve is designed to mitigate.

Restrictions on payments to equity and subordinated debtholders may be required in order to mitigate certain project risks. For example, typically the equity and subordinated debtholders would be prohibited from receiving payments if the project fails to meet certain minimum performance standards. These restrictions may be based at least in part on the project achieving certain minimum debt service coverage ratios. The restrictions will vary by the extent and nature of the project risks.

In some projects, termination payments are used to mitigate certain risks. An example is a project that does not meet its required completion schedule and, as a result, the party responsible for the delay may be required to make termination payments. Essentially, these payments would result in this party purchasing the project and retiring outstanding debt. Termination payments should be sufficient to retire the outstanding rated debt. The strength of this structural feature depends on the ability and willingness of the payor of the termination payments to carry out its obligation.

Insurance can be used to mitigate some project risks. For example, insurance may be used to minimize certain *force majeure* risks. Insurance coverage would typically include business interruption and replacement costs. In assessing the use of insurance, the quality of the payor and the likelihood of receiving the insurance on a timely basis are reviewed. The investors should have security over the insurance proceeds. Typically, Fitch would expect an independent expert to comment on the adequacy of the insurance coverage.

Fitch reviews the above-mentioned cash flow mechanics as well as any other potential sources of funds for the project. As part of this review, various stress scenarios are run on the projected project cash flows. As the risks of each project are different, the stress scenarios vary by project. The required debt service coverage levels vary by the nature and extent of the project risks.

Capital Structure

The capital structure varies by project. Generally, the greater the risk, the higher the equity that is required. The debt-to-equity ratio has an influence on the debt service coverage ratios and also evidences the sponsors' commitment to the project. The timing of the equity infusion and the necessity for a back-up equity commitment vary by project. In some cases, Fitch may consider subordinated debt to be the equivalent to equity. Generally, in these cases the subordinated debt must not be able to accelerate the project into bankruptcy. Typically, Fitch requires that the sponsors covenant to maintain a minimum equity

percentage and investment in the project company or vehicle both pre- and post-completion.

In some projects, the project company may be relying on many sources of funding. In projects with longer construction periods, this funding may be raised at different times. Typically, committed funding sources will be required to be in place. In addition, there should be the availability of back-up funding in case any sources of funding do not materialize. For example, a project may plan to raise a substantial portion of its debt in the capital markets. If it is unable to place all of this debt in the capital markets, it will be in need of alternative sources of funding. These issues should be addressed prior to the project company going to the capital markets.

Legal Issues

Many different legal issues arise in the context of project financings in international markets. As previously mentioned, in some international markets, such as emerging markets, the economics of the project take on even more importance because the legal environment may be unpredictable and one typically cannot rely on the enforcement of contracts to the same extent as in more developed markets. Many of the legal issues considered in an international project finance have already been discussed above – for example, the predictably of the legal system, the taking of security over the project assets and the enforcement of project agreements.

In project financings, the lenders are looking to the cash flows the project will generate in order to service the debt. Often, the project assets by themselves may have little value. For example, the value of the assets of a pipeline may not be significant if there is not a product to ship through the pipeline. Nevertheless, it is important that the bondholders have security over the project's assets. This includes not only the project's physical assets but also assignments of the project contracts and any cash accounts. This can discourage competing claims and increase the lenders' bargaining position if any disputes arise.

Fitch requires opinions from both local and foreign counsel addressing issues such as security over the projects' assets, enforceability of contracts and assignment of insurance proceeds. Fitch retains outside counsel to review the project documents and legal opinions.

■ Conclusion

Project financings are complex transactions with many risks. Projects in international markets have additional country risk. However, projects that have strong economics, strong participants and are well structured can achieve investment-grade ratings, though generally the ratings of the debt issued by the projects will be constrained by the rating of the sovereign.