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Capital Markets Financing for Developing-Country Infrastructure Projects

Robert Sheppard
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Robert Sheppard

Robert Sheppard, a consultant based in Charlotte, NC, is an attorney and former investment banker with twenty years of experience in the field of project finance. As a Managing Director at Bank of America Securities LLC, he was responsible for Project Finance Capital Markets and was previously co-head of the Global Project Finance Group at Bank of America. Prior to the merger of NationsBank with Bank of America, Mr. Sheppard was global head of Project Finance at NationsBank. The views expressed in this paper are those of the author and do not necessarily represent the views of the United Nations. Comments should be addressed to the author at the United Nations, c/o Mr. Barry Herman, Room DC2-2120, United Nations, New York, NY 10017 (e-mail: projfin@bellsouth.net).

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Authorized for distribution by **Ian Kinniburgh**,
Director
Development Policy Analysis Division
Department of Economic and Social Affairs
United Nations

Abstract

This paper reviews risk-mitigating structures to improve the ratings of debt securities issued by developing-country infrastructure projects, with an emphasis on electric power projects. It reports on the opinions of several important constituencies which were interviewed as part of this study: fixed-income investors, monoline insurers, investment bankers, rating agencies, bilateral and multilateral agencies, and private political risk insurers. Finally, the paper reviews three new approaches for promoting increased access to the capital markets for infrastructure projects: structures to encourage local capital markets financing, new uses of partial risk guarantees, and expanded use of expropriation coverage.

Key words:

Risk mitigation, capital markets, bonds, infrastructure projects, electric power, project sponsors, financial insurers, institutional investors, investment banks, rating agencies.

JEL classification code:

O16, F3, G15, G22, G23, G18, G24, G28.

Contents

	<i>Page</i>
I. Purpose of This Study	1
II. Introduction	1
III. Background on Current Market Practices	1
Previous Capital Markets Financings	2
Structures to Breach the Sovereign Ceiling	3
Mitigating the Risk of Devaluation	5
Local Capital Markets Financing	6
Emerging Role of Monoline Bond Insurance	6
IV. Market Participants' Views on Current Practices	6
Views of Institutional Investors	6
Views of Investment Bankers	8
Views of Rating Agencies	9
Views of Certain Multilateral and U.S. Government Agencies	9
Views of Project Sponsors	12
V. Using the Capital Markets to Further Economic Development	13
Local Capital Markets Financing	13
Targeted Risk Guarantees	13
Comprehensive Guarantees	13
VI. Conclusion and Key Issues Going Forward	14
Notes	15

I. Purpose of This Study

This study is an outgrowth of the United Nations International Conference on Financing for Development held in Monterrey, Mexico in March 2002. At that meeting government officials and representatives of the business community addressed the need to increase access to bond markets for developing-country infrastructure projects through enhanced risk sharing between public and private sector financial organizations. It was suggested that an Independent Experts Advisory Group be established to study current risk sharing efforts and to propose ways that such risk sharing might be improved. It was decided to convene a meeting, which was held October 29, 2002 in New York, to discuss the access of developing countries to this type of financing and the question of the usefulness of such an ongoing Experts Group. To provide a basis for discussions at this meeting, the United Nations funded the preparation of this background briefing paper. It has subsequently been revised to incorporate the views expressed by participants at the meeting.

This study examines existing risk mitigation techniques employed in capital markets financings for developing-country infrastructure projects and assesses the current market acceptance of these structures. It also describes new initiatives to facilitate capital markets financings and attempts to suggest further enhancements which will enable the capital markets to become a reliable source of financing for infrastructure projects in developing countries. The study is based on interviews with fixed-income investors, monoline insurers, investment bankers, rating agencies, bilateral and multilateral agencies, and private political risk insurers¹.

II. Introduction

While at one time most infrastructure projects in developing countries were financed by host governments out of general government revenues, there has been a trend in recent years for publicly developed facilities to be financed on a project basis or for infrastructure projects to be purchased or developed by the private sector. In such cases financing is usually obtained from the private sector—in many instances with foreign private investors and creditors playing a major role. Given the high initial capital costs of infrastructure projects, long-term financing is essential for privately-owned infrastructure projects to be financially viable.² One of the

most common forms of financing has been “non-recourse” (or “limited recourse”) financing. This means that the income used to repay creditors comes entirely (or primarily) out of the revenues generated by the project itself. Creditors have little or no recourse to call upon the corporate or government owners in the event that the project has inadequate cash flow to service its debt.

Historically, the greatest part of the financing for developing-country infrastructure projects has been provided by commercial banks, often in conjunction with officially-backed export credit agencies (“ECAs”) or multilateral agencies. In the past, commercial banks continued to finance developing country projects, even during difficult periods when the capital markets were closed for a particular developing country (although often with tighter structures than previously). Recently, however, commercial banks have, in general, retreated from developing-country project financing. This contraction is based less on lenders’ credit experience in international lending than on changing business strategies within the financial services industry, but the effect on economic development is the same regardless of the motivation.

In the context of this strategic redirection by commercial banks, the ability of properly-structured transactions to obtain financing in the capital markets has become more important. As one of the participants in the October 29th meeting noted, it is unlikely that investors will quickly forget recent difficulties in emerging markets and be as willing to provide funding for below-investment grade countries. New forms of risk mitigation will be necessary if infrastructure projects in such countries are to regain access to the capital markets. The international capital markets are the largest and deepest pool of financing in the world, and in conjunction with local capital markets, which represent an essentially untapped source of funds for infrastructure projects, they can make a huge contribution to economic development, if effective transaction structures are developed.

III. Background on Current Market Practices

Infrastructure projects are generally regarded as including capital-intensive facilities in the following sectors:

- Electric power (generation and distribution)
- Energy (refineries, pipelines, processing facilities, etc.)

- Telecommunications
- Water / Sewer
- Transportation (toll roads, bridges, ports, railways, etc.)

The output (e.g., electric power, water) from most infrastructure projects is sold primarily in the domestic market and paid for in local currency. The bonds used to finance these projects are exposed to the risk that devaluation of the host country's currency will reduce the dollar value of their local currency revenues to a level which will not service dollar-denominated debt.³ In addition, they are exposed to the risks that local authorities may block the convertibility of local currency revenues into dollars or block currency transfers from the host country. These risks generally limit the ratings of dollar debt issued by infrastructure projects (as well as local corporate issuers) to a rating no higher than the sovereign rating of the host country ("the sovereign ceiling"⁴).⁵

Infrastructure projects may also face some form of market risk that affects both the volume of their sales and the prices at which these sales occur. This market risk substantially increases the difficulty of structuring such projects to achieve investment-grade debt ratings. However, power generation projects in developing countries have historically been able to enter into long-term power purchase agreements ("PPAs") which mitigate both price and volume risk. Electric distribution companies often have tariff regimes that provide a high degree of price certainty and this, together with an inelastic demand for electricity, can provide the functional equivalent of a long-term contract. However, while such projects may not face market risks they may face regulatory risks—tariff regimes may be changed and regulatory authorities may not properly implement the pricing rules.

This study will focus on the electric power sector because its problems are easier to solve as a result of its greater revenue certainty. The results of the study are broadly applicable to other, non-export projects because in every respect except market risk, these projects face the same risks which make it difficult to finance electric sector projects.

Previous Capital Markets Financings

Long-term financing of developing-country infrastructure projects can be placed in one of four categories depending on the rating of the project bonds and the sovereign rating of the country in which the project is located:

		Project Rating	
		Investment Grade	Below Investment Grade
Country Rating	Investment Grade	Type A	Type B
	Below Investment Grade	Type D	Type C

During the period 1993 through 1998, electric power projects of types A, B and C were realized. All these projects sold power pursuant to PPAs in which payments were made in U.S. dollars or indexed to changes in the U.S. dollar exchange rate.⁶

- **Type A:** Projects⁷ which issued debt with a (low⁸) investment-grade rating⁹; the host countries for these projects were Chile, Colombia, and Indonesia, each of which had a (low) investment-grade rating at the issuance of the project's securities.
- **Type B:** Transactions¹⁰ with below investment-grade ratings, which were located in countries with investment-grade or split ratings; the host countries for these projects were China and Trinidad & Tobago.
- **Type C:** Projects¹¹ which issued debt with a below¹² investment-grade rating; the host countries for these projects were Argentina, Mexico, and the Philippines, which had below investment-grade ratings at the issuance of the project's securities.

None of the projects during this period achieved a rating higher than the sovereign ceiling. In addition, the rating of each transaction tracked changes in the sovereign ceiling (unless the rating was negatively affected by project-specific risks). Projects in Colombia, and Indonesia were downgraded as the sovereign was downgraded, while the Mexican projects were upgraded recently along with the sovereign.

The crisis of 1997-1998 exposed the potential weaknesses of the dollar-indexed PPA model which was the basis for these financings. The Indonesian devaluation, which resulted in the renegotiation of dollar-indexed PPAs, threatened to push some projects into default and clearly illustrated the mechanism by which

country risk could cause infrastructure projects to fail. Although some of the countries which were downgraded during this period have subsequently returned to investment-grade status, investors have remained wary of projects with ratings which remain closely tied to the host country's sovereign rating.

Since 1998, only a handful of developing-country infrastructure projects have been financed in the capital markets. Although in the more optimistic market of the mid-1990s a few long-tenor, below investment-grade project financings were successfully launched, this approach was used on a limited basis then and has essentially been abandoned in the current environment. Instead, there has been a recent emphasis on devising new structures broadly applicable to project, corporate, and sovereign financings, with the aim of achieving investment-grade ratings for developing-country transactions that would otherwise receive below investment-grade ratings. Thus the focus has been on **Type D** projects.¹³

These new structures fall into three categories:

- Structures to breach the sovereign ceiling, which therefore permit the transaction's (global scale¹⁴) local currency rating to become its foreign currency rating
- Structures to mitigate the risk of devaluation, and
- Structures to facilitate the use of local capital markets, which can provide financing denominated in the currency in which the project earns its revenues.

These structures have been used primarily to achieve an investment-grade rating for a project (or other issuer) located in a below investment-grade country.¹⁵ The transactions utilizing these structures during the last four years were executed in a market which was much less favorable than that of the mid-1990s, but the scarcity of such transactions reflects more than investors' wariness about committing further capital to developing countries. The ability of a transaction to achieve an investment-grade foreign currency rating depends upon its ability to achieve an investment-grade local currency rating, and it has proved difficult to find circumstances in which investment-grade local currency ratings are obtainable.

Almost all recent transactions structured to breach the sovereign ceiling have been for Latin American issuers. After the crisis of 1997-1998, new project development in Asia slowed dramatically, and thus, there were fewer potential transactions to be structured. In addition, Latin America has a much more extensive history with structured transactions in the form of securitizations of

export receivables, and as a result, issuers in this region are perhaps more favorably disposed to highly-structured transactions.

Many of the recent transactions that utilized structures to breach the sovereign ceiling were for governmental or corporate issuers, rather than for infrastructure projects. These transactions illustrate techniques that can be applied to infrastructure projects, but the market for financing infrastructure projects has virtually disappeared.

Structures to Breach the Sovereign Ceiling

Three different approaches have been used to eliminate the constraint of the sovereign ceiling on a transaction's rating:

- A Loan / B Loan structures
- Partial credit guarantees
- Political risk insurance (covering the risk of currency inconvertibility)

The purpose of these structures is to enable a transaction to achieve an investment-grade foreign currency rating by removing the sovereign ceiling as a constraint. Use of these structures depends upon the transaction's being able to achieve an investment-grade rating on a (global scale) local currency basis; when the sovereign ceiling is removed as a constraint, the transaction's local currency rating becomes its foreign currency rating.

(1) A Loan / B Loan structures: In an A Loan / B Loan structure, a multilateral agency serves as "lender of record" for the loan (i.e., the A Loan, together with the B Loan). The agency retains the A Loan, funding it with its own resources, and sells the B Loan to a group of commercial lenders. A Loan / B Loan structures have been widely used in the bank market, but only occasionally in the capital markets.

This structure depends upon the "preferred creditor" status of the agency which is the lender of record. Although preferred creditors typically have agreements with the host country, the benefits of preferred creditor participation in a project are regarded as stemming from the reluctance of governments to allow the preferred creditor's loans to go into default and the corresponding willingness of the Paris Club to exempt such loans from the comparability-of-treatment principle in restructurings.¹⁶

The agencies generally regarded as possessing preferred creditor status are:

- World Bank
- Inter-American Development Bank

- Asian Development Bank
- African Development Bank
- International Finance Corporation
- European Bank for Reconstruction and Development
- Corporacion Andina de Fomento

The primary benefit provided by A Loan / B Loan structures is protection against the risk of governmental interference with currency transfer and convertibility. Thus the applicability of this structure depends upon a transaction's having an investment-grade local currency rating. The difficulty of finding projects which currently meet this requirement has, according to syndication officers at multilateral agencies, prevented this structure from being used to structure transactions which can be sold to institutional investors.

(2) Partial credit guarantees: Partial credit guarantees are typically provided by multilateral agencies and, as the name implies, cover a portion of the financing for which they provide support. There have not been a large number of these transactions, but they provide yet another means of breaching the sovereign ceiling.

The most common form of partial credit guarantee is the provision of a "rolling" guarantee of one or more debt service payments by the multilateral agency. As in the case of A Loan / B Loan structures, the presumption is that the issuer is capable of generating sufficient local currency to service its U.S. dollar-denominated debt, but would be unable to do so as a result of restrictions on transfer and convertibility if it were not to benefit from the preferred creditor status of the agency providing the partial credit guarantee. However, the guarantee covers any event of default by the project for the guaranteed payments. If the agency is required to pay under its guarantee, it will have a right to be reimbursed in accordance with an indemnity agreement that it has with the government of the country in which the project is located. If it is not reimbursed, this can result in a default by the country to the multilateral agency. It is believed that the government will normally allocate whatever foreign exchange is available so as to insure that a default does not occur. (A default by the government could result in the suspension of disbursements on all the multilateral's loans to the country and even cancellation of loans that have not been fully disbursed.) If the multilateral is reimbursed within a specified period of time (within 60 days for the World Bank), the guarantee is then rolled over and reinstated on the next debt service payment.¹⁷

(3) Political Risk Insurance: Political risk insurance ("PRI") is provided by the Overseas Private Investment Corporation ("OPIC"), an agency of the U.S. Government, by the Multilateral Investment Guarantee Agency ("MIGA"), a component of the World Bank, by export credit agencies, and by various private insurers. The three classic coverages are protection against (1) restrictions on the transfer and convertibility of currency, (2) expropriation of project assets, and (3) damage to project assets as a result of political violence. Coverage against breach of contract or certain changes in the regulatory regime which amount to "creeping expropriation" can be negotiated on a case-by-case basis.

Availability of coverage depends upon the project's host country, as well as upon the project's ability to comply with criteria regarding the environment, treatment of labor, etc. (Although private insurers are not bound by the policy concerns which guide governmental and multilateral agencies, it is unrealistic to expect them to provide coverage for projects which might prove to be a significant embarrassment.) As with all forms of insurance, coverage is limited with respect to its tenor and maximum amount.

Political risk insurance has been widely used in the bank market for many years. Commercial bank lenders typically require coverage in an amount equal to the full principal amount of the loan, and occasionally, for some portion of scheduled interest. The form of policy used in the bank market provides the insurer with a relatively long period to evaluate the validity of a claim prior to making payment. While acceptable to commercial banks, which are primarily concerned with ultimate repayment, this period is too long to insure timely payment of interest and principal with respect to a capital markets issue and thus is incapable of providing the support necessary to achieve a higher rating.

In 2000, the OPIC bank-market policy was restructured so as to insure that claims payment would occur within a period sufficient to maintain timely payments of interest and principal on a semi-annual basis. The resulting OPIC capital markets policy provided coverage only against the risk of governmental interference with currency transfer and inconvertibility and *not* against the risks of expropriation or political violence. Some private insurers are now offering transfer and inconvertibility insurance.

Rating agencies regard a properly-structured policy offering transfer and inconvertibility coverage as suffi-

cient to pierce the sovereign ceiling and permit a project to achieve a foreign currency rating equal to its local currency rating. The amount of coverage necessary is determined on a country-by-country basis, depending upon factors including the host country's previous implementation of exchange controls and the period(s) during which controls remained in effect.¹⁸ The advantage of this approach in contrast to bank-market practice is readily apparent: if coverage is required for 100% of principal, the maximum policy limits from the various PRI providers will seldom cover the amount of debt required to finance most infrastructure projects, whereas, if coverage is sized using the rating agencies' methodology, the available PRI limits will cover a far larger principal amount.

There is agreement among investment bankers, rating agencies, and institutional investors that these structures succeed in protecting against the risks which they are specifically designed to cover. Their limited applicability in the current environment stems from risks which they are not intended to cover, i.e., the risks which are captured in a transaction's local currency rating. Among these additional risks are the management and financial strength of the power purchaser (where financial strength includes the maturity structure of the power purchaser's debt and the currencies in which it is denominated), the certainty of the issuer's revenues (terms of its PPA or tariff), and the transparency and stability of the regulatory regime for the power sector.

Mitigating the Risk of Devaluation

An electric power project with local-currency revenues, which is viewed as investment grade with respect to its ability to service local-currency debt, will seldom be viewed as investment grade in its ability to service debt denominated in dollars. The project's cash flows in local currency will have a dollar value that fluctuates with changes in the exchange rate. For most developing countries, historical evidence indicates that this variability is sufficient to impair the ability of the project to meet its dollar debt service at some point during the tenor of the financing.

To address this risk, OPIC in 2001 began to offer a structure named the "Real Exchange Rate Liquidity Facility". The OPIC devaluation coverage establishes a "floor value" for the dollar value of a project's cash available for debt service. The coverage requires that the project sell its output pursuant to a long-term contract for

payment in local currency, with price changes indexed to the host country's rate of inflation. Throughout the tenor of the project's financing, the dollar value of the project's cash available for debt service is determined by two factors: (1) the local inflation rate and (2) the then-current exchange rate used to convert the project's local currency cash flow into dollars to pay debt service.

The OPIC coverage is structured to isolate currency risk from conventional project operating risks. A proforma calculation is performed to measure whether the exchange rate has declined to a level below the floor values established at the time of closing the project's financing. OPIC permits draws under the Real Exchange Rate Liquidity Facility only if (1) the real exchange rate at the time of a scheduled debt service payment has fallen below the corresponding floor value and (2) only if the project is otherwise unable to meet its scheduled debt service payment. The floor values are set at dollar values which provide the equivalent of a coverage ratio which would support a contractually-based project financing (e.g., an average debt service coverage ratio of 1.4 to 1.0).

Repayment of advances under the Real Exchange Rate Liquidity Facility is made only when the project has a positive cash flow after paying its senior debt service. The Liquidity Facility thus functions as a revolving credit facility, with payments of interest and principal to the Liquidity Facility being subordinated to the project's senior debt service (except in liquidation, where the outstanding balance of the Liquidity Facility ranks *pari passu* with the project's senior debt). Appreciation of the real exchange rate therefore benefits the OPIC by providing the positive cash flow with which to repay previous draws under the Liquidity Facility.

The effect of the devaluation coverage is to take a contractually-based project financing which has investment-grade characteristics in local currency (but which is exposed to market risk in converting to dollars) and transform it into the equivalent of a dollar-based PPA financing. The devaluation coverage does not assist in piercing the sovereign ceiling, but rather enables a project to obtain an investment-grade rating despite a mismatch between local-currency revenues and dollar-denominated debt service. The coverage is applicable only in countries with reasonably flexible prices and exchange rates, which facilitate the process by which the real exchange rate reverts to an appropriate long-run value. As is the case with the structures for breaching the sovereign ceiling, devaluation coverage is useful only if

the transaction to which it is applied can obtain an investment-grade rating on a local currency basis.

Local Capital Markets Financing

Most developing countries do not have local capital markets that provide long-term financing. Long-tenor financings for infrastructure projects require both a supportive institutional framework in the form of pension funds and institutional investors with the legal ability to purchase such securities and a favorable macroeconomic environment, with a moderate rate of inflation and expected foreign exchange rates which do not create an unduly large risk premium.

Although there is a significant amount of interest currently in devising structures to facilitate local capital markets financings, to date only a very few infrastructure deals have been done. In these transactions, investors have been encouraged to purchase securities with a long tenor by offering the investor the option to put the security to a creditworthy third party (such as a multilateral agency). The point at which the put can be exercised is typically equal to (or slightly longer than) the tenor which investors are normally willing to accept. The put gives the investor the ability to reassess both the credit of the issuer as well as the macroeconomic fundamentals of the project's host country in deciding whether to exercise the put or hold the securities until maturity.

In a local capital markets financing, the project's revenues are denominated in the same currency as its debt service. In the absence of risks relating to (1) a potential currency mismatch between revenues and debt service and (2) convertibility of local currency to pay debt service, most electric power projects should be able to achieve a national scale rating sufficient to attract local investors, who are the primary buyers of such transactions.

Emerging Role of Monoline Bond Insurance

In recent years several private monoline bond insurance companies¹⁹ have begun to provide comprehensive financial guarantees for selected emerging market transactions.²⁰ These companies normally will guarantee only bonds that have been structured to achieve at least a low investment-grade rating, and for this reason, in the emerging markets, they have favored future-flow transactions. However, recently they have provided guarantees for a few project bonds in investment grade countries (for example in Chile) and bonds for projects in non-investment grade countries which have achieved a

low investment grade rating through some of the structures described above. When such financial guarantees are used, they have the benefit to the issuer of lowering the all-in cost of financing and providing market access under almost any conditions.²¹ The fact that the ratings of insured bonds are not linked to sovereign ratings (and thus downgraded if the sovereign rating is lowered), makes insured bonds particularly attractive to some investors.

IV. Market Participants' Views on Current Practices

During the summer and early fall of 2002 a number of interviews and telephone surveys were conducted with various market participants—including institutional investors, investment bankers, rating agencies, multilateral and government agencies, and monoline bond insurers.²² They were asked to identify what, for them, were the strengths and weakness of the various forms of risk mitigation and public-private risk sharing in developing-country project finance. They were also asked for ideas on potential new structures. Some of the key observations are summarized here.

Views of Institutional Investors

A telephone survey was conducted of major institutional investors that have historically bought project finance securities.²³ The survey focused on investors in electric power transactions for two reasons: (1) the majority of non-export, developing-country project financings are in the power sector, and (2) the ability of power projects to sell their output pursuant to long-term contracts gives these projects an inherently lower risk profile than those infrastructure projects which are exposed to market risk. The results of this survey are summarized below.

Risk Tolerance: Investors were questioned about their views on power sector investments in both developed and developing countries. Most investors are willing to purchase both investment-grade and non-investment-grade transactions. Almost all are willing to purchase transactions with (appropriately mitigated) construction risk, as well as merchant risk (i.e., projects that sell on the spot market rather than pursuant to long-term contracts). Most are also open to the purchase of subordinated debt, although with a greater variety of restrictions specific to each investor.

Neither merchant risk nor subordinated debt have been components of developing-country power project financings, but the willingness of investors to assume these risks indicates that power sector investments are not constrained by an excessively conservative approach to the industry.

Analytical Approach: Although the rating of a transaction is important to investors for regulatory reasons, investors in project finance transactions (in both developed and developing countries) look through the rating and perform their own analysis of the project and its structure. It is essential that the project have a strong economic rationale, as well as a structure that mitigates major economic and political risks. Even in the case of a transaction in which the project's debt is guaranteed by a monoline insurer, investors perform an independent analysis of the project's structure and economic basis, although this analysis may be slightly less extensive than in the case of a conventional transaction which does not carry a comprehensive guarantee.

Most investors will consider unrated transactions, but a rating from at least one rating agency is the norm. Although individual investors may prefer that a transaction be rated by a particular rating agency, investors' internal policies generally do not require that a specific rating agency must provide a rating for a transaction. An investment-grade rating from one of the three major internationally-recognized rating agencies is sufficient to obtain an NAIC-2²⁴ rating. Obtaining an appropriate NAIC rating for an unrated international transaction would be difficult, and failure to do so would place the transaction in the disfavored, below investment-grade category.

In analyzing the political risks of developing-country projects, investors tend to regard the risks of expropriation and political violence as threshold issues. If an investor has meaningful concerns about either of these risks, the solution is not to look for means of mitigating these risks, but rather to avoid any investments in the country in question. On the other hand, the three most important political risks are the related issues of devaluation, inconvertibility, and regulatory regime for the electric sector. Each of these risks is regarded as critical.

In assessing country risk, virtually all investors require input from a sovereign analyst within their firm. In addition to providing an assessment of the country and the effectiveness of the transaction's structure in mitigating country risk, the sovereign analyst may also weigh the value of the proposed project finance investment

against the returns which could be obtained from other uses of the country exposure,

Structuring Considerations: Today all investors are hesitant to consider transactions in developing countries. In part, this hesitancy comes from a genuine appreciation of the risks of such investments, but it also stems in part from a fear that even a well-structured transaction may fail to get internal approval in the current environment. Most investors say they are willing to consider transactions with below investment-grade ratings located in countries with below investment-grade ratings, but qualify this answer by pointing to the practical difficulty of finding any acceptable such transactions today.

All investors expressed a willingness to consider transactions in below investment-grade countries, if the transaction were structured to achieve an investment-grade rating. Most investors indicated that a transaction rated Baa2/BBB would have a substantially greater likelihood of being purchased than one rated Baa3/BBB-; however, several investors questioned the benefit of a higher rating by noting that rating agencies have recently downgraded transactions by three notches in a single move. (A rating high enough to protect a transaction from a three-notch downgrade is regarded as unacceptable to project sponsors because such a conservatively structured transaction would fail to accomplish the sponsor's objectives in adopting a project-finance rather than a corporate-finance approach.)

In assessing specific structural elements, investors were split on the question of what, if any, value is provided by having a project finance transaction include a tranche of financing provided by a multilateral or U.S. government agency, where the agency financing is *pari passu* with the tranche purchased by the investor. Some investors thought that this structure provides a small amount of additional comfort, but others regarded it as adding no value. No investors saw this approach as decisive in persuading their institution to enter into a transaction which would not have been acceptable in the absence of the agency co-financing.

Similarly, investors expressed reservations about the benefits of A Loan / B Loan structures. Recent events in Argentina have given them a new appreciation of the limitations of this structure. Although the A Loan / B Loan structure is specifically intended only to protect against transfer and convertibility risks, many investors hoped that the presence of a multilateral agency in these transactions would result in pressure from the agency on the Argentine government to follow policies which

would enable these issuers to avoid default. The presence of multilateral agencies as co-participants in the Argentine transactions has left some investors with the impression that they would be in no worse position to resolve the problems currently facing these transactions if the only lenders involved were private investors.

Institutional investors' views with respect to the value of A Loan / B Loan structures is in marked contrast to that of project sponsors, who tend to place significant value on the participation of multilateral agencies in their transactions. Project sponsors expect to have to negotiate with counterparties or local officials at various points during the course of a project's operating life, and they believe that, if multilateral agencies share a common interest, they can be effective in helping to resolve the difficulties which will inevitably arise.

With respect to third-party support for a transaction, institutional investors see no meaningful difference between support provided by a major multilateral agency and support provided by a U.S. government agency. (Many investors put little credence in support from some lesser-utilized multilateral agencies, despite the fact that these agencies have preferred creditor status.) Investors split on the question of support provided by private political risk insurers, with some investors giving this support a degree of credibility comparable to that of multilateral and U.S. agencies and others regarding it as a less valuable substitute on the grounds that "insurance companies are in the business of finding ways not to pay".

Liquidity: The investors interviewed were primarily insurance companies which follow a buy and hold approach, rather than money managers and other "total rate of return" accounts, which are less consistent participants in the project finance market. The investors interviewed were therefore not particularly concerned about liquidity, with many expressing the opinion that project finance transactions were bought with the expectation that liquidity would essentially be zero. These investors rarely sell the project finance issues in their portfolios, and if they do so, these sales are primarily motivated by concern about the credit of the issuer and, less frequently, by portfolio management concerns, such as avoiding undue concentrations of holdings of transactions with the same sponsor.

Current Market View: It is impossible to overstate investors' pessimism regarding the prospects for developing-country transactions in the current environment. Investors repeatedly expressed the belief that, regardless

of the merits of an individual transaction, they would have great difficulty in gaining internal approval to purchase any developing-country project financing.

Since Argentina's problems began to attract broad attention in the spring of 2001, the market for developing-country financings has remained difficult. Deteriorating economic conditions, declining exchange rates, and political uncertainty have had a dramatic effect on several countries and cast a pall over the market as a whole. Yet, despite the reality of Argentina's problems, many investors expressed frustration at what they believe has been and continues to be an overreaction on the part of the rating agencies. The risk of what many investors feel is an overly aggressive approach to downgrades provides one more reason not to own securities issued by developing-country projects.

Although countries such as Colombia, Venezuela, India, and the Philippines have changed the rules which govern the electric power sector to the detriment of projects which were financed in reliance upon those rules, it is Argentina which has come to symbolize for most investors the dangers of investing in developing countries. By pegging the Argentine peso to the U.S. dollar, Argentina created a structure which was equivalent to the Indonesian (and other) PPAs which were indexed to the U.S. dollar exchange rate. Investors believed that Argentina was committed to assuring that the U.S. dollar value of the local currency revenues of companies financed with U.S. dollar debt would remain constant.

The Argentine devaluation, followed by the authorities' refusal to allow companies to adjust tariffs to maintain previous U.S. dollar values, fused in investors' minds the linkage between devaluation and the regulatory regime for the electric sector. In retrospect, Indonesia appears as a simple case of breached contracts, rather than a more subtle attempt to change the rules, even though the underlying economic and political rationale was the same. Argentina, on the other hand, has led to increased awareness of the risks of changes in the regulatory regime and, at the same time, to an appreciation of the limitations of structures designed to protect against inconvertibility, even when the transactions include preferred creditors.

Views of Investment Bankers

Interviews were held with personnel at a number of investment banking firms which have historically been active in the market for developing-country infrastruc-

ture project and/or structured sovereign and corporate financings.²⁵ Their views can be summarized briefly as follows:

- The partial credit (rolling debt service) guarantee is an attractive product because it can create an investment-grade rating for a transaction and is simple for investors to understand. (This was the view until the recent action of the World Bank in Argentina.)
- PRI coverage for inconvertibility is an attractive product where the transaction has an investment-grade rating on a (global scale) local currency basis.
- Comprehensive debt guarantees by multilateral agencies or monoline insurers are attractive because they represent a product which investors will buy in the current market.
- Other, more heavily structured approaches are unattractive because they require a substantial time commitment from the investment banker, are more difficult to sell to investors, especially in the current market, and are therefore, a poor use of time when compared to other investment banking products.

It is not an overstatement to say that no effort is currently being put by investment bankers into the development of new structures to facilitate developing-country infrastructure projects.

Views of Rating Agencies

Rating agencies do not offer suggestions as to how transactions should be structured, but rather respond to transactions and structures that are presented to them.²⁶ Substantial amounts of material have been published by each of the three major rating agencies describing both their methodology for evaluating developing-country infrastructure projects and the specific structuring techniques which have been used in previous international transactions. The actions taken by rating agencies with respect to the debt ratings of developing-country infrastructure projects indicate even more clearly their views regarding the value of the various structures which have been used to date.

Ratings downgrades have stemmed from two separate sources. The first is the fact that all electric power projects (except AES Tietê in Brazil and the Fortuna project in Panama) have had ratings which were capped by the sovereign ceiling; as the host country's sovereign rating has declined, so too has the project's rating. The

second source is the connection between macroeconomic factors and the U.S. dollar value of the project's revenues and cash available for debt service. As noted above, devaluation and economic dislocation within the domestic economy have motivated some governments to change the rules governing the electric power sector or to assist in the abrogation of PPAs.

In interviews with rating agencies, each stressed the widespread occurrence of political intervention in the electric sector in countries such as Argentina, Colombia, Venezuela, the Philippines, and India. Although rating agencies differ in their views as to how closely the electric sector is linked to the government, all view the prospect of adverse government intervention to hold down electricity prices for consumers as highly likely in the event of devaluation or a currency crisis tied to capital flight and declining central bank reserves. The prospect of this type of intervention creates substantial uncertainty about the revenues earned by power generators and distributors, which in turn, makes it increasingly difficult for power sector companies to obtain investment-grade ratings on a local currency basis.

Views of Certain Multilateral and U.S. Government Agencies

Interviews were conducted with officials at the World Bank, IFC, MIGA, the Inter-American Development Bank ("IDB"), and OPIC. At each of these institutions, work is underway on the development of new structures to facilitate capital markets financings for developing-country infrastructure projects.

The approaches being pursued can be categorized as follows:

- Increasing the use of local rather than international capital markets to finance projects
- New uses of partial risk guarantees, and
- Expanded use of comprehensive debt guarantees

In each case, these efforts represent work in progress, not a finished product. The state of each of these development efforts will be summarized below.

Local Capital Markets Financing: Both the IFC and the IDB are working on ways to expand the use of local capital markets to finance infrastructure projects, and certain aspects of OPIC's product development work (described below) also is intended to be used to facilitate local capital markets financings.

Ideal conditions for the development of local capital markets include both appropriate institutions, such as

pension funds and life insurance companies with the need and legal ability to invest long-term, and favorable macroeconomic conditions, such as a moderate inflation rate and reasonably stable exchange rates. Where these conditions are not found, local capital markets tend to provide short-tenor financing in limited amounts at high, and often, floating rates of interest.

Although market capacity can be a significant issue for the financing of infrastructure projects, the worst aspect of most local capital markets is the fact that available tenors usually are short. As a result, most efforts to encourage local capital markets financing have involved put structures which allow local investors to purchase long-tenor securities, with an option to shorten the tenor to a length closer to the market norm by the requiring a creditworthy third-party to purchase the securities upon the exercise of the put.

This approach was taken in two electric power transactions by Brazil's development bank, BNDES (which has indicated that it does not intend to repeat this structure), and is currently being offered by the IDB. It has the advantage of simplicity, and it directly addresses local investors' major concern. Its disadvantage in the context of infrastructure financing, which generally requires long-tenors with back-end loaded amortization schedules, is that a put which can be exercised at, say, the fifth year of the financing amounts to a guarantee of almost all of the principal amount of the transaction.

A different approach is being taken by the IFC, which believes that local investors will purchase longer-tenor securities if the credit profile of the transaction is improved by a contingent short-term debt service guarantee which can be called upon in certain specified circumstances in which power and other infrastructure projects are likely to encounter difficulties. Experience has shown that the greatest difficulties for electric power projects are created by a devaluation of the host country's currency. As indicated above in the discussion of rating agency concerns, the prospect that local authorities will not permit contractually-mandated price increases to be passed through to consumers jeopardizes the project's cash flow and, thus, its ability to pay debt service, regardless of whether that debt service is in U.S. dollars or local currency.

The IFC has analyzed economic crises in a variety of developing countries and concluded that the most turbulent period, during which governments might be especially concerned about dampening power price increases,

generally lasts no longer than two years. After this two-year period, economic conditions tend to stabilize and it is politically easier to provide tariff relief.

Upon the occurrence of a triggering event, such as a major devaluation, a project's debt service for the following two years would be covered by an IFC guarantee. The documentation for the guarantee would specify a procedure for measuring devaluation and thus for determining when the value of the host country's currency had declined sufficiently to trigger the guarantee. The devaluation needed to trigger the guarantee would be of a size comparable to previous devaluations which were associated with widespread economic hardship. Thus, bondholders who purchase the project's securities would have the benefit of contingent support which would prevent a deterioration of the project's credit during periods when its cash flows are likely to be negatively impacted by reduced demand or adverse regulatory action.

Both the put structure and the proposed contingent debt service guarantee are aimed at changing the investment decisions of investors located in developing countries. Most U.S. institutional investors who were surveyed indicated that they would not purchase securities denominated in the local currency of a developing country, and (with one exception) those few which did indicate willingness to purchase such securities said they would do so only if they were able to enter into a currency swap which would enable them to receive debt service payments in U.S. dollars. As a practical matter, such swaps are unlikely to be available with an appropriate tenor at a reasonable cost. One investor did, however, indicate an ability to purchase securities denominated in local currency without the need to swap back to U.S. dollars.

Whatever new structures are developed to encourage the growth of local capital markets, certain institutional reforms could assist in enabling these markets to provide additional infrastructure financing. For example, in some Latin American countries, a large proportion of pension fund assets are required to be invested in sovereign debt; loosening such regulations would free a significant amount of capacity to be allocated to domestic infrastructure projects. Appropriate portfolio diversification regulations could also reduce the amount of developing-country pension fund assets which are invested abroad, rather than in local capital markets. Finally, it has been suggested that the development of local capital markets could be accelerated by having multilateral institu-

tions issue securities in these markets, rather than limiting their activities to the purchase of securities issued in these markets by other institutions.

Targeted Risk Guarantees: The World Bank is considering ways to use its partial risk guarantee program to provide investors with more confidence that governments will live up to their obligations to infrastructure projects. These obligations come in many different forms, including maintaining a power purchaser's ability to recover from the public the full cost of purchased power, tariff adjustments in accordance with a previously-agreed methodology, enforcement of consistent procedures governing dispatch of energy plants, and reasonable regulation of the spot market and efficient settlement procedures for spot-market energy sales.

Institutional investors who were surveyed repeatedly expressed concern about governments' willingness to change the rules governing the electric power sector to favor consumers at the expense of project sponsors and bondholders. Investors felt that this political risk is not an appropriate risk to be taken by bondholders. Investors and other interviewees, such as private political risk insurers, indicated their belief that multilateral agencies should encourage appropriate behavior on the part of developing-country governments; yet, at the same time, they expressed frustration at the apparent ineffectiveness of moral suasion.

Private insurers have argued that there are incentives for host-country governments not to honor agreements: domestic political pressures can be accommodated at the expense of foreign investors who have no effective recourse. Although government officials within host countries may reject the view that they believe they can act with impunity, the perceptions of foreign investors will be decisive in determining future investment levels.

A number of investors also expressed the opinion that governments should have some degree of financial risk with respect to privately-owned power projects. The suggestion was not that a host country government should be exposed to a project's normal operating risks, but rather, that it should demonstrate that the project is important to the country and that the government will be exposed to some degree of financial liability if it unilaterally changes the rules of the game to the detriment of project sponsors and bondholders.

The IDB has also utilized targeted risk guarantees structured on a project-specific basis. For example, IDB provided a guarantee for an electric power generating

plant developed by Cogentrix in the Dominican Republic. The US\$150 million guarantee covers the risks of currency convertibility and transferability and the risk of premature termination of the 20-year PPA. (A related example of a targeted risk approach to political risk is Zurich Emerging Markets Solutions' recently offered "non-honoring" coverage, which insures against failure to honor a sovereign guarantee.)

Although specific proposals for structuring a World Bank partial risk guarantee covering a developing country's electric sector regulatory regime have yet to be worked out, two methods for implementing such a guarantee have been considered. The guarantee could cover a portion of the project's securities, with payments made by the World Bank being repaid by the host country government pursuant to a counter-guarantee, or a local bank could issue a letter of credit to be drawn upon in the event that the host country government breaches its obligations. The letter of credit would be guaranteed by the World Bank, and the host country government would be required to reimburse the local bank for draws upon the letter of credit.

A partial risk guarantee targeted at the government's obligations to maintain an appropriate regulatory regime can meet the concerns expressed by investors regarding (1) their aversion to taking the risk that the government will alter the regulatory regime and (2) their desire to see the government have a financial stake in the success of privately-financed power projects.²⁷

Whatever form a targeted risk guarantee takes, it should accomplish two goals:

- Enable infrastructure projects to achieve investment-grade local currency ratings in cases where the host-country's government lacks an investment-grade rating on a local currency basis and where local distribution companies may also lack local-currency investment-grade ratings, and
- Enable the infrastructure project's rating to be significantly de-coupled from the sovereign's foreign currency rating, so that a downgrade of the sovereign does not normally lead to a downgrade in the project's rating.

To accomplish these goals, it is essential that any newly-devised targeted risk coverage clearly define the risks which are to be covered. Rating agencies and institutional investors will assign value to targeted risk structures only if the provisions of the guarantee can be interpreted without ambiguity. The agreement between a mul-

tilateral agency and the government of the host country must, therefore, specify the government's commitments with sufficient precision that all concerned parties can readily determine whether the government has complied with the agreement.

Expanded Use of Comprehensive Debt Guarantees:

The impetus for expanded use of comprehensive debt guarantees comes from OPIC, which is currently attempting to expand its expropriation coverage to insure against the risk of a sovereign government's failure to live up to its obligations with respect to an infrastructure project. The proposed OPIC guarantee would cover investors in the event that a sovereign government failed to pay on the government's guarantee of the project's debt. The structure is similar to OPIC's capital markets inconvertibility policy in that a six-months debt service reserve will be used to cover what would otherwise be a payment default and thus to keep interest and principal payments current during the six-month period in which OPIC will determine if the claim for coverage is valid.

At this stage of its development, the OPIC guarantee would require an unpaid arbitral award against the host country government to satisfy OPIC's statutory requirements for providing coverage. (Failure to pay the arbitral award would constitute expropriation.) "Fast track" arbitration is expected to produce an award within three to four months, well within the six-month period covered by the project's debt service reserve. However, the theoretical possibility of an unfavorable outcome of arbitration has been raised by investment bankers and rating agencies as a major issue.

The new OPIC program is similar to a World Bank guarantee in requiring what is effectively a counter-guarantee from the host country government. However, it differs from a partial risk guarantee in that OPIC's guarantee would cover a comprehensive guarantee provided by the host country government. This underlying guarantee would cover all project risks, not merely certain political risks which are within the government's control.

OPIC has suggested that its expanded expropriation coverage could, in turn be guaranteed by a monoline insurer, which would assume the risk of an unfavorable arbitration outcome. If wrapped by a monoline insurer, the guaranteed securities could be denominated in local currency for sale in local capital markets or could be denominated in U.S. dollars, as are most wrapped issues. Using a monoline insurer to wrap OPIC-insured securities denominated in local currency as a means of lengthening the tenors available in local capital markets pre-

sumes that local investors are more concerned about credit quality than about the risks of holding securities denominated in local currency.

OPIC can provide coverage only for projects with significant private sector involvement; however, government guarantees of project debt are more likely to be obtained where the government also has a significant interest in a project. This tension may make the expanded expropriation coverage less likely to be utilized for power projects than for other activities less frequently privatized, such as schools, hospitals, airports, or port facilities.

Although OPIC has suggested that its new coverage might be more applicable to infrastructure projects in sectors other than electric power, one of the participants at the October 29th meeting argued that electric power is an activity which is more appropriately undertaken by developing country governments, which ultimately control the foreign exchange necessary to repay dollar financing, regardless of whether that financing is used to build facilities which are publicly or privately owned. Other participants rejected this view, but at various points in the discussions, comprehensive debt guarantees from multilaterals were suggested as perhaps the only feasible approach to financing new projects or underwriting a government's commitment to maintain an agreed-upon regulatory regime.

Views of Project Sponsors

Although project sponsors were not surveyed as part of the initial interview process, their views were expressed clearly during the October 29th meeting. Many of the points raised concerned, not the details of individual financing structures, but rather the actions which should be taken by project sponsors to increase the prospects for long-term success of their investments. The major points raised by these project sponsors can be summarized as:

- Strong economics are the most important element in the success of a project and will enable the project to overcome unforeseen difficulties.
- A project should be important to the government of the host country, and the more closely the project's financing can be tied to the sovereign or made to resemble a sovereign issue, the greater the project's chance of success.
- "Extreme transparency" in the award of a project is a key element in protecting a project from later regulatory or political risks.

- Participation in a project by multilateral agencies can help the project sponsor in dealing effectively with the government of the host country
- A lower return on investment, which is justified by a lower level of country risk, is preferable to higher expected returns, which reflect higher levels of country risk.
- Countries differ in their willingness to make post-investment changes in the rules governing the sector; many countries now have a track record which allows project sponsors to evaluate countries more accurately prior to making an investment.
- Renegotiations with counterparties or with the government of the host country should be expected during the life of a project; it is important that counterparties be commercially oriented.

Although project sponsors expressed satisfaction with investments in certain countries, uncertain outcomes in many other countries have engendered a great sense of caution concerning further investments in the current environment. To the extent that new structures to protect capital markets investors succeed in lowering the total package of project risks in a manner which also benefits project sponsors, these structures can also improve the attractiveness of equity investments in developing-country infrastructure projects.

V. Using the Capital Markets to Further Economic Development

The approaches discussed above are complementary, not competing alternatives. For example, large projects could benefit from utilizing both local capital markets financing and dollar-denominated, international financing.

In view of the difficult history of financing developing-country infrastructure projects, multiple approaches are more likely to produce superior results. Each structure will work in some circumstances and not in others. However, each of the basic approaches discussed above has questions which potentially limit its applicability.

Local Capital Markets Financing

Local capital markets financings are attractive in that, by providing financing in the same currency as the project's revenue, they eliminate the risk of adverse exchange rate movements resulting in either increased prices for consumers or, alternatively, a debt service

default. The development of the institutional framework and the macroeconomic conditions conducive to a local capital market varies from country to country, but in most cases, the following questions arise:

- Tenor of financing available?
- Cost of local currency vs dollar financing?
- Availability of fixed-rate financing?
- Interest-rate risk, if only floating rate financing is available?
- Comfort level of local investors with project finance structures?
- Market capacity?

Targeted Risk Guarantees

The targeted risk approach is intended to facilitate infrastructure financings in dollars. This approach has benefited from the fact that three alternatives have been available to breach the sovereign ceiling: (1) A Loan / B Loan structures, (2) rolling debt service guarantees, and (3) PRI coverage for inconvertibility. However, the World Bank has indicated that rolling debt service guarantees will not be available in the future, and PRI coverage, while readily available in many countries, tends to be in very short supply for countries with the greatest need.

A more fundamental issue affecting the targeted risk approach, however, is that breaching the sovereign ceiling is an unprofitable exercise unless the transaction is able to achieve an investment-grade local currency rating. An IFC official noted during an interview for this study that A Loan / B Loan structures are no longer marketed to institutional investors because transactions currently do not receive investment-grade ratings on a local currency basis.^{28 29} Some countries may have such a high level of risk that no amount of structure (short of a comprehensive debt guarantee) could enable an infrastructure project to achieve an investment-grade local currency rating. However, there remains a large group of "middle ground" countries, with reasonably sound economic policies and political regimes, in which these structures can be successfully applied.

Comprehensive Guarantees

OPIC's proposed expanded expropriation coverage, whether sold on the basis on an OPIC guarantee or wrapped by a monoline insurer, has essentially no execution risk, unlike the proposals for local capital markets financings or targeted risk structures, which require the

test of market acceptance to determine whether project risks have in fact been mitigated to investors' satisfaction. The major questions regarding the OPIC structure concern its development and applicability:

- Need for arbitration provision?
- Market acceptance of arbitration provision?
- Difficulty of obtaining sovereign guarantees for project debt?
- Types of projects for which sovereign guarantees may be available?

A variation on the concept of guaranteed transactions is the use of a monoline insurer to guarantee a project's debt, where the underlying project risks are mitigated by targeted risk structures, rather than an OPIC guarantee. Monoline insurers can be particularly effective in introducing new, complex structures to the market, because they have the resources for extensive due diligence and post-issuance surveillance. However, monoline insurers typically will wrap a transaction only if it has an investment-grade foreign currency rating (on an unwrapped basis). Thus, exactly the same problems arise with this approach as were discussed above in considering targeted risk structures.

VI. Conclusion and Key Issues Going Forward

If we step back from the details discussed above, it appears that there are two primary impediments for capital markets financings for infrastructure projects in developing countries. These risks apply both to global capital markets financing and to local capital markets financing.

One is how the impact of a major currency devaluation is distributed among the various parties involved in these transactions—domestic and international bond holders, financial guarantors, product off-takers, host governments (and their taxpayers), multinational and bilateral official institutions (and the governments backing them), and the individual project (including its corporate sponsors, equity investors and shareholders). The second is how changes in regulatory regime or failure of local authorities to comply with established regulatory requirements can be prevented, or failing that, how the costs of such actions are distributed among the same parties.

On the other hand, significant progress has been made on several issues:

- It appears that the problem of government blockage of transfer and convertibility has largely been resolved, although there are some remaining issues regarding capacity and pricing of protection against this risk.
- Some promising new approaches have been developed for dealing with devaluation risks—primarily through various forms of liquidity facilities or partial guarantees. However, these have yet to achieve widespread applicability or support.
- Some limited forms of protection against regulatory risks are also available—primarily in the form of breach of contract insurance or partial risk guarantees; yet, these have also proven to be of limited applicability or availability.

Multilateral and government backed financial organizations are in a good position to provide protection against risks such as devaluation and regulatory changes. With their strong financial backing, protection from bankruptcy, and ability to build a diversified portfolio of exposures, official agencies can weather setbacks arising from such events. As advisors to developing country governments, they also have some ability to prevent government actions that might cause defaults.

However, official agencies need not assume all the risks. Private sector lenders and insurers should be willing to provide protection against most corporate credit and market risks. The private sector also has special expertise in financial structuring and the accompanying legal and contract risks.

Participants in the October 29th meeting at the United Nations were generally in favor of establishing the proposed Independent Experts Advisory Group. Various points of view were expressed regarding the scope of its activities, but most participants agreed that it offers a unique forum for sharing information about potential structures which can be used for both local and international capital markets financings. In current market conditions, few private firms are generating significant revenues from developing-country infrastructure financings, a factor which seems to have dampened the competitive considerations which often inhibit the effectiveness of such collaborative undertakings.

By working together more effectively, public and private sector financial institutions should be able create new structures for infrastructure bonds that will both reduce the risks for creditors and lower financing costs for issuers.

Notes

- 1 A total of more than fifty professionals were interviewed.
- 2 Although many foreign corporate sponsors of projects have sufficient financial strength to fund project costs on their own balance sheet, they almost never do so. Infrastructure projects are capital intensive and their low technical risk and fundamental importance to economic development makes them natural candidates for financing with high levels of leverage. If that leverage is unavailable on a non-recourse basis, project sponsors seek opportunities elsewhere.
- 3 In this paper “dollar” is used as shorthand to denote a major international currency (U.S. dollar, Euro, yen, etc.).
- 4 Although the sovereign ceiling can be analytically distinguished from the government’s foreign-currency debt rating, for purposes of this study, the sovereign ceiling will be assumed to be the host country’s foreign currency debt rating.
- 5 Some infrastructure projects, mostly energy projects, generate exports that earn foreign exchange. Under certain circumstances this revenue can be captured in offshore escrow accounts and a portion of it used to make debt payments. These structures can greatly mitigate transfer, convertibility and exchange rate risks. Using such structures some projects are able to obtain investment-grade ratings on their foreign currency debt, even when the project is located in a below investment-grade country. As a result, these projects do not present the same degree of difficulty in obtaining financing as do infrastructure projects which must sell their output for local currency. We will not address these so-called off-shore “future-flow” transactions in this paper. (For more information on this type of financing, see “Development Financing During a Crisis: Securitization of Future Receivables,” by Suhas Kethar and Dilip Ratha, The World Bank, April 2001.)
- 6 PPAs normally call for power off-take prices to be indexed either to the U.S. dollar/local currency exchange rate or indexed to the host country inflation rate. Power prices can be determined on a merchant basis (i.e., no PPA) as is commonly done in the United States. However, this is currently not a common practice in developing countries.
- 7 These projects and the amount of capital markets debt they issued were: Dayabumi, US\$150 million (Indonesia, 1996); Guacolda, US\$180 million (Chile, 1996); Hero Asia, US\$110 million (China, 1994); Paiton, US\$180 million (Indonesia, 1996); Petropower, US\$162 million (Chile, 1996); and TermoEmcali, US\$156 million (Colombia, 1997).
- 8 A low investment-grade rating being a rating which ranges from “Baa3/BBB-” to “Baa1/BBB+”.
- 9 Unless otherwise specified, all references to ratings refer to foreign currency, not local currency ratings.
- 10 These projects and the amount of capital markets debt they issued were: AES China Generating, US\$180 million (China, 1996); Panda Global Energy, US\$155 million (China, 1997); and York Power Funding, US\$150 million (Trinidad & Tobago, 1998).
- 11 These projects and the amount of capital markets debt they issued were: Bauang, US\$85 million (Philippines, 1996), CE Casecanan, US\$ 372 (Philippines, 1995); El Habal, US\$60 million (Mexico, 1998); Fideicomiso Petacalco (power-related infrastructure), US\$316 million (Mexico, 1997); Fideicomiso Petacalco-Topolobampo, US\$250 million (Mexico, 1998); IEBA, US\$230 million (Argentina, 1997); Monterrey Power, US\$235 million (Mexico, 1998); Proyectos de Energia, US\$100 million (Mexico, 1998); and Quezon, US\$215 million (Philippines, 1997)
- 12 A below investment-grade rating being “Ba1/BB+” or lower.
- 13 The only two electric power project financings by issuers located in below investment-grade countries to obtain investment-grade ratings were: AES Tietê, US\$300 million (Brazil, 2001) and Fortuna, US\$170 million (Panama, 2002).
- 14 Global scale local currency ratings are comparable on a global basis, unlike national scale local currency ratings, which permit comparability only among issuers located within the same country. Unless otherwise specified, all references to local currency ratings in this study refer to global scale ratings.
- 15 Given the recent experience of sovereign rating downgrades of investment-grade rated countries (e.g., Indonesia, Colombia and Uruguay), similar protection may even be demanded for projects in investment-grade countries.
- 16 The Paris Club refers to the debt rescheduling forum for official creditors (primarily export credit agencies). When these creditors agree to a rescheduling, they usually require that the government of the rescheduling country seek comparable treatment from its private sector creditors.
- 17 The World Bank’s recent decision not to require Argentina immediately to reimburse it after failing to make a payment on sovereign bonds benefiting from a “rolling” guarantee has caused investors and rating agencies to reevaluate the protection provided by this particular form of partial credit guarantee.
- 18 In most countries where this policy has been used, 18 to 24 months of debt service coverage has been considered adequate by the rating agencies.
- 19 Interviews were conducted at Ambac, Centre Solutions, MBIA, and XL Capital Assurance.
- 20 Monoline insurers provide financial guarantees that carry an irrevocable and unconditional obligation to pay bondholders in the event of a default by the issuer. As a result, the rating of bonds protected by such financial guarantees are equivalent to the rating of the insurer, in most cases triple-A.
- 21 The high-investment grade ratings achieved by insured (or “wrapped”) bonds means that they can be sold to a larger group of institutional investors on better terms than the bonds would get if they were “unwrapped”. The insurer takes only a part of this saving for its premium.
- 22 In addition to the institutions listed below, interviews were also conducted with private political risk insurers: AIG Global Trade & Political Risk Insurance Company, Sovereign Risk Insurance, and Zurich Emerging Markets Solutions.
- 23 The institutions at which interviews were conducted were: AEGON, American General (AIG), CIGNA, John Hancock, MONY, Nationwide, New York Life, Pacific Life, Principal, Prudential, Thrivent, Trust Company of the West, and UNUM.
- 24 The NAIC is the National Association of Insurance Commissioners, a major regulatory body for the insurance industry. The NAIC ratings “NAIC-1” and “NAIC-2” represent investment-grade ratings, ratings below “NAIC-2” carry very different consequences in terms of their regulatory treatment.
- 25 The investment banks at which interviews were conducted were: Banc of America Securities, CSFB, Goldman Sachs, J.P. Morgan

Chase, Merrill Lynch, Salomon Smith Barney, and UBS Warburg

²⁶ Interviews were conducted at Fitch, Moody's, and Standard & Poor's.

²⁷ It may be difficult to obtain a partial risk guarantee covering a government's obligation to permit the full cost of FX-indexed power to be passed through to consumers. The fact that a government will be politically motivated *not* to allow a full pass through of costs imposed by a devaluation will, in all likelihood, prevent that government from entering into an agreement with a multilateral agency pursuant to which the government will commit to a course of action it knows in advance it will not wish to follow when required to do so. However, a partial risk guarantee to underwrite a government's commitment to permit inflation-adjusted power prices to be passed through to consumers should be more readily obtainable than a similar commitment with respect to FX-indexed price changes.

²⁸ The magnitude of this problem is revealed by an analysis of the 48 countries to which at least one rating agency has given a below investment-grade foreign currency rating. (There are only three split-rated countries in this group; 45 of the 48 have *only* below investment-grade foreign currency ratings.) The sovereign's local currency rating can be used as an indicator of the likely local currency rating of an issuer in the electric power sector. Unfortunately, in only five of these 48 countries does the sovereign have an investment-grade local currency rating from every rating agency that rates the country. In another four countries, one rating agency has given the sovereign an investment-grade local currency rating, but the other rating agencies which rate the sovereign regard it as below investment grade on a local currency basis.

²⁹ Another issue which must be addressed in dollar financings for electric power projects is the manner in which power prices are adjusted. While the pricing approach taken is usually a political decision made by the host government, each approach raises its own set of difficulties:

- PPA prices indexed to the U.S. dollar exchange rate: Most developing-country electric power project financings have featured PPAs indexed to the U.S. dollar exchange rate but, as a result, have been able to achieve investment-grade ratings only where the host country has an investment-grade foreign currency rating. The obligation of a distribution company to purchase power at prices indexed to the U.S. dollar exchange rate (especially when there is a risk that regulators will not allow these costs to be fully passed through to consumers) is similar to debt service on U.S. dollar-denominated debt; unless the distribution company has an investment-grade rating on a

foreign currency basis, its obligation to purchase FX-indexed power is unlikely to be regarded as sufficiently strong to permit an investment-grade rating on a local currency basis for the power supplier.

- PPA prices indexed to host country inflation rate: The foreign exchange liquidity facility offered by OPIC and Sovereign provides a mechanism for mitigating the risk that adverse exchange rate movements will reduce the dollar value of a project's local currency revenues to a level at which the project is unable to meet its debt service obligation on its dollar-denominated debt. On the other hand, this alternative also faces obstacles in enabling a transaction to achieve an investment-grade local currency rating. The fact that a distribution company which is the counterparty to a PPA would be required only to purchase power at prices which escalate with local inflation avoids placing the type of stress on the purchaser's credit strength which is created by FX-indexed purchase obligations. Therefore, a distribution company with an investment-grade local currency rating would probably be regarded as providing revenues that have a quality and degree of certainty that is consistent with a local currency investment-grade rating for the power supplier. The problem with this analysis is the shortage of developing-country distribution companies with investment-grade ratings on a local currency basis. Moreover, the statistics presented above with respect to sovereign local currency ratings suggests that it will not be easy to structure transactions to deal with this issue.
- Merchant plant (i.e., no PPA): In theory, the problem of the credit strength of a developing-country power purchaser could be circumvented by structuring a generation project on a merchant basis, as has been done in the U.S. Unfortunately, this path also has its own set of obstacles. First, there have as yet been no developing-country merchant power project financings in the capital markets (and, depending on how transactions are categorized, only one or two in the bank market). Adding merchant risk to country risk is perhaps a counterintuitive approach to take in attempting to present investors with a set of risks that they are willing to buy. Second, it is not clear how the risk of a potential mismatch between local currency revenues and dollar debt would be managed. Providers of the FX liquidity facility structure have stressed a strong preference for contractual revenue streams. Third, during interviews for this study, investors expressed a heightened degree of caution about assuming merchant risk in view of recent developments with some merchant project financings in the United States.

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